

Monetary Sector Analysis of Economic Growth and Its Implications on Foreign Direct Investments (Case Study in Indonesia, Singapore and Malaysia)

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ABSTRACT

Almost all countries in the world are in economic recession, including ASEAN. An economic recession is a decline in real gross national product (GNP) for two consecutive quarters. Economic growth becomes negative (economic growth is experiencing constructive). Julius Shiskin was an economist from the USA who first introduced an economic recession in a New York Times article entitled "The Changing Business Cycle" in 1974. Factors that affect an economic recession include: the amount of money issued, interest rates, inflation, public savings, exchange rates or exchange rates, and inflation. To overcome the economic recession so that it does not spread and all the impacts it causes, the government implements economic policies that are expected to be able to control and restore economic stability. According to Mathias Aroef (2009) economic policies carried out by the government can be addressed in 3 groups, namely: supply side policies, fiscal policies and monetary policies. Supply side policies are government policies in the economic sector to increase the efficiency of companies so that they can increase the supply of goods and services at lower prices and with better quality. Fiscal policy is government policy by changing state revenue and state expenditure with the intention of controlling the economy for the better. Meanwhile, monetary policy is the policy of the monetary authority to control the demand for money in the community to achieve

certain goals, such as controlling inflation, maintaining the stability of the rupiah exchange rate, increasing employment opportunities, determining interest rates and the amount of money in circulation. This study aims to analyze several economic variables on economic growth and make it happen in Foreign Investment. The economic variables analyzed were the amount of money in circulation, interest rates, inflation, foreign exchange savings and investment, as independent variables. While economic growth and FDI as the dependent variable. The data used is secondary data from three countries, namely Indonesia, Singapore and Malaysia, during the period 1981-2020. This research is a quantitative research. Quantitative methods are used to statistically explain the relationship and influence of monetary variables on economic growth and their impact on FDI. The data analysis technique used is multiple linear regression.

Keywords : money supply, interest rate, inflation, public savings, exchange rate, investment, multiple linear regression.

I. INTRODUCTION

The economic growth of Indonesia, Singapore and Malaysia, in the 2016-2020 period has decreased. As shown in table 1 below.

Table 1. Economic growth in Indonesia, Malaysia, Singapore and Thailand Year 2020

No	Country	Tahun 2020			
		Quarter I	Quarter 2	Quarter 3	Quarter 4
1	Indonesia	2,97%	-5,32%	-3,49%	-2,19%
2	Singapura	-3,30%	-13,20%	-5,80%	-2,40%
3	Malaisia	-0,70%	-17,10%	-2,70%	-3,40%

Source : Kontan.co.id. 11-02-2021. Accessed 20-03-2021

If we look at table 1 above, Indonesia has only experienced an economic recession in the second quarter of 2020, while Singapore and Malaysia have experienced a recession in the first quarter of 2020.

In many countries where the Central Bank conducts studies on monetary policy, monetary policy instruments reveal that there is a long-term relationship between these monetary policy variables. These monetary policy variables include: money supply or money supply, interest rates, inflation, public savings, exchange rates and investment.

Research on "The effect of monetary variables on economic growth and their implications for FDI in Indonesia, Singapore and Malaysia, aims to: (1) analyze the joint effect of the money supply, interest rates, inflation, public savings, exchange rates and investment on economic growth, (2) analyze the effect of the money supply on economic growth, (3) analyze the effect of interest rates on economic growth, (4) analyze the effect of inflation on economic growth, (5) analyze the effect of public savings on economic growth, (6) analyze the effect exchange rate on economic growth, (7) analyze the effect of investment on economic growth, and (8) analyze the effect of economic growth on FDI.

This research is important because this kind of research has never been done, and the results of the research will provide input to monetary policy makers in general in the future.

II. LITERATURE REVIEW

Amount of Money in Circulation

1. Classical Theory

a. Simple quantity theory (David Ricardo)

This theory states that the supply of money is directly proportional to the price level they have, the relationship is formulated: $P = f(M)$; or $M = k.P$; where M = money supply; k = constant proportional factor. If M increases, then the price will experience the same increase

b. Transaction equation (Irving Fisher)

Fisher argues that the emergence of money supply is caused by the process of using money as a transaction tool. Fisher formulated it as $MV + PY$. Irving Fisher stated that the value of money was determined by: 1) money supply;

2) velocity of money circulation; 3) the amount of goods traded.

c. Cambridge equation of exchange (Cambridge)

This theory assumes that ceteris paribus the amount of money circulating in society is proportional to national income or is formulated by:

$M_d = k.PY$. Meanwhile, the supply of money is determined by the government. In the balance position: $M_s = M_d$; so that $M_s = k.PY$; so that $P = 1/k M_s Y$

2. Keynesian theory

J.M. Keynes distinguished three motives for holding money, namely transaction motives, precautionary motives, and speculative motives.

3. Milton Friedman's Theory of Money Demand

Milton Friedman stated that people want to hold a certain amount of money from real balances, with the following formula:

$$M_d = P \cdot f(Y_p, r_b - r_m, r_e - r_m, \pi_e - r_m); \text{ Where : } \text{----} = \text{Request for real money balance}$$

Y_p = permanent income; r_b = estimated rate of return on bonds

r_m = estimated rate of return on money

r_e = estimated rate of return on stock

π_e = estimated inflation rate

Interest Rate

Hubbard (1997) says interest is the cost incurred by the borrower on the loan made and the reward for the investment for the owner of the capital. Kern and Guttman (1992) assume that interest rates are prices. The price of interest rates is set by the forces of supply and demand.

Inflation

Samuelson (2001) defines inflation as an increase in the prices of goods, services and factors of production. Based on the severity level, inflation can be grouped into: (1) mild inflation is inflation that is less than 10% per year, (2) moderate inflation is inflation that is 10% -30%. (3) large inflation is inflation of 30%-100%, (4) Hyperinflation is inflation of more than 100%

Community Savings

Community savings are the portion of income received by the community that has not been used for consumption. Community savings are equal to income minus public consumption. Saving usually occurs if the income is greater than the consumption that must be spent plus the taxes that must be paid. Factors that affect people's savings include: (1) people's income. The greater the income the greater the savings kept, (2) the interest rate. The greater the interest rate, the greater the savings rate, (3) the level of confidence. The higher the level of public trust in banks, the greater the level of trust to save their funds in banks.

Exchange rate

Mishkin (2008) stated that the exchange rate or exchange rate is defined as a comparison of the value of a currency with another currency. Meanwhile, Krugman (2009) says the exchange rate is the price of a currency compared to other currencies. Gustav Casel (1921) introduced the theory of Purchasing Power Parity (PPP). The main characteristics of this theory are: (1) homogeneous trading goods and flexible non-trade prices, (2) no constraints in international trade, (3) the same level of inflation. This theory is based on the law of one price which states that all goods in different places are sold at the same price.

Investment

According to Boediono, investment is an expenditure of the producer sector to purchase goods or services that will be used to increase the stock or area of the company itself. In simple terms,

investment is an investment to increase profits. There are 5 factors that determine investment, namely: (1) per capita income, (2) trend, (3) political and security situation, (4) political and economic situation, (5) condition of available facilities and infrastructure.

Economic growth

1. Classical Theory

This theory assumes that a country's economic growth will decrease with increasing population and increasingly limited sources of funds.

2. Neo-Classical Theory

This theory explains that economic growth can be stable with 3 important components, namely: labor, capital and technology.

3. Historical Theory

According to historical theory, the focus is on seeing economic growth from the prehistoric stage to industrial and world societies that have high levels of consumption.

4. Modern Economic Growth Theory

Modern economic growth theory is supported by WW Rostoe in his book "The Stages of Economic Growth" which states that economic growth is divided into 5 stages, namely: (1) traditional society, namely where production activities are still simple only to meet their own needs, (2) pre-take off, namely the stage where society strengthens and encourages economic growth broadly by making effective investments and productive savings, (3) the drive towards maturity, namely the stage where the economy grows regularly and business fields continue to increase in tandem with the establishment of modern technology. Investment and savings increase, (4) high consumption, namely the stage where the industrial sector is the leading sector, real income per capita continues to increase so that some people experience an increase in consumption that exceeds basic needs.

Foreign Direct Investment

Krugman and Obstfeld (2009) define FDI as the flow of funds into a country, as foreign companies that open branches of their companies to other countries. Keynesian theory says there are several things that affect investment, among others: (1) optimism, if future conditions are felt to have good prospects, then encourage people to invest, (2) economic growth, if economic growth increases, the

demand for output will also increase. will rise and will encourage investment, (3) an increase in public shares, increased public share capital will result in a decrease in the MEC value so that it will ultimately reduce investment, (4) technological change, if technological progress will reduce the cost of capital then it will increase investment, (5) changes in interest rates, the higher the interest rate, the greater the investment costs that must be incurred and the smaller the investment made.

Several FDI theories are presented by Ball et al (2014), including; (1) according to Hymer, companies or countries that will invest in other countries must have an advantage over local companies. FDI takes place because of imperfect product and market factors that allow multinational companies to conduct FDI, (2) according to Caves, companies investing abroad are in industries that carry out high technology and are also related to marketing, (3) according to Aliber, the foreign exchange market imperfections cause FDI from countries with undervalued currencies to countries with undervalued currencies.

III. RESEARCH METHODS

a. Population, Sample and Sampling

The population is the entire research subject. The population of this study is the monetary variable money supply, interest rates, inflation, public savings, exchange rates, economic growth, and Indonesia, Malaysia, Singapore and Thailand. While the sample is part of the population, namely the economic variables mentioned above during the last 40 years from 1981 to 2020. The sampling technique or sampling is non-probability sampling, with the type of quota sampling.

b. Research methods

1. Research variables

This dissertation research concerns the influence of monetary variables on economic growth and their implications for Indonesia, Malaysia, Singapore and Thailand. Therefore, the research variables are: (a.) Money supply or money supply is the entire supply of money in an economy. The supply of money includes currency (banknotes and

coins), demand deposits (current accounts) and quasi-money (savings, time deposits in rupiah, foreign exchange, current accounts in foreign currencies, securities (stocks and bonds) issued by the monetary system owned by the domestic private sector with a remaining term of up to one year (b.) The interest rate is the return on capital The amount is a certain percentage calculated from the principal loan that must be paid by the debtor within a certain period which is received by the creditor as compensation (c.) Inflation is a continuous increase in the price of goods (d.) Saving is income received by the public that is not used for consumption (e.) The exchange rate is the value of a country's currency as measured by the value other countries' currencies (f.) Economic growth is an increase in the ability of an economy to produce goods and services (g.) Foreign Direct Investment is real investment in the form of factories, land, inventories, involving capital and entrepreneurship where the investor remains in control on the use of invested capital.

Data analysis technique

The analysis technique uses multiple linear regression of time series data. There are the following stages:

1. Analysis of descriptive statistics
2. Root root test analysis
3. Multiple regression analysis

Research Hypothesis :

1. H1: There is a joint effect of the money supply, interest rates, inflation, public savings and the exchange rate on economic growth
2. H2: There is an individual effect of the money supply on economic growth
3. H3: There is an individual influence of interest rates on economic growth
4. H4: There is an individual effect of inflation on economic growth
5. H5: There is an individual effect of public savings on economic growth
6. H6: There is an individual effect of the exchange rate on economic growth
7. H7: There is an individual influence of investment on economic growth
8. H8: There is an individual effect of economic growth on Foreign Direct Investment

IV. RESULTS AND DISCUSSION

a. Descriptive Statistical Analysis

Table 2. Descriptive statistical analysis test results

	Z	Y	X1	X2	X3	X4	X5	X6
Mean	3.907500	5.621667	5.747500	7.796667	5.172008	3.786887	3.350000	21.61833
Median	2.800000	5.750000	5.900000	5.050000	3.750000	3.800000	1.200000	21.80000
Maximum	10.10000	14.50000	8.800000	32.10000	75.30000	5.800000	9.700000	30.80000
Minimum	-2.300000	-13.10000	2.300000	-8.700000	-8.700000	0.100000	0.300000	16.10000
Std. Dev.	3.196457	3.456797	1.551197	7.736305	8.207688	1.137832	3.675195	2.312843
Skewness	0.533318	-1.519596	-0.099502	0.673931	5.386224	-0.462323	0.760532	0.135241
Kurtosis	2.135453	9.680582	2.284838	3.213951	45.72397	3.386076	1.705243	3.927184
Jarque-Bera	9.425756	269.3343	2.755299	9.312544	9706.914	5.020119	19.95017	4.664148
Probability	0.008979	0.000000	0.252171	0.009502	0.000000	0.081263	0.000047	0.097094
Sum	468.9000	674.6000	689.7000	935.6000	620.6410	454.4264	402.0000	2594.200
Sum Sq. Dev.	1215.863	1421.984	286.3392	7122.199	8016.570	154.0648	1607.340	636.5597
Observations	120	120	120	120	120	120	120	120

FDI, the maximum value is USD 10,1 billion and the minimum value is USD – 2,3 billion with an average value of USD 3,9 billion. The highest economic growth was 14.5 and the lowest was -13.1 with an average economic growth of 5.6. The maximum amount of money in circulation is USD 8.8 billion and the lowest is USD 2.3 billion with an average value of USD 5.7 billion

The highest interest rate is 32.1%, the lowest is -8.7 % with an average value of 7.7 %. The highest

inflation was 75.3%, the lowest was -8.7 % and the average value was 5,1 % . . The highest community savings is USD 5,8 bilion, the lowest is USD 0,1 bilion and the average value is USD 3,7 nbilion. The hughes exchange rate is Baht 9,7, the lowest is Baht 0,3, and the average is Baht 3,3. The highest investment is USD 30,8 bilion,, the lowest is USD 16,1 bilion, and the average value is USD 21,6 bilion

b. Uji Akar Unit

Table 3. Unit root test results

No	Variabe Name	ADF Fisher	Chi Square	Kesimpulan
		Statistik	Prob	
1	Foreign Direct Investment (FDI)	87,0275	0.0000	Stationer at 1 st difference
2	Economic Growth	26,8633	0,0002	Stationer at level
3	Money Supply	54,2715	0,0000	Stationer at 2 nd difference
4	Interest Rate	24,2841	0,0005	Stationer at level
5	Inflation	29,2644	0,0000	Stationer at level
6	Savings Community	52,3711	0,0000	Stationer at 1 st difference
7	Exchane Rate	30,8224	0,0000	Stationer at 1 st difference
8	Investment	19,5617	0,0033	Stationer at level

Based on the results of the unit root test, all variables are stationery both at the 1st difference level and at the 2nd difference level. So that all variables can be used as variables research;

c. Test Multiple Regression analysis

Table 4. The results of the Y regression equation test

Dependent Variable: PE__Y_
 Method: Panel Least Squares
 Date: 05/09/23 Time: 18:54
 Sample: 1981 2020
 Periods included: 40
 Cross-sections included: 3
 Total panel (balanced) observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.103206	0.658484	10.78720	0.0000
JUB__X1_	-0.002862	0.000745	-3.841610	0.0002
BUNGA__X2_	-0.133856	0.068484	-1.954576	0.0531
INF__X3_	-0.099634	0.050434	-1.975535	0.0506
SAVING__X4_	0.023937	0.011371	2.105061	0.0375
KURS__X5_	0.000431	0.000172	2.495855	0.0140
INV__X6_	-6.96E-11	2.19E-11	-3.179214	0.0019
R-squared	0.209794	Mean dependent var	5.308333	
Adjusted R-squared	0.167836	S.D. dependent var	3.924660	
S.E. of regression	3.580193	Akaike info criterion	5.445273	
Sum squared resid	1448.409	Schwarz criterion	5.607877	
Log likelihood	-319.7164	Hannan-Quinn criter.	5.511307	
F-statistic	5.000117	Durbin-Watson stat	1.695487	
Prob(F-statistic)	0.000141			

Tabel 5. The result of the regression equation test

Dependent Variable: FDI__Z_
 Method: Panel Least Squares
 Date: 05/09/23 Time: 18:56
 Sample: 1981 2020
 Periods included: 40
 Cross-sections included: 3
 Total panel (balanced) observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2387.452	923.3817	2.585553	0.0109
PE__Y_	-29.55488	140.0785	-0.210988	0.8333
R-squared	0.000377	Mean dependent var	2230.565	
Adjusted R-squared	-0.008094	S.D. dependent var	5973.052	
S.E. of regression	5997.177	Akaike info criterion	20.25249	
Sum squared resid	4.24E+09	Schwarz criterion	20.29895	
Log likelihood	-1213.149	Hannan-Quinn criter.	20.27136	

F-statistic	0.044516	Durbin-Watson stat	0.213302
Prob(F-statistic)	0.833261		

Based on the results of the regression equation test of economic growth (Y) and the results of the FDI regression equation test (Z) the following results are obtained:

1. Taken together, the money supply, interest rates, inflation, public savings, exchange rates and investment have a significant effect on economic growth. This can be seen from the Prob (F-statistic) of 0.000141, which is less than 0.05.
2. The money supply is negatively related to economic growth, the greater the money supply, the higher economic growth and vice versa. The money supply growth rate should not be greater than the real output growth rate so that inflation does not occur causing economic growth to slow down. The money supply has an effect significant to economic growth, this can be seen from the probability of 0.0002 which is less than 0.05
3. The interest rate is negatively related to economic growth, the higher the interest rate, the lower the economic growth and vice versa. A high interest rate will cause people to put their money in banks and cause people to be reluctant to invest so that economic growth slows down, interest rates have no effect on economic growth , this can be seen from the probability of 0.0531 greater than 0.05
4. Inflation is negatively related to economic growth, the higher the inflation the lower the economic growth and vice versa. High inflation will cause production costs to increase, so that people are lazy to invest and promote sluggish economic growth. Inflation has no effect on economic growth, this can be seen from the probability that it is 0.0506 greater than 0.05
5. Community savings are positively related to economic growth, the greater the public savings, the greater the economic growth and vice versa. High public savings can be used as funds for economic development so that rapid economic growth. Public savings have a significant effect on economic growth, this can be seen from the probability of 0.0375, which is less than 0.05
6. The exchange rate is positively related to economic growth, the higher the exchange rate, the higher the economic growth and vice versa.

Exchange rates are related to international trade, countries that are increasingly in contact with other countries show that the country is increasingly open and its economy is growing. The exchange rate has a significant effect on economic growth, this can be seen from the probability that it is 0.0140 less than 0.05

7. Investment is negatively related to economic growth, the higher the level of investment, the lower the economic growth and vice versa. Investment has a significant effect on economic growth, this can be seen from the probability that it is 0.0019 less than 0.05
8. Economic growth is negatively related to FDI, the higher the economic growth the lower the FDI and vice versa. Economic growth has no effect on FDI, this can be seen from the probability of 0.8333 greater than 0.05.

V. CONCLUSIONS AND SUGGESTIONS

a. Conclusion

Based on the results obtained, several things can be concluded, namely :

1. Taken together, the money supply, interest rates, inflation, public savings, exchange rates and investment have a significant effect on economic growth.
2. Individually have a significant effect of the money supply on economic growth.
3. Individually there is no effect of interest rates on economic growth
4. Individually, there is no effect of inflation on economic growth.
5. Individually have a significant effect of public savings on economic growth.
6. Individually have a significant effect of the exchange rate on economic growth.
7. Individually there is no effect of investment on economic growth.
8. Individually there is no effect of economic growth on Foreign Direct Investment

b. Suggestions

1. The government, the Central Bank and the Ministry of Finance must coordinate to synergize financial policies related to the money supply, interest rates, inflation, public savings, exchange

rates and investment in order to increase economic growth.

2. The central bank must be able to determine the money supply quickly. So that the rate of growth in the money supply is not greater than the rate of growth in the amount of real output, so that there is no trend of rising prices of goods

3. The trend of interest rate growth in countries in the world is almost close to 2%. Therefore the central bank must correctly determine the interest rate which is moderate, not too high and not too low.

4. The Ministry of Finance and the Central Bank must make inflation targeting adjusted to the set interest rate.

5. The central bank must reactivate public saving activities. So that people do not use their income to buy imported goods, but use it more as development funds.

6. The central bank must be able to control the exchange rate so that it does not go up too high

7. The government, in this case the Coordinating Minister for Maritime Affairs and Investment as well as the chairman of BKPM/Minister of Investment, further improve their performance, especially in terms of facilitating licensing for investors

8. The central bank and the Ministry of Finance must be able to create a good business climate that can attract other countries or companies to make foreign direct investment

Board of Governor of the Federal Reserve System

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