Monetary Analysis of Indonesia's Economic Growth After the Asian Financial Crisis

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Abstract : This study analyses the relationship between monetary variables and economic growth in Indonesia after the Asian financial crisis in 1997/1998 using time series data from 2000 to 2018. The method used in this study is the Vector Error Correction Model (VECM). This study found that the exchange rate variables and the money supply had a significant adverse effect on economic growth.

Keywords: Economic Growth, Inflation, Interest Rates, Exchange Rates, Money Supply

JEL Classification : C40,G0,O10

1 INTRODUCTION

The Asian financial crisis occurred in 1997, which spread to the Asian region, especially East Asia (Kawai et al., 2012). Crisis shocks resulted in price volatility, and general prices increased massively. Economic instability occurred when the crisis took place.

In 2008, a global crisis occurred, which began with the failure of housing loans in the United States, which impacted global economic shocks. This happens because the United States' economic shocks have an impact on the USD exchange rate which is one of the currencies stored by many countries which automatically affects many countries around the world (Johnson, 2012).

The bank acts as a driver of economic growth as well as an instrument for managing the economy. Of course, banking with its various services is very influential on the economy (Akyüz, 2014).

Banks have a role in the business sector because banking is one of the institutions that serve the supply of capital in the form of loans and does financial transactions that are needed by the business sector. Banks with credit interest rates are an indicator of the economy. Because credit interest is an unavoidable cost of capital, rising and falling interest rates affect rising and decreasing inflation (McEachern, 2012). Inflation is a macro indicator of general price increases that determine economic stability. Economic stability significantly affects economic growth.

2 LITERATURE REVIEW

Economic growth reflects economic performance (Piros & Pinto, 2013). Technology influences economic growth (Corbett & Katz, 2012). The money supply has an impact on inflation. Because of the amount of money in circulation is a factor that affects general prices (Perloff, 2016).

The increase in several commodities is not referred to as inflation as long as it does not spread and affects or causes price increases in general (Holtfrerich, 2013).

Interest rates and inflation affect the real value of money represented by general prices (Collins, 2017). Monetary policy and fiscal policy can affect inflation (Handa, 2008). An increase in interest rates has an impact on inflation, and general price ultimately affects the economy (Ho & Yuen, 2003).

The Purchasing Power Parity (PPP) theory is a theory that explains the difference in purchasing power in two different countries based on the law of one price. This theory explains the effect of exchange rates on a country's economy (Heshmati, 2017).

3 RESEARCH OBJECTIVE AND METHODOLOGY

This study uses the Vector Error Correction Model (VECM) method using time series data. The formulation of the VECM model is as follows:

$$GDPt = \beta 0t + \beta 1INFt + \beta 2SBIt + \beta 3NTt + \beta 4MSt + \mu t$$

$$\Delta GDPt = \alpha 10 + GDPt\text{-}1 + \alpha 11INFt\text{-}1 + \alpha 12SBIt\text{-}1 + \alpha 13NTt\text{-}1 + \alpha 14\Delta MSt\text{-}1 + \alpha 15\Delta GDPtn + \Delta\alpha 16GDPt\text{-}1 + \Delta\alpha 17INFt\text{-}n + \Delta\alpha 18INFt\text{-}n\alpha 20\ \Delta\alpha 19S + NBIFt\text{-}n\alpha 20\ \Delta\alpha 19\ \Delta\alpha 22NTt\text{-}1 + \Delta\alpha 23MSt\text{-}1 + \Delta\alpha 24MSt\text{-}1$$

$$\Delta INFt = \alpha 20 + GDPt\text{-}1 + \alpha 21INFt\text{-}1 + \alpha 22SBIt\text{-}1 + \alpha 23NTt\text{-}1 + \alpha 24MSt\text{-}1 + \alpha 25\Delta GDPt\text{-}n + \Delta\alpha 26GDPt\text{-}1 + \Delta\alpha 27INFt\text{-}n + \Delta\alpha 28INFt\text{-}n + \Delta\alpha 29SBIt\text{-}1 + \alpha 30SBIt\text{-}n + \Delta\alpha 31NTt\text{-}1 + \Delta\alpha 32NTt\text{-}1 + \Delta\alpha 33MSt\text{-}1 + \Delta\alpha 34MSt\text{-}1$$

$$\Delta SBIt = \alpha 30 + GDPt\text{-}1 + \alpha 31INFt\text{-}1 + \alpha 32SBIt\text{-}1 + \alpha 33NTt\text{-}1 + \alpha 34MSt\text{-}1 + \alpha 35GDPt\text{-}n + \Delta\alpha 36GDPt\text{-}1 + \Delta\alpha 37INFt\text{-}n + \Delta\alpha 38INFt\text{-}n + \Delta\alpha 39SBIt\text{-}1 + \alpha 40SBIt\text{-}n + \Delta\alpha 41NTt\text{-}1 + \Delta\alpha 42NTt\text{-}1 + \Delta\alpha 43MSt\text{-}1 + \Delta\alpha 44MSt\text{-}1$$

$$\Delta NTt = \alpha 40 + GDPt\text{-}1 + \alpha 41INFt\text{-}1 + \alpha 42SBIt\text{-}1 + \alpha 43NTt\text{-}1 + \alpha 44\Delta MSt\text{-}1 + \alpha 45\Delta GDPt\text{-}n + \Delta\alpha 46GDPt\text{-}1 + \Delta\alpha 47INFt\text{-}n + \Delta\alpha 48INFt\text{-}n + \Delta\alpha 49SBIt\text{-}1 + \alpha 50SBIt\text{-}n + \Delta\alpha 51NTt1 + \Delta\alpha 52NTt\text{-}1 + \Delta\alpha 53MSt\text{-}1 + \Delta\alpha 54MSt\text{-}1$$

$$\Delta MSt = \alpha 50 + GDPt\text{-}1 + \alpha 51INFt\text{-}1 + \alpha 52SBIt\text{-}1 + \alpha 53NTt\text{-}1 + \alpha 54\Delta MSt\text{-}1 + \alpha 55\Delta GDPt\text{-}n$$

+ Δα56GDPt-1 + Δα57INFt-n + Δα58INFt-n Δα59SBIt-1 + α60SBIt-n + Δα61NTt-1 + Δα62NTt-1 + Δα63MSt-1 + Δα64MSt-1

Information:
GDP = Economic Growth (%)
INF = Notes on External Debt (Million USD)
SBI = Interest Rate (%)
NT = Log Exchange Rate (rupiah / USD)
MS = Inflation (%)

4 RESULTS AND DISCUSSION

The estimation results of the VECM model are presented in table 1 below:

Table 1 VECM Estimation Results for Indonesia

Estimated Results in the Long Run		
Variable	Coefficient	Probability
GDP (-1)	1	-
INF (-1)	0.01693	4.23807
SBI (-1)	9.66E-05	0.01517
NT (-1)	-0.396755	-2.35984
MS (-1)	-0.378477	-6.66706
C	1.480236	-
Estimated Results in the Short Term		
D(GDP(-1))	0.610234	4.8515
D(INF(-1))	-8.25E-05	-1.63532
D(SBI(-1))	-7.35E-05	-0.91477
D(NT(-1))	-0.00933	-2.41203
D(MS(-1))	0.002432	0.73
C	0.000933	1.61739

The VECM Indonesia estimation results in Table 1 can be interpreted in the following equation:

GDPt = 1.000000 + 0.016930INFt-1 + 9.66E-05SBIt-1 + -0.396755NT t-1 + -0.378477MSt-1 + ε t

GDPt = 0.610234 + -8.25E-05INFt-1 + -7.35E-05SBIt-1 + -0.00933NTt-1 + 0.002432MSt-1 + ε t

Table 1 shows the VECM estimation results with the model described in the previous chapter. It is known from the VECM estimation results that the inflation variable (INF) has a significant positive effect on economic growth (GDP) in the long run, where the significance is evidenced by the t-statistic value of 4.23807> from the t-table value of 1.99254 with a coefficient value. From 0.016930. Whereas in the short term the inflation variable (INF) does not have a significant adverse effect on economic growth (GDP) which is not substantial as evidenced by the t-statistic value of -1.63532 <from the t table value of 1.99254 with a coefficient value of -8.25 E-05. The coefficient value means that if there is an increase in inflation by one unit, it will increase economic growth (GDP) by 0.016930. Furthermore, the VECM estimation results show that the interest rate variable (SBI) does not have a significant positive effect on economic growth (GDP) in the long run, where this is not significant as evidenced by the t-statistic value of 0.01517 <from the t-table value of 1.99254 with a coefficient value of 9.66E-05. Whereas in the short term the interest rate variable (SBI) has no significant adverse effect on economic growth (GDP), this is not significant as evidenced by the t-statistic value of - 0.91477 <from the t table value of 1.99254 with a coefficient value of - 7.35. E05. Furthermore, the VECM estimation results show that the exchange rate variable (NT) has a significant negative effect on economic growth (GDP) in the long run, where the significance is evidenced by the t-statistic value of -2.35984> from the t-table value 1.99254 with a coefficient value. Amounting to -0.396755. The coefficient value means that if there is an increase in the exchange rate (NT) by one unit, it will increase economic growth (GDP) by -0.396755. Whereas in the short term the exchange rate variable (NT) has a significant negative effect on economic growth (GDP), where the significance is evidenced by the t-statistic value of -2.41203> from the t-table value of 1.99254 with a coefficient value of -0.00933. The coefficient value means that if there is an increase in the exchange rate (NT) by one unit, it will increase economic growth (GDP) by -0.00933. The estimation result of the last variable, namely, the money supply variable (MS), negatively affects economic growth (GDP). In the long run. The significance is evidenced by the t-statistic value of -6.66706> from the t-table value of 1.99254 with a coefficient value of -0.378477. The coefficient value means that if there is a change in the money supply (MS), it will affect economic growth (GDP) of -0.378477.

Inflation (INF) does not affect Indonesia's economic growth (GDP). The Influence of Inflation, SBI Interest Rates and Exchange Rates on Foreign Investment and Economic Growth in Indonesia gives the same result that inflation hurts economic growth. Suppose we look at the crisis that occurred in 2008/2009, which is the effect of the global financial crisis on economic growth. The high inflation rate caused Indonesia's economy to become unstable during the year. The high increase in inflation causes people to reduce consumption, which causes the economy to become sluggish due to the slow circulation of money and goods. This slowdown also has an impact on the productive sector and economic actors. The decline in the level of sales of economic actors has resulted in employment termination due to sluggish economic conditions. This is because the high inflation rate causes economic growth to slow down.

Inflation (INF) has a positive effect on Indonesia's economic growth (GDP). This research is by the theory put forward by Keynes, where according to Keynes, when inflation rises, the public will lose interest in saving in banks and switch to investing their money in the real sector. This causes economic growth to increase. Inflation has a positive effect on economic growth. Structurally, inflation views that aggregate demand causes price increases due to a bottleneck factor, namely inhibition of increased production from the supply side.

Interest rates (IR) do not affect Indonesia's economic growth (GDP). Interest rates do not affect economic growth (GDP). The phenomenon of fluctuating interest rates is sometimes only responded to briefly by market participants and then gradually returns to its normal state. This happens because the economic growth variable tends to adjust to changes in the interest rate variable in the long run. So that these changes do not affect changes in economic growth variables. Based on the estimation results using the Vector Error Correction Model (VECM) in the short and long term, the Exchange Rate (NT) variable hurts Indonesia's economic growth (GDP).

The development of the exchange rate from year to year fluctuates. In 2009, we knew that there had been a global crisis where the crisis has affected the exchange rate movement so that the exchange rate has depreciated due to the problem. It can be seen that in the years before and after the global crisis in 2009, the position of the exchange rate was relatively stable compared to the part of the problem in 2009. Besides, it should be noted that 2012 was the beginning of the financial crisis in Europe. During this crisis, the instability of world oil prices resulted in a deficit in Indonesia's trade balance, which resulted in the depreciation of the rupiah against the US dollar.

5 CONCLUSION

The money supply in Indonesia has an impact on economic growth because an increase in the money supply has an impact on increasing inflation and ultimately suppresses investor interest in investing in Indonesia. However, the exchange rate variables and the money supply had a significant adverse effect on economic growth.

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