International Journal of Accounting and Finance in Asia Pasific (IJAFAP) **Vol. 6 No. 1, pp. 122-130, February, 2023**
P-ISSN: 2684-9763 /E-ISSN: 2655-6502
https://ejournal.aibpmjournals.com/index.php/IJAFAP

The Role of The Central Bank on Economic Growth (Study Case: Indonesia)

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ARTICLE INFORMATION

Publication information

Research article

HOW TO CITE
Wijaya, A.H.Z., Santosa, D.B., & Ismail, M. (2023). The Role of The Central Bank on Economic Growth (Study Case: Indonesia). *International Journal of Accounting & Finance in Asia Pasific, 6*(1), 122-130.

DOI:
https://doi.org/10.32535/ijafap.v6i1.2134

Received: 03 December 2022
Accepted: 13 February 2023
Published: 20 February 2023

ABSTRACT

Over the past decade, Indonesia has had a relatively low economic growth rate compared to several countries in Southeast Asia. The role of the central bank is one of the instruments that need to be considered to encourage economic growth in Indonesia. As a result, examine how the central bank influence economic growth through controlling inflation, current rate, and interest rate as a policy is the purpose of this study. Interest rates and exchange rates are shown to be significantly corelated to the economic growth in both the short- and long-term in this study using the ARDL approach. This discovered there is no significantly correlation between inflation and economic growth over the long and short terms. The analysis demonstrates the many steps the central bank has taken to promote economic growth.

Keywords: Economic Growth, Central Bank, ARDL

INRODUCTION

The central bank has a very strategic role in the economy of the country. According to Ascarya (2002), in addition to maintaining the stability of the rupiah, the Central Bank has significant role to influence economic growth, increase employment opportunities, and the balance of payments. The central bank considers macroeconomic developments as a whole to set a policy. This certainly to stimulate the country's economic activities.

The Central Bank accommodates the Inflation Targeting Framework (ITF) as its responsibility to maintain rupiah stability. Inflation targeting policy is an essential to stabilizing a country's economy. This is done to avoid unwanted volatility in output, interest rates, or exchange rates. This inflation control strategy strives to maintain price stability while fostering sustainable economic growth and boosting the value of the currency (Umaru & Zubairu, 2012). After this control policy was implemented, the inflation rate tended to be below the specified target. Although in 2013 and 2014 there were spikes, however in the following years inflation tended to be low and stable. This indicates that ITF is an effective policy in controlling inflation.

The central bank also has several other policies to maintain price and rupiah stability, namely exchange rate and interest rate policy. The exchange rate is a significant factor that affects the economy strategically. Exchange rate mobility will broadly affect various aspects of the economy, including interest rates, prices (inflation), the balance of payments, and the current account. Bank Indonesia has used a free-floating exchange rate regime since 1998. To replace the managed floating system, the central bank liberated the rupiah exchange rate against the US dollar and allowed it to vary freely. This course of action was taken to address the economic problem. The exchange rate was allowed to float freely following the market mechanism (Suhendra, 2003). It aims to reduce shocks arising from the mismatch of demand and supply in the foreign exchange market through investment.

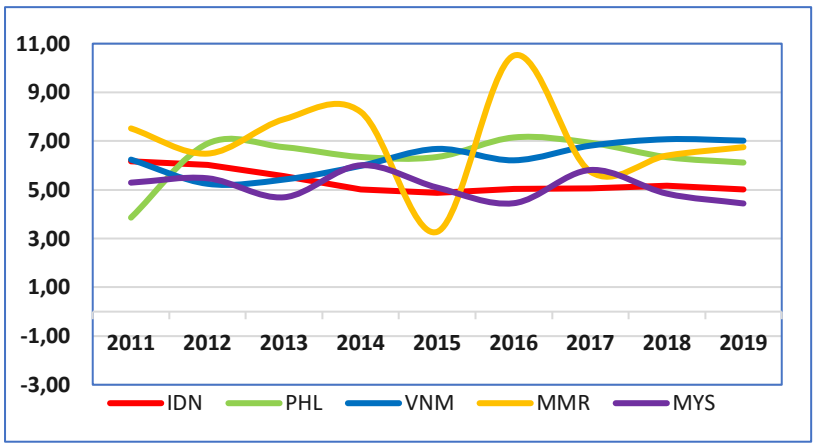
Furthermore, to enhance the spillover effect of monetary policy, Bank Indonesia launched the BI 7-day (reverse) as the policy rate on January 1, 2016. The adoption of the BI7DRR as a reference rate is part of Bank Indonesia's monetary policy reconstitution. This policy can affect the money market by affecting interest rates and stimulating investment, consumption, and saving. Consistent with Keynesian arguments, lower interest rates can stimulate aggregate demand in the short term, encouraging higher investment. Such actions may have a positive impact on the current economy (Hatmanu, Cautisanu, & Ifrim, 2020). The BI rate has become a benchmark for interest rate fluctuations in financial markets. A change in BI rates is expected to be followed by changes in deposit rates, followed by interest rate movements in lending rates.

The brief overview above shows that the Central Bank has an important role in the economy. However, macroeconomic indicators suggest otherwise. Indonesia is one of the countries in Southeast Asia that has a relatively low per capita income. Indonesia's per capita income remains far below that of Malaysia and Thailand; see Figure 1. Based on World Bank data, Indonesia's average per capita income is still at 3687.75 USD. This amount is still not enough to catch up with other countries.

The indication of this situation means that monetary policy which set by the central bank has not been able to boost Indonesia's macroeconomic performance compared to other countries in ASEAN. The current low inflation rate and exchange rate stability are in fact not enough to boost economic growth. This will lead to a decline in people's welfare. Therefore, this study aims to look at the role of the central bank in stimulating economic growth as reflected in the magnitude of the influence of exchange rates, interest rates, and inflation. By looking at the

magnitude of the influence of each variable on economic growth, it is expected that the central bank can pay more attention in controlling variables that can encourage Indonesia's economic growth.

Figure 1. Economic Growth in South East Asia



LITERATURE REVIEW

Economic growth is defined as an increase in the ability of an economy to produce goods and services (Runtunuwu & Kotib, 2021). Economic growth in a country can be interpreted as an increase in the country's capacity over a long period of time to provide economic goods and services to the community. The increase in capacity depends on technological, institutional, and ideological progress towards an existing condition (Todaro, 2006). Economic growth measures the extent to which a country's economic activity generates additional public revenue over a period of time. Economic activity is basically the process of producing a product using the factors of production. This process provides services to those who own the factors of production. According to Keynes' theory of economic growth, aggregate demand, which is determined by adding together consumer, government spending, and company, is the main factor influencing a nation's economy.. This theory assumes that consumption by one person can become income for others in the same economy. In other words, by spending money, one can contribute to the growth of others' income. The cycle then continues, and the economy keeps running as usual.

Keynes also underlined that the private sector or free market does not always result in an efficient economy since it lacks a self-balancing mechanism. Government intervention is required to boost the world economy. The Keynes line of thought contends that when an economic crisis strikes, people tend to hold their money and cut back on their spending, which stops the money cycle and paralyzes the economy. Keynesian economists defend government involvement with the goals of achieving employment and price stability. Policymakers routinely monitor external developments while pursuing fiscal and monetary policies. The only objective is home prosperity, but they must also take global trends into account. International financial flows as well as international trade flows.

The Relationship Between Exchange Rate and Economy Growth

Abolaji (2021) analyze the effect of the exchange rate on economic growth and inflation in Nigeria using an autoregressive distribution of regression lag model technique. The findings show a positive association between exchange rate movement and economic growth in Nigeria. revealed that the country's GDP had strong correlations with score exchange, government capital spending, imports, and direct foreign investment. The same result is shown by research (Hsing, 2012), which found that a stable exchange rate has a greater effect

and can increase Bulgaria's real GDP growth. whereas independence, which is more monetary, could lower growth and increase mobility. Suselo, Sihaloho, and Tarsidin (2008), on the other hand, found different results. The result implies that lower economic growth is driven by the depreciation of interest rates. The exchange rate will push investment and the size of the export volume upward and increase imports.
Hypothesis: exchange rate has a significant negative relationship to economic growth.

The Relationship Between Interest Rate And Economic Growth
There is a negative correlation between interest rates and economic growth, based to empirical research. In their analysis of the connection between interest rates and economic growth in Nigeria, Udoka and Anyingang (2012) discovered an inverse association between the two. As a result, higher interest rates will lower the nation's GDP and sluggishly increase the real sector. This implies that interest rates and economic growth are inversely related. Similar findings from Nurina (2016) demonstrate a strong inverse link between interest rates and GDP. In theory, the interest rate can be defined as the value obtained by exerting some effort from the value of saving or investing. Therefore, if interest rates rise, it will affect performance and drive individual investment decisions. Also, the following trades do not affect growth at lower levels. and vice versa.
Hypothesis: interest rate has significant negative relationship to economic growth

The Relationship Between Inflation and Economic Growth
Numerous studies have discovered a relationship between inflation and growth. This is supported by research Fersi and Boujelbène (2022) that demonstrates how high inflation hinders the growth of economic activity in communities and causes it to slow down. This eventually results in slower economic growth. Additionally, he makes it plain that the inflation rate will not significantly affect GDP growth if it is below 5.69%. However, Ibarra and Trupkin (2016) discovered that when inflation is below a certain level, it has little impact on long-term growth.
Hypothesis: inflation has negative effect on economic growth

RESEARCH METHODS

Types Data Sources and Methods Estimate
From 1990 through 2020, the study looks at data on Indonesia's economic growth (G), exchange rate (ER), interest rate (IR), and inflation (Inf). Economic growth is the study's dependent variable, and GDP at constant (real) prices is employed in this study as a stand-in for economic growth. Exchange rates, interest rates, and inflation are the primary independent factors in this study. The GDP per capita, nominal exchange rate, lending rate, and CPI data in percentage form are used as a proxy in each variable. Data were collected from the World Bank and Bank Indonesia websites using E-Views to estimate the ARDL model.

RESULTS

Stationarity Test (Unit Root Test)
First step for time series data is to estimate stationary. The phenomena of spurious regression will be produced by data that are not stationary. Thus, the outcome demonstrates that the coefficient statistically has a strong correlation and determinant. The variables are not connected, though. (Gujarati, 2003). Application of the ARDL method does not require perfect integration of the time series data into I(0) or I(1). The results could be biased from I, hence the degree of data stationarity shouldn't be greater than I(1). As a result, before conducting the tie cointegration test on any time series data, the stationarity test should be performed. The ADF (Augmented Dickey Fuller) Unit Root Test is being used during this learning period.

Table 1 displays the outcomes of the stationarity test. We can use the ARDL model because, according to the results above, the underlying variables in this hospitalization research are examined at levels I(0) and I(1).

Table 1. Stationarity Test

Variable	Probability	Results
Economic Growth	0.0035	Stationary at I(0)
Exchange Rate	0.0000	Stationary at I(1)
Inflation	0.0020	Stationary at I(0)
Interest Rate	0.0000	Stationary at I(1)

Cointegration Test (ARDL- Buonds Test)

The Bound Cointegration Test was used to examine whether there was a long-term relationship between these variables. Determination level trust cointegration seen based on critical value bounds Pasaran et.al (2001). There are two scores limit critical asymptotic for test cointegration I (d) where (0< d< 1). Limit value lowest (lower bound) assumes regressor integrated on I (0) while score limit high (upper bound) assumed regressor integrity I(1). If F-Statistic value is at the limit down, then concluded that there is no cointegration. If f-statistic value is on score limit above, then it means occur the cointegration. Whereas if f- statistic is between limit top and limit lower so result be biased.

This thing supported when score more F stats big from limit above and will be rejected when score more F stats big from limit top. No result convincing when F- statistics be in between limit up and down. In Table 2, the Bound cointegration test produces F-Statistical value of 6.63 which is more big from limit top on level 5 percent significance. This result reject hypothesis zero and by empirical show that there is relationship period long between inflation, value exchange, and interest rate to economic growth.

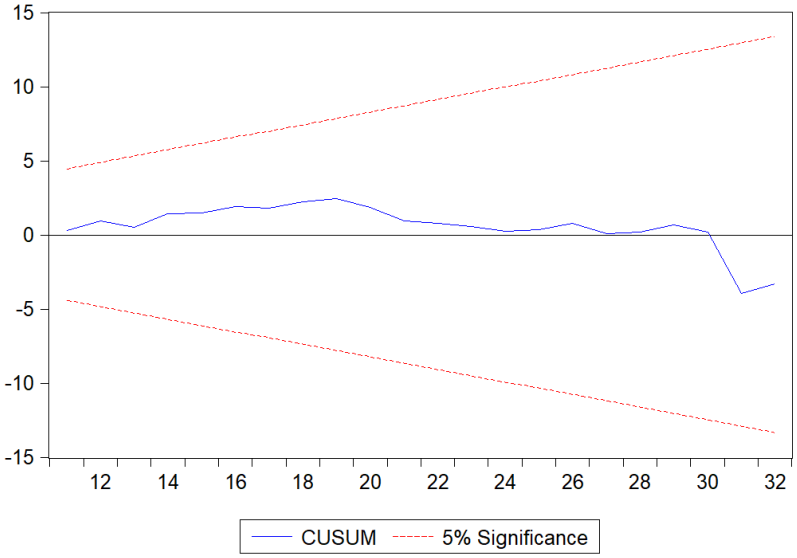
Table 2. Bound Cointegration Test

F-Bounds Test		Null Hypothesis: No level relationship		
Test Statistics	Value	Sig.	I(0)	I(1)
F-statistics	6.639331	10%	2.72	3.77
		5%	3.23	4.35
		2.5%	3.69	4.89
		1%	4.29	5.61

Stability Test

Parameter stability test performed as a step final for ensure that there is no error in specification form functionality caused by the volatility of the data series time. Test amount cumulative (CUSUM) is used for verify the stability of the ARDL model. As shown in Figure 5, it appears that the CUSUM plots are between the limit critical with level 5 percent significance, which confirms parameter stability in the ARDL model.

Figure 2. Cumulative Plots of CUSUM



ARDL Model Estimation Results (Dependent Variable: Economic Growth)

After looking the cointegration among variables, the next step would be to estimate long term and short-run in this model.

Meanwhile, in the correction variable (Cointeq) marked as negative with coefficient -0.96 and significant at a = 5%. It means ARDL estimation is valid and shows the existence of cointegration between the dependent variable and the independent variable. The results of the model selection using AIC value produced ARDL model (2,2,0,0) as the best model with the smallest Akaike Criterion value of 3.90. The length of indolence could be explained, where: Variable of Economic Growth in the first order number 2 showed the inaction length of 2. Variable of Exchange rate in the second order number 2 showed the inaction length of 2. Variable of interest rate deposit in the third order number 0 indicated the inaction length of 0. Variable of inflation in the fourth order with number 0 indicated the inaction length of 0

Table 3. The Estimation Results of ARDL Model (Dependent Variable: Economic Growth)

ARDL Short-Run				
ARDL (2,2,0,0) Selected based on AIC				
Variable Bound : Economic Growth				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DG_{t-1}	0.301278	0.126138	2.388489	0.0259
DER	-0.001260	0.000378	-3.332927	0.0030
DER_{t-1}	0.001050	0.000412	2.550616	0.0182
IR	-0.512248	0.187712	-2.728911	0.0123
$DsInf$	-0.077200	0.081811	-0.943628	0.3556
CointEq $t-1$	-0.965855	0.140812	-6.859170	0.0000
ARDL Long-Run				
ARDL (2,2,0,0) Selected based on AIC				
Variable Bound : Economic Growth				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER	-0.000744	0.000146	-5.086182	0.0000
IR	-0.530357	0.164862	-3.216983	0.0040
INF	-0.079929	0.087222	-0.916380	0.3694
C	20.287923	3.239179	6.263292	0.0000

According to Table 3, exchange rate has a negative impact on economic growth. Every 1% increase in the exchange rate can reduce economic growth to 0.0007%. In the short term, the impact is even greater if for every 1% increase in the exchange rate there is a 0.001% decrease in economic growth. The probability values for floating exchange rates are 0.00 and 0.030 for the long and short term which less than the alpha value of 0.05, meaning it is significant at the 5% level. This leads us to the conclusion that the exchange rate significantly hinders economic growth.

The coefficient value of 0.51 for the interest rate variable means that there is a negative relationship between the interest rate variable and the economic growth rate. The coefficient value for the regression on the inflation variable is negative at 0.07, implying a negative relationship between inflation and economic growth, but an increase in inflation could reduce economic growth by 0.07%. However, the probability value of the inflation variable exceeds the limit value. This means that inflation hasn't had a significant impact on Indonesia's economic growth.

DISSCUSSION

Effect of Exchange Rate on Economics Growth

The findings indicated that the exchange rate had a negative effect on economic growth. This condition could occur if the exchange rate weakened, increasing the price of imported goods and hindering import fulfillment. In addition, the drop in quality and quantity of production due to soaring import prices will have an impact on GDP. On the contrary, a strong exchange rate is seen as a sign of economic strength. Stable exchange rates are also a good indicator for investors in embedded capital, often with strong exchange rates (Muslim, 2016). Two major channels have been identified for the impact of exchange rates on economic growth (Hatmanu, Cautisanu & Ifrim, 2020) international trade and investment. Where international trade has a positive impact on economic growth, exchange rates play an important role in trade flows. His UNCTAD study in 2013 reported that exchange rate mismatches have a significant impact on international trade. This is because exchange rate mismatches are the cause of trade diversion, accounting for about 1% of global trade. This finding indicates that the exchange rate has a negative impact on economic growth. Based on the short-run estimation results, we find that the current exchange rate will increase economic growth in the next period. Any devaluation or decline in the exchange rate will increase the trade deficit because the domestic currency makes import and export demand inelastic and price fluctuations have a greater impact on the value of the trade balance.

However, in the first lag the exchange rate is positively related to economic growth. The exchange rate is able to boost economic growth in the following period. This can be explained by the J-curve phenomenon of the trade balance. If there is an increase or decrease, the domestic currency will cause inelastic import and export demand, increasing the impact of price fluctuations on the value of the trade balance, thus increasing the trade deficit. This situation is temporary as the adjustment of the trade balance will not occur in the near future. Similar to the concept of elasticity, demand is inelastic in the short term, which is similar to the idea of elasticity, because it is challenging for consumers to alter their routines in the near term in reaction to price fluctuations.

Effect of Interest Rate on Economic Growth

Based on results ARDL estimates in table 3 shows that variable interest rate has negative Based on results of ARDL estimates in table 3 shows that the variable of interest rate has negative effect on economic growth. Therefore, we could conclude that the variable of interest rate has significant effect to economic growth. Interest rate could influence real sectors through the mechanism of short-term interest rate transmitted in medium long interest through

the mechanism of balancing on the supply and demand in the money market. Source of funding for private investment is banking and capital markets, therefore banking is required to have good performance in order to push investment increase and economic growth. The dynamics of investment can influence high and low economic growth. Basically, investment affected by returns on capital and interest rate, investors will embed capital if the level of capital return is bigger than the level of interest rate. High level of interest rate will not make investment looks profitable anymore, high interest rate will cause some of the capital used for profit to reduce the amount of capital invested, if investment expenditure is reduced then GDP tends to experience decline. Therefore, Banking is expected to be able to give interest rate conducive loan for investment Externally, the existence of stable exchange rates provides certainty, which in turn can boost economic growth (Astuti, 2014).

Effect Inflation on Economic Growth

Based on the ARDL regression results in Tables 1 and 2, the inflation variable is shown to be negatively related to growth, but not significantly. Inflation can also be said to have no effect on economic growth. This means that inflation, called the money sector, cannot affect the real sector in the same way as real GDP. This can be explained by a classic theory called the classical dichotomy. According to the classical dichotomy, changes in the real sector cannot affect real values such as output, employment opportunities, real interest rates, and real GDP. In this case, according to the research framework, the movement of inflation affects interest rates, which in turn influences people's consumption and investment decisions. Therefore, the figures from this study show that inflation in Indonesia does not affect public investment and consumption, so high and low growth are immune to inflation.

Ekinci, Tuzun, and Ceylan (2021) was reviewing a study on the impact of inflation on economic growth. In summary, several recent studies show that the relationship between economic growth and price stability (inflation) is nonlinear and has a threshold effect. The relationship is generally positive or insignificant when inflation is below the threshold, but the effect of inflation on growth is typically negative and significant when inflation is above the threshold. is considered. Above a certain level, inflation has no effect on economic growth. High inflation makes domestic economies less competitive. Prices for domestic goods tend to be higher than abroad, so there is a higher propensity for imports. On the other hand, exports tend to decline as higher domestic prices impede production, and economic opening has no effect on economic growth if inflation exceeds a certain threshold.

CONCLUSIONS

The study analyzes how exchange rates, interest rates and inflation – variables under the control of central banks – affect economic growth. The results show that exchange rates and interest rates have a strong negative impact on economic growth in both the short and long term. Inflation variables, on the other hand, do not have much impact on economic growth. This shows that the role of central banks in stabilizing exchange rates and setting interest rates can affect economic growth. On the other hand, the central bank's role in controlling inflation still fails to have a significant impact on economic growth. In order to realize accelerated economic growth in Indonesia, the government needs to create a favorable investment climate. One way to encourage good investment is to set low interest rates, control the exchange rate to maintain a baseline value, and maintain the exchange rate through market mechanisms. In addition, further research on inflation thresholds should be conducted to determine inflation expectations.

ACKNOWLEDGEMENT
N/A

DECLARATION OF CONFLICTING INTERESTS
The authors declared no potential conflicts of interest.

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