

Impact of Macro Economic on Stock Return at BUMN Banking Period 2015-2022

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Abstract. The banking sector is one of the drivers of country's economic growth, therefore the Indonesia Government always encourage and boosts the development of the banking sector, especially state-owned banks. To attract investment in the banking sector, the Indonesian government issued appropriate policies such as interest rate, maintaining inflation stability, and maintaining the exchange rate. This research aims to determine effect of inflation, exchange rate, and interest rate on stock return either partially and simultaneously. This sampling technique used in this research is purposive sampling with several criteria. While the analytical method used in this research using data panel regression. The results of this research inflation, exchange rate, and interest rate simultaneously and partially effect on stock return.

1. Introduction

At the end of 2019 world wide was beaten by pandemic Covid-19, the country's economy is almost collapsing. In order to recovery from pandemic, banking sector is encouraged to immediately rise. The banking sector is one of the drivers of economic growth in Indonesia. The main function of Indonesian banking is to collect and distribute public funds and aims to support the implementation of national development in the context of increasing the distribution of development and its results, economic growth and national stability, towards increasing the standard of living of the people at large. During the economic recovery period, a number of sectors began to revive and their performance increased. A number of State-Owned Enterprises (BUMN) in the financial sector, for example, have managed to record profit growth during the 2020-2021 period PT Bank Rakyat Indonesia Tbk occupied the highest profits for state-owned banks. This is a signal for investor to buy stocks on banking sector, according to [1] profitability affect the company's value, profitability is the ratio of management effectiveness based on returns generated from sales and investment. The higher profitability generated by the company, the higher it will be rate of return.

There are several factor can affect rate of return or we called stock return, such as inflation, interest rate and exchange rate. According to [5] stated that when inflation raise then stock return will raise too. Not only inflation, but also exchange rate affect on stock return, according to [8] research show that exchange rate closely related to macroeconomics that can have an impact on company existence. It the exchange rate Rupiah weakens, investor tend to using banking institutions through saving in Dollar. Meanwhile, according to [4] stated that increasing interest rate will increase the burden interest and the company cost of capital, which will ultimately have an impact on the decline stock return obtained by investors because stock prices in the capital market weakened. Stock return in Indonesia also affected by interest rate. According to [7] on their research shown that higher interest

rate will make lower stock return, this research reciprocal with [6] high interest will lead to stock return decreased because investor prefer to keep their money in banking institutions. Otherwise [5] on their research didn't find that interest rate will affect stock return at farm sector in Indonesia. Difference in previous study was object studied and time of research.

This research aims to determine the effect of inflation, interest rate, and exchange rates on stock return. Inflation, interest rate, and exchange rates have a major impact on increasing or decreasing stock return. For this reason, the purpose of this research is to provide an overview that how inflation, interest rate and exchange rates on return stock. This research using data panel regression to calculate impact of inflation, interest rate and exchange rate on stock return in BUMN Banking Period 2015-2022.

2. Method

2.1. Literatur Review

Inflation

Inflation is an incident that describes the situations and conditions in which stock prices have increased and the value of the currency has weakened [10]. To calculate inflation in this research use formula proposed [10] which is:

$$Inf_n = \frac{IHK_n - IHK_{n-1}}{IHK_{n-1}} \times 100\%$$

Interest Rates

Interest rate is price of use of investment funds (loanable funds) [11]. According to [12] to calculate interest rate using BI Rate.

2.1.3. Exchange Rates

The currency exchange rate between the two countries is the price of the currency used by the country residence to exchange trade with each other [13].

2.1.4. Stock Return

Return is a factor that can motivate investors to invest as well as a reward for an investor's courage in facing risks on an investment that will be made [14].

2.2. Methodology

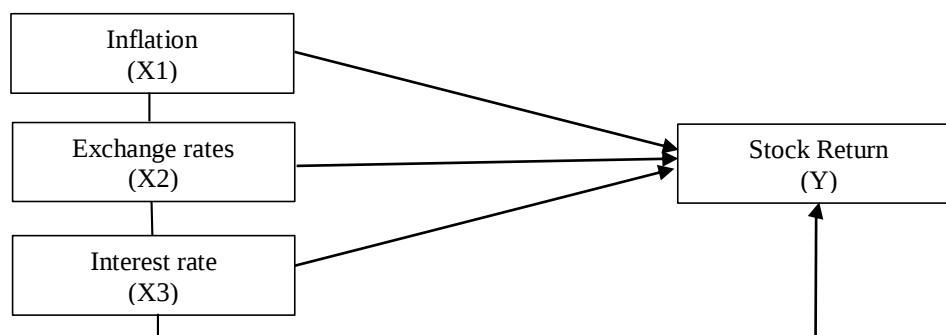
The method used in this research is panel regression analysis method and using descriptive statistical analysis. The population used is various banking sector listing on IDX period 2017-2022. Data used in this research is data panel. Sampling technique used in this research is purposive sampling with several criteria, such as: 1) Having complete financial report in period 2015-2022, 2) State-Owned Banking. So number of samples used in this research was 4 (four) emiten among others Bank BNI, Bank Mandiri, Bank BTN, and Bank BRI.

2.3. Theoretical Framework

According research result from Kurniadi et.al [10], Putri, et.al [6] and Nurhidayati and Prasetya [7] show that inflation affect on return stock.

Exchange rates affect on return stock according research result from Andes, et.al [4], Saputri, et.al [5], Nurhidayati and Prasetya [7].

Interest rates affect on return stock according research result from Nurhidayati and Prasetya [7] and Saputri, et.al. [5].



3. Results and Discussion

3.1. Results

In this research using analysis regression data panel and EVIEWS 10. To determine type of panel data model, there are several steps that can be done using *chow test*, *hausman test*, and *lagrange multiplier test*.

Chow Test

Selection for Common Effect or Fixed Effect model uses the following criteria.

- $H_0 = p\text{-value} > \alpha$ (5%), H_1 rejected, Common Effect Model
- $H_1 = p\text{-value} < \alpha$ (5%), H_0 rejected, Fixed Effect Model

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.097195	(3,24)	0.9608
Cross-section Chi-square	0.386435	3	0.9430

Based on *Chow Test*, prob. Value is 0.9608 for cross-section F, which means less than 0,05 so Common Effect Model is better than Fixed Effect Model.

3.1.2 *Lagrange Multiplier Test*

Selection for Common Effect or Random Effect model uses the following criteria.

- $H_0 = p\text{-value} > \alpha$ (5%), H_1 rejected, Common Effect Model
- $H_1 = p\text{-value} < \alpha$ (5%), H_0 rejected, Random Effect Model

Lagrange multiplier (LM) test for panel data

Date: 02/23/23 Time: 11:02

Sample: 2015 2022

Total panel observations: 32

Probability in ()

Null (no rand. effect)	Cross-section	Period	Both
Alternative	One-sided	One-sided	

Breusch-Pagan	1.867822 (0.1717)	0.014564 (0.9039)	1.882386 (0.1701)
Honda	-1.366683 (0.9141)	0.120683 (0.4520)	-0.881055 (0.8109)
King-Wu	-1.366683 (0.9141)	0.120683 (0.4520)	-1.077348 (0.8593)
GHM	-- --	-- --	0.014564 (0.7002)

Based on Lagrange Multiplier test, prob. Value is 0.1701 which means more than 0,05 so Common Effect Model is better than Random Effect Model.

As result of EVIEWS 10 was selected Common Effect Model to analyse regression data panel.

3.1.3 Partially Test

Dependent Variable: Y
Method: Panel Least Squares
Date: 02/23/23 Time: 12:15
Sample: 2015 2022
Periods included: 8
Cross-sections included: 4
Total panel (balanced) observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.601874	0.911287	5.049862	0.0000
X1	30.20944	4.614063	6.547252	0.0000
X2	-16.73470	3.427211	-4.882893	0.0000
X3	-0.000323	6.68E-05	-4.839478	0.0000
R-squared	0.631499	Mean dependent var		0.125666
Adjusted R-squared	0.592017	S.D. dependent var		0.318056
S.E. of regression	0.203154	Akaike info criterion		-0.233240
Sum squared resid	1.155599	Schwarz criterion		-0.050023
Log likelihood	7.731843	Hannan-Quinn criter.		-0.172509
F-statistic	15.99451	Durbin-Watson stat		1.954812
Prob(F-statistic)	0.000003			

$$y = 4,601 + 30,20944 X_1 - 16,73470 X_2 - 0,000323 X_3 + \varepsilon \dots \dots (1)$$

- Based on panel data regression analysis obtained prob. X_1 is $0,0000 < 0,05$, it can be concluded H_1 accepted so that Inflation variabel has positive effect on stock return.
- Based on panel data regression analysis obtained prob. X_2 is $0,0000 < 0,05$, it can be concluded H_1 accepted so that BI Rates variabel has negative effect on stock return.
- Based on data regression analysis obtained prob X_3 is $0,0000 < 0,05$, it can be concluded H_1 accepted so that Exchange Rates variabel has negative effect on stock return.

3.1.4 Simultaneous Test

As seen on table, Prob F-Statistic is $0,000 < 0,05$, it can be concluded are Inflation, BI Rates, and Exchange Rates can be affect Return on Shares at BUMN Banking Period 2015-2022. Result show that Adjusted R-Squared is 0,592017 which mean stock return are influenced 59,20% by inflation, exchange rate and interest rate.

3.2 Discussion

Research results show that inflation has impact on stock return at BUMN Banking, this result of this research in line with Kewal [1], Saputri, et.al [5], and Nurhidayati and Prasetya [7]. (2018). But different its with Andes, et.al [4] and Kurniadi et.al [9], they stated that inflation rates was below 10% from that point of view investor are considered fair and stable, and not determining factor or explanation of changes stock return, so that investor pay more attention to how the company produces high profit in order to generate high return for investors. Interest Rates and Exchange Rates have a significant effect on Stock Return at BUMN Bank Periode 2015-2022, this result supported by research Saputri, et.al [5], Kirui, et.al [3], Nurhidayati and Prasetya [7]. Inflation will be in line with stock return received by investor, according to research result show that inflation has a positive significant effect on stock return. Otherwise exchange rate and interest rate are inversely proportional to stock returns received by investor. Research result show that exchange rate and interest rate have a negative significant effect on stock return.

4. Conclusion

Inflation will increase the company's income and costs. If the cost increases production is higher than the price increase that can be enjoyed by the company, then company profitability will decrease. If the profit earned by the company is small, it will cause investors to be reluctant to invest in the company, so the price stocks fall which in turn also affects the stock returns obtained investors. It concluded that higher value of inflation will make stock return raise as well. So Indonesian Government should maintain value of inflation because increase inflation then stock return or stock price will increase as well. Indonesia Government raises exchange rates and interest rate, stock return or stock price will fell sharply.

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