

THE EFFECT OF INFLATION, EXCHANGE RATES, GDP AND BI RATE ON THE SHARE PRICES OF STATE-OWNED BANKS

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Abstract – Banking is an important sector in a country's economy, because it is a bridge that finances the real sector. Banking stocks are one of the stocks that are in great demand by investors. In investing funds, Company performance information is very important. External factors such as macroeconomics must be considered such as inflation, exchange rates, GDP and the BI Rate, because they can influence investment decisions. This study aims to find empirical evidence and determine the magnitude of the influence of the inflation rate, exchange rate, GDP and the BI Rate on share prices of state-owned banks either simultaneously or partially. The data used in this study is secondary data in the form of financial reports on the Indonesia Stock Exchange for the 2018-2023 period. The samples used in this study were 4 state-owned banks. Data analysis using multiple regression, with quantitative methods. Overall, the influence of the independent variables on the share price of state-owned banks has a positive and significant effect. Based on the R Square value of the BUMN Bank share price variable, it can be explained by the variables Inflation, exchange rate, Gross Domestic Product and BI Rate of 60.3% while the remaining 39.7% is influenced by other variables outside of this lesson. Simultaneously the variables of inflation, exchange rates, Gross Domestic Product and the BI Rate affect the share prices of state-owned banks.

Keywords: macroeconomics, stock prices, state-owned banks

I. INTRODUCTION

Indonesia experienced a contraction in economic development in 2020 of -2.07 percent. This resulted in the Indonesian economy in 2020 experiencing deflation or an extreme decline due to the unstable economic development in Indonesia. The changes that occurred were influenced by the Covid-19 pandemic. The Indonesian government issued various policies to reduce the chain of transmission of the Covid-19 pandemic but these policies and the pandemic have caused losses to all sectors of the Indonesian economy and society. These events caused the rate of inflation, exchange rate, GDP and BI interest rates to fall successively by 11.32 percent, Rp. 13,480, -2.07 percent and 3.50 percent. Indonesia's economic development will continue in 2023 with a stable trend of increasing in all sectors. Evidenced by the GDP figures which increased to 5.93 and Rp. 16,448.84 followed by a BI interest rate of 6.00 percent. Meanwhile, the inflation rate rose sharply to 5.95 percent. But still under control and as expected. Some of the external factors that have been described influence each other and ultimately want to influence the stock prices on the Indonesia Stock Exchange. Therefore the variables used in this study are several macroeconomic factors, namely inflation, exchange rates, GDP and the BI Rate because these four variables are considered to greatly influence the state of the economy and are closely related to stock prices.

This research consists of four independent variables and one dependent variable. Inflation, exchange rate, GDP and BI Rate as independent variables while the stock prices of state-owned banks as the dependent variable. Previous

research that has the effect of inflation, exchange rates, GDP and the BI Rate on share prices of state-owned banks is research conducted by Arief Kurniawan and Tri Yuniarti (2019), Ni Made Ayu Dwijayanti (2021), Rutinaias Haholongan and Apry Linda Diana (2021), Esli Silalahi and Rido Sihombing (2021), Yayan Nasikin and Indah Yuliana (2022).

II. METHODS

BI Interest Rate

BI Interest Rate is an attraction for investors to place investments in the form of deposits and Bank Indonesia Certificates, so that investment in the form of shares will be competitive (Maurina, 2014). Rising interest rates will affect issuers in paying interest expenses, so that profits will be cut and will suppress stock prices on the stock exchange.

Inflation

The increase in unemployment, weakening industrial competitiveness, decreasing purchasing power and reduced investment interest are influenced by inflation. Inflation according to its scope is divided into two, closed inflation is if price increases only occur in one or two certain goods and (open inflation) is if price increases occur in all goods (Verlina, 2019).

Exchange rate

The instability of the rupiah exchange rate against the US dollar can reduce the level of foreign investor confidence in the Indonesian economic sector and can have a negative impact on stock interaction activities in the capital market (Yuniarti and Litriani, 2017).

Gross Domestic Product (GDP)

Gross Domestic Product (GDP) as the value of goods and services in a country produced by the factors of production belonging to the citizens of that country (Sukirno, 2013). One important indicator to determine the state of the economy in a country in a certain period is the Gross Domestic Product (GDP) statistic. The better

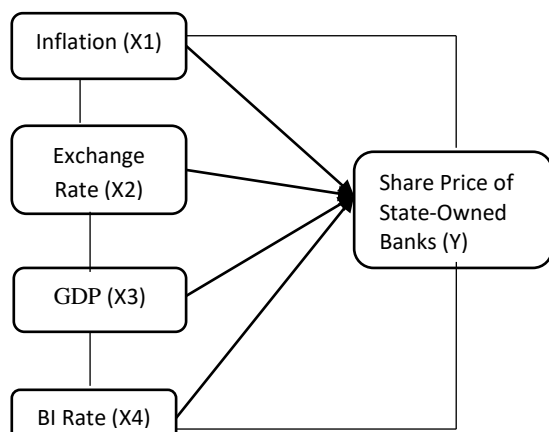
the GDP value, the better the economy of a country.

Share Price

The stock price index is an index that compares stock prices and to see whether the price of a stock decreases or increases when compared to certain times (Verlina, 2019). The price is formed based on the supply and demand of the company's shares which in this case are traded on the Indonesia Stock Exchange.

Previous research:

- Sanyota, Antasari and M Akbar (2019) partially only inflation has an insignificant effect and simultaneously exchange rate variables, inflation and BI Rate have a significant effect on stock prices.
- D. Budi P, Damayanti and M. Iqbal H (2021) Partially and simultaneously the three independent variables have a significant effect on stock prices
- D. Yuniarti and E. Litriani (2017) partially and simultaneously inflation measured using the number of stock prices in the consumer goods industry sector has a significant influence on stock prices.
- T Wisnu H and Purwohandoko (2020) partially inflation and the rupiah exchange rate do not have a significant effect and simultaneously inflation, the rupiah exchange rate and BI Rate have a significant effect on the Sri Kehati index.
- R Samsurufika A and R.A Sista Paramita (2020) partially BI Rate and inflation do not have a significant effect and simultaneously BI Rate, exchange rate and inflation have a significant effect on the composite stock price index.
- N Wayan S. (2016) partially the exchange rate has no effect and simultaneously inflation, interest rates, and exchange rates have a positive effect on the movement of JCI on the Indonesia Stock Exchange.
- Z. Liliana N, M. Mangantar, and Sjendry S R Loindong (2022) partially and simultaneously the rupiah exchange rate has a significant effect on the composite stock price index.

Frame of Mind

Research Hypothesis:

The Effect of Inflation on the Share Price of State-Owned Banks

Inflation is a condition where the price of a product or good increases accompanied by a weakening of the value of the currency (Fahmi, 2012). Inflation is an increase in the price of products or goods as a whole which tends to cause a decrease in the purchasing power of money Tandelilin (2010)

Ha : The influence of inflation on the share price of state-owned banks

H0 : There is no effect of BI Rate on the share price of state-owned banks

The Effect of Exchange Rate on the Share Price of State-Owned Banks

Exchange rates or exchange rates are also known to be a comparison of prices or values in terms of exchanging goods and different currencies (Nopirin, 1995).

Ha : The influence of exchange rates on the share price of state-owned banks

H0 : The absence of inflation on the share price of state-owned banks

The effect of GDP on the share price of state-owned banks

To measure the prevailing money value of economic output is called nominal GDP, while real GDP measures output valued at constant prices. The GDP deflator measures the price of output relative to its price in the base year (Mankiw, 2003).

Ha : The influence of GDP on the share price of state-owned banks

H0 : The absence of GDP influence on the share price of state-owned banks

The effect of BI Rate on the share price of state-owned banks

Rising interest rates will trigger people to place their funds in banking products so that the amount of money circulating in the capital market will decrease, besides that it can reduce inflation (Sukirno, 2013).

Ha : The influence of the BI Rate on the share price of state-owned banks.

H0 : There is no effect of BI Rate on the share price of state-owned banks.

Research Design

This study used a quantitative approach. Quantitative research is research that has a special nature, static, detailed and has a flow that has been planned from the beginning and cannot be changed again (Sugiyono, 2017). The object of this study is the stock price in the consumer good sector listed on the Indonesia Stock Exchange with an observation period of 6 years, namely the period 2018 - 2023. The data and information used for this study were obtained from the Indonesian Stock Exchange (IDX) (www.idx.co.id).

Population and Sample

Techniques The population to be observed in this study is state-owned banks listed on the Indonesia Stock Exchange from 2018 - 2023. The selection of samples to be carried out in this study is by purposive sampling technique. Sugiyono (2017) explained that purposive sampling technique is a sampling technique based on certain considerations. Then each subject studied is taken from the population based on certain considerations. Here are the sampling criteria in this study:

- State-owned bank listed on the Indonesia Stock Exchange from 2018-2023.
- State-owned banks that publish financial statements and price information during the research time consecutively, starting from 2018 – 2023
- State-owned banks that have stock price

information for the period 2018 - 2023.

Banks used as samples in this study are:

- PT. Bank Mandiri (Persero) Tbk (BMRI)
- PT. Bank Negara Indonesia (Persero) Tbk (BBNI)
- PT. Bank Rakyat Indonesia (Persero) Tbk (BBRI)
- PT. Bank Tabungan Negara (Persero) Tbk (BBTN)

Data Types and Sources

The type and source of data used in this study is to use secondary data, namely from financial statements and price information that have been published during 2018 - 2023. Data collection in the form of information on financial statements, stock prices and related macroeconomic variables. The recording to be carried out can be obtained from the website (www.investing.com), (www.rti.co.id), (www.bi.go.id), annual report on the official website of the Indonesia Stock Exchange (www.idx.co.id) and the website of the Central Statistics Agency (www.bps.go.id).

Data Analysis

The analysis to be carried out to find out how much influence the dependent variable has on the independent variable is to carry out statistical tests. The analytical method to be used in this study is multiple regression analysis. Multiple regression analysis is an analytical method used to determine the effect of inflation, exchange rates, GDP and SBI on share prices of state-owned banks in 2018-2023 through the assumption test of the regression model.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Information:

Y = Stock price

α = Constant

β = Coefficient of each independent variable

ε = Error rate

X1= Inflation

X2= Exchange Rate

X3 = GDP

X4 = SBI

Partial Significance Test (t-Test)

To find out how far the influence of an independent variable individually in explaining the dependent variable (Ghozali, 2011). The comparison will be made based on the comparison by looking at the significance ($\alpha = 0.05$) based on the following conditions:

- If the significance value < 0.05 then H_0 is rejected and H_a is accepted. Because a significant influence of the independent variable was found.
- If the significance value > 0.05 then H_0 is accepted and H_a is rejected. Because no significant influence of the independent variable was found.

Simultaneous Significance Test (F Test)

The F test is used to test the degree of influence of the independent variable together on the dependent variable (Ghozali, 2011). In test F the conclusion used is to look at the significance ($\alpha = 0.05$) with the following conditions:

- If the significance value > 0.05 then H_0 is accepted and H_a is rejected.
- If the significance value < 0.05 then H_0 is rejected and H_a is accepted.

If F counts $>$ from F of the table then H_0 is rejected and H_a is accepted. Because a significant influence of the independent variable was found.

If F counts $<$ from F of the table then H_0 is accepted and H_a is rejected. Because no significant influence of the independent variable was found.

Coefficient of Determination Test (Adjusted R^2)

To find out how much the dependent variable can be explained by the independent variable, while the rest is influenced by other factors outside the variable. The values of the coefficient of determination are 0 (zero) and 1 (one). A small R^2 value indicates that the ability of independent variables to explain dependent variable variation is very limited. A value close to 1 (one) means that the independent variables

show almost all the information needed to predict the dependent variable (Ghozali, 2011).

III. RESULTS AND DISCUSSION

The descriptive statistics

The descriptive statistics used in this study use independent variables, namely inflation, exchange rates, GDP and SBI.

Table 1. Descriptive Statistics

	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
Share Price	66	2419.00	5405.75	4238.1439	787.09487
Inflation	66	1.32	5.95	2.9683	1.23860
Exchange Rate	66	13480.00	16448.84	14579.7977	535.11167
PDB	66	-2.07	5.93	3.5620	2.53815
SBI	66	3.50	6.00	4.6136	.95493
Valid N (listwise)	66				

Source: Data processed 2023

From the table above it can be seen:

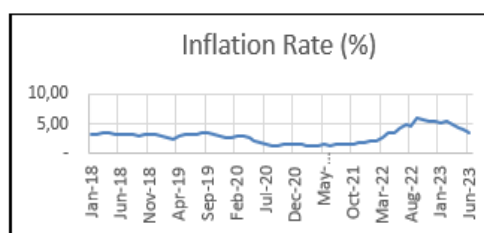
Inflation was highest 5.95% in September 2022, lowest 1.32% in August 2020, average 2.9683% and standard deviation 1.23860%. The highest exchange rate was Rp.16,448.84 March 2020, the lowest was Rp.13,480 January 2018, the average was Rp.14,579,7977 and the standard deviation was 535,11167. GDP highest -2.07% October – December 2020, low 5.93% March 2023, average 3.5620%, standard deviation 2.53815%. SBI was 6.00% high November 2018 – June 2019, low 3.50% February – July 2022, average 4.6136%, standard deviation 0.95493%.

Descriptive Statistics of Inflation

The highest inflation was 5.95% in September 2022, the lowest of 1.32% in August 2020, indicating the inconsistent inflation growth rate that occurred in 2018-2023. High inflation is caused by rising prices of most expenditure sectors such as consumer products in the form of food products, beverages, cigarettes, and

tobacco, then the health sector, and the education sector (Central Statistics Agency). Meanwhile, inflation was low in August 2020 due to falling prices in the consumption and transportation sectors due to the Covid-19 pandemic that began to occur in Indonesia. Here's a graph of inflation from 2018-2023:

Graph 1. Inflation in 2018-2023

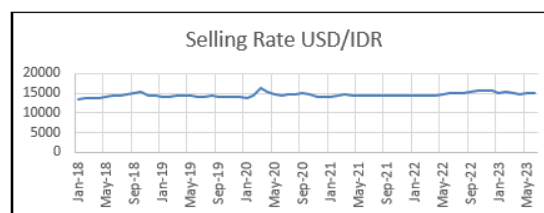


Source: Data processed

Exchange Rate Descriptive Statistics

The highest exchange rate of IDR 16,448.84 in March 2020, the lowest of 13,480 occurred in January 2018, due to the discovery of the first case of the SARS Cov-2 virus in Depok (CNBC Indonesia, 2020). This made foreign investors aggressively withdraw investment funds invested in Indonesia, and the choked import export gate which resulted in the USD exchange rate strengthening against the rupiah. Here is a chart of exchange rates from 2018-2023:

Graph 2. Exchange Rate 2018-2023



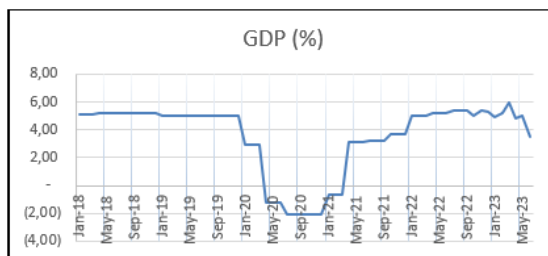
Source: Data processed 2023

GDP Descriptive Statistics

GDP was highest -2.07% in October – December 2020, lowest 5.93% in March 2023. The level of GDP in this study period was stable in 2018 to early 2020 then fell due

to the pandemic. Then it gradually rose again in 2021 and stabilized in 2023. Here is a chart of GDP levels from 2018-2023:

Graph 3. GDP 2018-2023

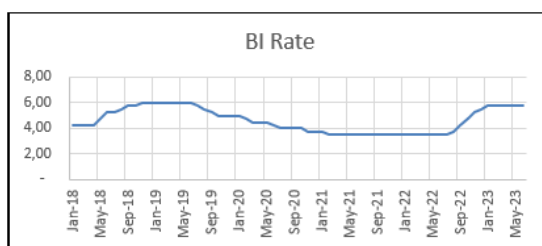


Source: Data processed 2023

BI Rate Descriptive Statistics

BI Rate was highest at 6.00% in November 2018 – June 2019, lowest at 3.50% in February – July 2022. The BI Rate movement in 2018-2023 tends to be stable and the changes that occur are not too significant. The BI Rate increased from the beginning of 2018 to the end of 2019, fell in 2020 due to the pandemic then tended to stabilize in 2021 and increase again starting in mid-2022. The financial sector has the potential to be one of the sectors that feels the positive effects of increasing the benchmark interest rate. The following is a graph of the BI Rate rate for the 2018-2023 period:

Graph 4. BI Rate 2018-2023



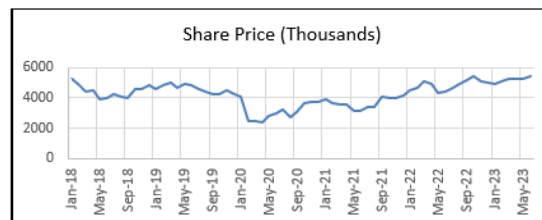
Source: Data processed 2023

Descriptive Statistics of Share Prices of State-Owned Banks

The highest share price was IDR 5,405.75 in October 2022, the lowest was IDR 2,419 in April 2020, due to the SARS Cov-2 virus case found in Depok (CNBC Indonesia, 2020), and the implementation

of Community Activity Restrictions (PPKM) which caused many stock transaction activities to decline. The following is a chart of the stock price of state-owned banks for 2018-2023:

Graph 4. Share Price Year 2018-2023



Source: Data processed 2023

Data Analysis

Multiple Regression Model

Table 2. Multiple Regression Coefficient

Model	Coefficients ^a		Standardized Coefficients Beta	t	Sig.
	Unstandardized Coefficients B	Std. Error			
1 (Constant)	7964.487	2024.025		3.935	.000
Inflation	340.004	82.156	.535	4.139	.000
Kurs	-.369	.142	-.251	-2.593	.012
PDB	105.957	34.673	.342	3.056	.003
SBI	58.600	74.231	.071	.789	.433

a. Dependent Variable: Stock price

Source: Data processed 2023

Based on the table above, the multiple regression model equation is known as follows:

$$Y = 7964,487 + 340,004 X_1 + (0.369) X_2 + 105,957 X_3 + 58,600 X_4 + \epsilon$$

- The constant value of 7964,487 indicates that if inflation, exchange rates, GDP and SBI are constant (0), then the share price of state-owned banks is estimated at 7964,487.
- The coefficient b1 with a value of 340,004 shows that strengthening inflation has a positive effect on the share price of state-owned banks of 340,004.
- The coefficient b2 with a value of (0.369) shows that the strengthening of the

exchange rate *has* a negative effect on the share price of state-owned banks by 0.369.

- The coefficient b3 with a value of 105,957 shows that the strengthening of GDP has a positive effect on the share price of state-owned banks by 105,957.
- The b4 coefficient with a value of 58,600 shows that the strengthening of SBI has a positive effect on the share price of state-owned banks by 58,600.

Partial Significance Test Analysis (t-Test)

From the table of significance values above shows that:

- The effect of inflation (X1) on the share price of state-owned banks (Y), where the value of α significance is $0.000 < 0.05$, so it can be concluded that Ha is accepted, which means that there is an influence of inflation on the share price of state-owned banks.
- The effect of the exchange rate (X2) on the share price of state-owned banks (Y), where the value of α significance of $0.012 < 0.05$, so it can be concluded that Ha is accepted, which means that there is an exchange rate influence on the share price of state-owned banks
- The effect of GDP (X3) on the share price of state-owned banks (Y), where the value of α significance is $0.003 < 0.05$, so it can be concluded that Ha is accepted, which means that there is an influence of GDP on the share price of state-owned banks
- The effect of SBI (X4) on the share price of state-owned banks (Y), where there is a α of significance of $0.433 > 0.05$, so it can be concluded that H0 is accepted, which means there is no influence of SBI on the share price of state-owned banks

Simultaneous Significance Test (F Test)

Table 3. Test F

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	25276201.730	4	6319050.432	25.710	.000 ^b
Residual	14992490.280	61	245778.529		
Total	40268692.010	65			

a. Dependent Variable: Stock price
 b. Predictors: (Constant), SBI, Kurs, PDB, Inflasi

Source: Data processed 2023

In the table above, the calculated F value is 25,710, the value of the F table is 2.5226149, showing that the value of F is calculated $>$ the F table value, it can be said that Ha is accepted, which means there is an influence of inflation, exchange rates, GDP and SBI on the share price of state-owned banks.

Coefficient of Determination

Table 4. Coefficient of Determination

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.792 ^a	.628	.603	495.76056

a. Predictors: (Constant), SBI, Kurs, PDB, Inflation

Source: Data processed 2023

From the table above, the value of the coefficient of determination is 60.3% so that it can be said that inflation, exchange rates, GDP and SBI together affect the share price of state-owned banks, while the remaining value of 39.7% is explained by other variables.

IV. CONCLUSION

Research on inflation, exchange rates, GDP and BI Rate on share prices of BUMN Banks in 2018-2023 that has been carried out, it can be concluded:

Effect of Inflation on stock prices

In the t test, a significance value of $0.000 < (\alpha = 0.05)$ was obtained, indicating that inflation has a positive and significant effect on the stock prices of state-owned banks. A positive coefficient value of 340.004 means that every 1% increase in inflation will result in an increase in the stock price of 340.004 units. In line with research from W. Sanyota Antasari and M. Akbar (2019) and T Wisnu H and Purwohandoko (2020).

Effect of exchange rates on stock prices

In the t test, a significance value of $0.012 < (\alpha = 0.05)$ was obtained, indicating that the exchange rate has a positive and significant

effect on the share price of state-owned banks. A negative coefficient value of 0.369 means that every 1% increase in seats will result in a decrease in the stock price of 0.369 units. In line with research from Antasari and Masithah (2019), Damayanti and Muhammad (2019), Hermawan and Purwohandoko (2020), and D. Budi P, Damayanti and M. Iqbal H (2021).

Effect of GDP on stock prices

In the t test, a significance value of $0.003 < (\alpha = 0.05)$ was obtained, indicating that GDP has a positive and significant effect on the share price of state-owned banks. A positive coefficient value of 105.957 means that every 1% increase in seats will result in a decrease in the stock price of 105.957 units. In line with research from Ni Wayan Sri Asih and Masithah Akbar (2016)

The effect of SBI on stock prices

In the t test, a significance value of $0.433 < (\alpha = 0.05)$ was obtained, indicating that SBI has a positive and significant effect on the share price of state-owned banks. A negative coefficient value of 58,600 means that every 1% increase in seats will result in a decrease in the stock price of 58,600 units. In line with research from Antasari and Masithah (2019), Damayanti and Muhammad (2019), and Hermawan and Purwohandoko (2020).

The effect of inflation, exchange rate, GDP and SBI on share prices of state-owned banks

The results of the F test show that the inflation, exchange rate, GDP and SBI variables are appropriate to explain the share prices of state-owned banks whose shares are listed on the Indonesia Stock Exchange in 2018-2023. The R Square value obtained explains the contribution of the independent variables, namely inflation, exchange rate, GDP and SBI inflation, exchange rate, GDP and SBI on the dependent variable, namely the share price of state-owned banks by 60.3% and with a residual value of 39.7% is influenced by other variables outside of this study.

V. ACKNOWLEDGEMENT

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