



IMPACT OF EPS, INTEREST RATE, ROE, NIM, AND INFLATION ON STOCK PRICES IN IDX

Silvi Wijaya¹; Cindy Cynthia²; Jholant Bringg Luck Amelia Br Sinaga³
Prima Indonesia University, Medan
Email: jho.amelia@gmail.com

Abstract

This study looked at how much Earnings Per Share (EPS), interest rates, Return on Equity (ROE), Net Interest Margin (NIM), and inflation had on stock prices at the same time. This type of research uses a quantitative approach because the data used is numbers and the method used is the multiple linear regression method. The banking sector's population is 45 companies, chosen using a purposive sampling technique, so the number of samples studied was 22, with a total of 66 samples collected over a three-year period. The result of Adjusted R Square is 0.750 with the intention that 75% of the independent variables (EPS, interest rate, ROE, NIM, and inflation) affect the dependent variable (stock price) while the remaining 25% is explained by other variables. According to the observation results, EPS and NIM have a positive and significant effect on stock prices, the interest rate has a negative and insignificant effect on stock prices, ROE has a negative and significant effect on stock prices, and inflation has a positive and insignificant effect on stock prices. Simultaneously, EPS, interest rates, ROE, NIM, and inflation have a significant effect on stock prices in banking companies listed on the Indonesia Stock Exchange in 2017-2019.

Keywords: Earning Per Share (EPS), Interest Rate, Return On Equity (ROE), Net Interest Margin (NIM), Inflation, Stock Price

INTRODUCTION

The development of the country's economy can be seen from the development of the capital market. In a country, it is expected that there will be high economic growth and good business conditions in order to increase share prices. However, investing in stocks also has a high risk. This is due to variations in stock prices. The capital market is expected to be an alternative funding for Indonesian companies, as well as an alternative in investing[1].

The stock price of a company reflects the value of the company, so the company must have a high level of profitability. Profitability has an important meaning for the company in maintaining its survival for the long term, because an investor or

shareholder of a business entity needs to pay attention to the stability of the company's profitability. Financial ratios used to measure a company's ability to gain profitability include Earning Per Share, Return On Equity and Net Interest Margin[2].

In the banking sector, banks are known as financial institutions whose main activities are collecting funds from the public, channeling funds to the public, and providing other services. One of the factors that affect the stock price is the company's ability to pay dividends. Financial reports are also very useful for investors in making investment decisions, such as selling, buying, or investing in stocks. With interest rates and inflation, the banking industry has piqued the





interest of investors. This is useful for attracting investors to invest their excess funds in order to get a profit, namely by saving or by buying shares offered by these banks[3].

Inflation can occur due to an increase in demand and production costs. The interest rate is used to control a country's economy. Bank Indonesia has a policy of determining the benchmark interest rate known as the BI Rate. According to Herry (2012: 196-197), the higher the EPS value, of course, the greater the profit, which causes the stock market price to rise because the demand for supply increases. The higher ROE figure gives an indication to shareholders that the return on investment is getting higher. The increasing NIM means that the bank is getting better too. A larger NIM indicates that the company is able to generate greater interest income from its productive assets, so that large interest income can also cover the company's better profitability[4].

Years	Inflation	BI				Stock price (Rp)
		Rate	EPS	ROE	NIM	
2017	3,61%	4.25%	730	15,6%	5.5%	9,900
2018	3,13%	6.00%	805	16,1%	5.3%	8,800
2019	2,72%	5.00%	825	14%	4.9%	7,850

Table I.1 Table Phenomenon

Source: Bank Indonesia (www.bi.go.id), Annual Report PT. Bank Negara Indonesia (Persero) Tbk[5].

The higher the EPS ratio value of a banking company in the form of profits obtained by investors per share they own, the higher the share price will be. From the

test results, EPS has a significant effect on stock prices[6].

EPS has a positive and insignificant effect on stock prices. EPS shows that the greater the ability of fixed assets to cover current debt does not cause an increase in stock prices, but if the more current assets are, the share price will increase[7].

The higher the interest rate, the lower the share price. From the results of the tests conducted, the interest rate has no significant effect on stock prices[8].

Interest rates rise, stock prices will fall and vice versa, if interest rates go down, stock prices will rise. From the results of the tests carried out, the interest rate does not have a significant effect on stock prices[9].

Effect of Return On Equity (ROE) on stock prices the more ROE increases, the company's value will also increase. This research is expected to provide information and be a consideration in making decisions for potential investors who want to invest. From the results of the tests performed, ROE has a significant effect on stock prices[10].

The ROE value in a company gets bigger, it will make its share price also increase. ROE is an indicator to measure the success of management in carrying out its duties, namely producing maximum capital gains for capital owners. From the results of the tests performed, ROE has a significant effect on stock prices[11]. Increase in NIM will cause a decrease in bank share prices. This is probably because a high NIM indicates that a high cost tends to have a high NIM as well.





From the results of the tests conducted, NIM has no significant effect on stock prices[12].

NIM has a positive and significant effect on stock prices. This means that the ability of banks to utilize NIM is appreciated by investors in buying shares[12].

High inflation is a scourge for capital market players because it will increase production costs, which will adversely affect prices and income. Capital market players view inflation as a risk that must be avoided. Shareholders and capital market players will prefer to sell their shares when inflation is high. From the results of tests conducted, inflation has a negative and significant effect on stock prices[13].

High inflation will harm the economy as a whole. This means that high inflation will drop the stock price. Low inflation will result in very slow economic growth, which in turn causes stock prices to move slowly as well. From the results of the tests conducted, inflation has a negative and significant effect on stock prices[14].

RESEARCH METHODS

The type of research used in this research is associative research, where the researcher aims to determine whether the independent variable affects the dependent variable in banking companies listed on the Indonesia Stock Exchange for the period 2017-2019. The data collection method used by researchers is secondary data through the official website of the Indonesia Stock Exchange, namely

www.idx.co.id[15]. The population in this study was 45 banking companies listed on the Indonesia Stock Exchange from 2017 to 2019. Purposive sampling was used in this study, and the samples in this company were:

No.	Description	Amount
1	Bank listed on the Indonesia Stock Exchange for the period 2017-2019	45
2	Banks that did not publish financial reports for the year 2017-2019 in a row	(11)
3	Banks that did not get positive net profit during 2017-2019 consecutively	(12)
Number of Samples		22
Number of Periods 2017-2019		3
Amount of observed data		66

Table 2. Sampling Criteria

No.	Variable	Operational definition	Indicator	Scale
1.	Earnings Per Share (X ₁)	The ratio of earnings per share or also known as the ratio of book value is a ratio to measure the success of management in achieving benefits for shareholders (Dr.	Earnings Per Share = $\frac{\text{Ordinary shares}}{\text{ordinary shares outstanding}}$	Ratio





	Kasmir, 2012 : 207).		
	The interest rate is the cost of the loan or the price paid for the loan (Mishkin, F.S., 2010 : 4).	Interest Rate $i = r + \pi$	Rati o
2.	Interest Rate (X ₂)		
	Return on Equity is a ratio used to measure the ability of own capital to generate profits for all shareholde rs, both common stock and preferred stock. (V. Wiratna Sujarweni, 2017 : 65).	Return on Equity $= \frac{\text{net profit after tax}}{\text{Owner's equity}}$	Rati o
3.	Return On Equity (X ₃)		
	Net Interest Margin (NIM) is a measure of the	Net Interest Margin $= \frac{\text{Net interest income}}{\text{earning assets}} \times 100$	Rati o
4.	Net Interest Margin (X ₄)		

			difference between the interest income generated by banks or other financial institution s and the amount of interest paid to their lenders, relative to the amount of interest on the earning assets. (Kasmir 2010 : 103).
			Inflation is the number of price increases over time. Meanwhil e, the inflation rate is the percentage of the price increase (Houston,
5.	Inflatio n (X ₅)	IHK _n $= \frac{\sum_{i=1}^k \frac{P_{ni} - P_{(n-1)i} Q_{0i}}{P_{(n-1)i}}}{\sum_{i=1}^k P_{0i} Q_{0i}}$	Rati o





2010 :
 228).

The price of a share at any given time will depend on the cash flows that the “average” investor is expected to receive in the future if the investor buys the stock. The greater the expected profit and the lower the risk, the higher the share price (Brigham dan Houston, 2010 : 7-8).

Table 3. Variable Operational Definition

One-Sample Kolmogorov-Smirnov Test		
Unstandardized Residual		
N	66	
Normal Parameters ^{a,b}	Mean	0E-7
	Std. Deviation	2900.62554092
	Absolute	.236
Most Extreme Differences	Positive	.236
	Negative	-.171
Kolmogorov-Smirnov Z	1.918	
Asymp. Sig. (2-tailed)	.001	
a. Test distribution is Normal.		
b. Calculated from data.		

Table 3. Kolmogorov Smirnov Normality Test Before Data Transformation

Seen from table III.1, it can be seen that the data is not normally distributed, because of the Asymp value. Sig. (2-tailed) is 0.001, which is less than 0.05.

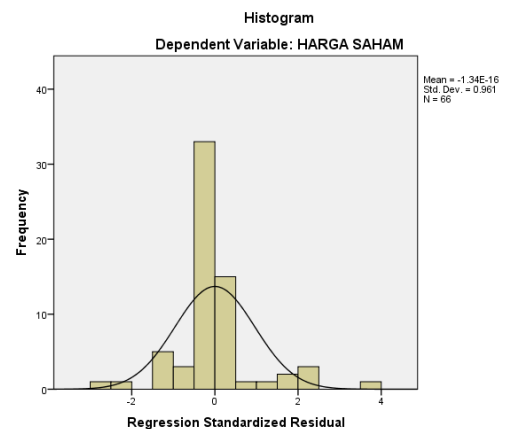


Figure 1. Histogram Graph Normality Test Before Transformation

RESULTS AND DISCUSSION



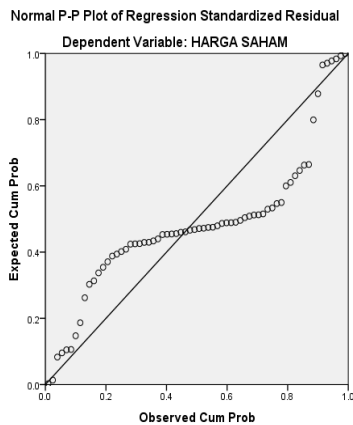


Figure 2. Plot Graph of Normality Test Before Transformation

Good data must meet the requirements of the normality assumption or be normally distributed so that the data requires transformation. The technique used for transforming the data is Natural Log (LN). Following are the results of the Normality Test after-treatment of the data:

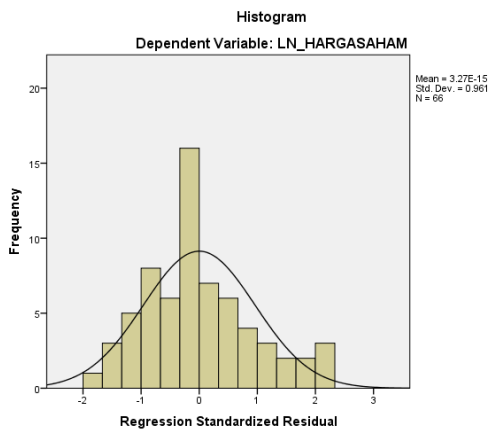


Figure 3. Histogram Graph Normality Test After Transformation

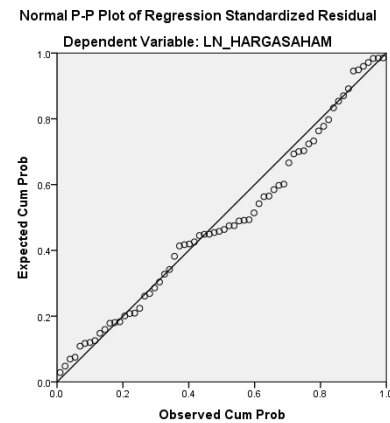


Figure 4. Plot Graph of Normality Test After Transformation

Based on the output display in Figure III.3 above, it can be seen in the histogram graph that it is shaped like a bell, and in Figure III.4 the plot graph appears to follow the points of the diagonal line so that it can be concluded that the data is normally distributed or meets the requirements of the normality assumption

One-Sample Kolmogorov-Smirnov Test		
Unstandardized Residual		
N		66
Normal Parameters ^{a,b}	Mean	.0E-7
	Std. Deviation	.74362840
	Absolute	.098
Most Extreme Differences	Positive	.098
	Negative	-.058
Kolmogorov-Smirnov Z		.797
Asymp. Sig. (2-tailed)		.548
a. Test distribution is Normal.		
b. Calculated from data.		

Table 4. Kolmogorov Smirnov Normality Test After Data Transformation

It can be seen that the Asymp. Sig. (2-tailed), namely 0.548, which value is





greater than 0.05, it can be concluded that the data is normally distributed.

Model	Coefficients ^a					Tolerance	VIF
	Unstandardized	Standardized	t	Sig.	Collinearity		
	Coefficient	Coefficients			Statistics		
	B	Beta					
(Constant)	3.761		1.840	.071			
LN_EPS	1.022	.100	1.312	0.060	.233	4.289	
LN_BIR	-.027	.773	-.021	-.070	.767	1.305	
LN_ROE	-.097	.193	-.663	5.039	.000	4.501	
LN_NIM	.094	.332	.192	2.848	.006	1.177	
LN_INFLASI	.086	1.002	.006	.086	.32	1.479	

a. Dependent Variable: LN_HARGASAHAM

Table 5. Multicollinearity Test

Based on the results of the data above, the tolerance value on all variables ≥ 0.01 , and the value of variance inflation factor (VIF) on all variables ≤ 10 , it can be concluded that the data is free from multicollinearity symptoms.

Heteroscedasticity test results using the Spearman test. If the Sig. (2-tailed) on the independent of the ABS_RES value is greater than 0.05, the Heteroscedasticity test is considered free of heteroscedasticity symptoms. Based on the data above, it can be seen that all Sig. (2-tailed) is above

0.05, so it can be stated that the data is free from heteroscedasticity symptoms.

Runs Test	
	Unstandardized Residual
Test Value ^a	-.07626
Cases < Test Value	33
Cases \geq Test Value	33
Total Cases	66
Number of Runs	40
Z	1.489
Asymp. Sig. (2-tailed)	.137

Table 6. Runs Test

The results of the autocorrelation test were carried out by using the run test. Data is considered symptom free if the value is Asymp. Sig. (2-tailed) is above 0.05. Based on these results, the Asymp value is obtained. Sig. (2-tailed) is 0.137, so it can be said that the data is free from autocorrelation symptoms.





Model	Coefficients ^a						Tolerance	VIF	
	Unstandardized		Standardized		t	Sig.			Collinearity Statistics
	B	Std. Error	Beta	Coefficients					
(Constant)	3.761	2.044			1.840	.071			
LN_EPS	1.022	.100	1.312		10.206	.000	.233	4.289	
LN_BIRATE	-.022	.0773	-.021		-.294	.770	.767	1.305	
LN_ROE	.097	.193	-.663		5.039	.000	.222	4.501	
LN_NIM	.946	.332	.192		2.848	.006	.850	1.177	
LN_INFLASI	.086	1.002	.006		.086	.932	.676	1.479	

a. Dependent Variable: LN_HARGASAHAM

Table 7. Multiple Linear Regression

From the table above, multiple linear regression equations can be drawn up as follows:

$$\text{Stock price (Y)} = 3,761 \text{ (a)} + 1,022 \text{ EPS(b1)} - 0,227 \text{ BI RATE(b2)} - 0,974 \text{ ROE(b3)} + 0,946 \text{ NIM(b4)} + 0,086 \text{ INFATION(b5)} + e$$

According to the multiple linear regression equation, the constant (a) of 3,761 means that EPS (b1), BI RATE (b2), ROE (b3), NIM (b4), and INFLATION (b5) are all equal to constant or zero, and thus the stock price (Y) is positive or will increase by 3,761. The EPS regression coefficient (b1) is 1.022, which means that for every change in one unit of the EPS financial ratio (b1), the stock price (Y) is positive or

will increase by 1.022. The BI rate regression coefficient (b2) is -0.227, which means that for every unit change in the BI rate (b2) financial ratio, the stock price (Y) is negative or decreases by -0.227. The ROE regression coefficient (b3) is -0.974, which means that for every change of one unit of ROE financial ratio (b3), the stock price (Y) is negative or will experience a decrease of -0.974. The NIM regression coefficient (b4) is 0.946, which means that for every change in one unit of the NIM financial ratio (b4), the stock price (Y) is positive or will increase by 0.946. The inflation regression coefficient (b5) is 0.086, which means that for every change in one unit of the inflation financial ratio (b5), the stock price (Y) is positive or will increase by 0.086.

Based on the data above, it can be seen that the adjusted R Square value is 0.750 or 75%. This means that the independent variable affects the dependent variable by 75%. The rest comes from other variables that are outside the model

Model	ANOVA ^a				
	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	119.543	5	23.909	39.910	.000 ^b
Residual	35.944	60	.599		
Total	155.487	65			

a. Dependent Variable: LN_HARGASAHAM
 b. Predictors: (Constant), LN_INFLASI, LN_EPS, LN_NIM, LN_BIRATE, LN_ROE

Table 8. F test

Based on the data above, it can be seen that the Sig value in the ANOVA table is 0.000 less than 0.05. The comparison by looking at F-table is 2.37. Thus F-count (39,910) > F-table (2.37) which means simultaneously EPS (X1), BI RATE (X2), ROE (X3), NIM (X4), INFLATION (X5) have a significant effect on stock prices (Y) in banking companies listed on the





Indonesia Stock Exchange for the period 2017-2019.

Model	Coefficients ^a					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			Tolerance
(Constant)	3.761	2.044		1.840	.071	
LN_EPS	1.022	.100	1.312	10.206	.000	.233
LN_BIRATE	.227	.773	-.021	-.294	.770	.767
LN_ROE	.974	.193	-.663	5.039	.000	.222
LN_NIM	.946	.332	.192	2.848	.006	.850
LN_INFLASI	.086	1.002	.006	.086	.932	.676

a. Dependent Variable: LN_HARGASAHAM

Table 9. T test

Based on the results of the output above, by looking at the table, which is equal to 2,00030 with an explanation of where:

If the EPS (X1) on t count is 10.206, where t-count > t-table is 10.206 > 2,00030 and the sig value is 0.05, indicating that partially EPS (X1) has a significant positive effect on stock prices (Y), then the H1 statement is accepted.

BI rate (X2) at t-count of -0.294 where t-count < t-table is 0.294 < 2,00030 and sig > 0.05, which means that partially the BI rate (X2) has no significant effect on stock prices (Y), so the H2 statement is rejected.

ROE (X3) on t-count is -5.039, where t-count > t-table is 5.039 > 2,00030 and the sig value 0.05, implying that partially ROE (X3) has a significant negative effect on stock prices (Y), and thus the H3 statement is accepted.

NIM (X4) on t count is 2.848 where t-count > t-table is 2.848 > 2,00030 and the sig value < 0.05, which means that

partially NIM (X4) has a significant positive effect on stock prices (Y), then the H4 statement is accepted.

Inflation (X5) at t-count is 0.086 where t-count > t-table is 0.086 > 2,00030 and the sig value is greater than 0.05, indicating that partially Inflation (X5) has no significant effect on stock prices (Y), and thus the H5 statement is accepted.

CONCLUSION

Based on the research results, it can be found that Earning Per Share (EPS) has a significant effect on stock prices in banking companies listed on the Indonesia Stock Exchange for the period 2017-2019 in a positive direction. The results of this study are supported by research conducted by Sri Murwanti and Mulyono (2015) and Wasis Sujatmiko (2019), namely that EPS has a significant positive effect on stock prices.

Earning Per Share (EPS) is one that affects stock prices. Investors will first analyze the company's EPS because EPS shows the profitability that investors will get. The greater the EPS value, the higher the share price.

The company's EPS is a guideline for investors because large EPS shows the company's ability to generate net profits. If EPS increases, it means that the company can increase prosperity and encourage shareholders to increase the amount of capital invested in the company. Therefore, investors are attracted by the EPS figures reported by companies.

SBI interest rates do not have a significant effect on stock prices, because





the average SBI interest rate during the 2017-2019 study period was 5.08%, which is considered less profitable than investment stocks. Investors believe that when investing in stocks, not in deposits, they will get a bigger profit. Therefore, investors do not need to pay special attention to interest rates. The increase in interest rates will not affect the demand for shares, therefore it will not affect the stock price. Return On Equity (ROE) is an indicator of investors in measuring the company's ability to survive. ROE can get the benefits that investors will get. The greater the ROE value, the higher the share price.

However, in this study, many companies in the banking sector experienced a decline in 2017-2019 but their share prices increased. This means that investors tend not to see ROE as one of the reasons for buying shares. According to research conducted by Rifatin Cholidia (2017), investors in making investment decisions following experience, speculation) and reference groups, investors do not use fundamental analysis. The higher NIM ratio indicates that the bank management's ability is getting better at earning assets (assets that can generate income). Proper management needs to report regularly to take appropriate steps. When the NIM ratio falls from the reference figure, management must take more competitive steps in channeling funds from the aspect of lending interest rates. The increase in inflation will be directly proportional to the minimum return on stock investment, causing a decrease in market valuation. If this happens, the stock price will fall to

balance the existing inflation. It should be noted that the impact is unfavorable on the market in the short term as a result of expectations of an increase in the value of inflation. Nonetheless, this can be the best period for investors to get good prices, and vice versa.

In the EPS research variable, it can be displayed and proven through testing, where the significance value of EPS is $0.000 < 0.05$, which means that EPS has a significant effect on stock prices. In the BI rate research variable, it can be displayed and proven through hypothesis testing, where the BI rate significance value is $0.770 > 0.05$, which means that partially the BI rate does not have a significant effect on stock prices. In the variable ROE research results, it can be displayed and proven through hypothesis testing, where the significance value of ROE is $0.000 < 0.05$, which means that ROE partially has a significant effect on stocks. In the NIM research variable, it can be displayed and proven through hypothesis testing, where the NIM significance value is $0.006 < 0.05$, which means that partially NIM has a significant effect on stock prices. In the research variables, it can be displayed and proven through hypothesis testing, where the significance value of inflation is $0.932 > 0.05$, which means that partial inflation does not have a significant effect on stock prices. In the results of this study, all variables have a significant effect on stock prices. This can be proven through the F test, where the significance value (Sig) is $0.000 < 0.05$, which means that all independent variables simultaneously (together) have a significant effect on stock prices.





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