



Analysis of Financial Ratio to Stock Price

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Abstract: Control of Covid-19 has coincided with a period of economic growth in Indonesia. The banking sector felt the effects of this. The purpose of this study is to identify and analyze the effect of Earning Per Share, Debt to Equity Ratio, and Return on Assets on stock prices. For the duration of this research project (2019-2021), we will calculate and analyze the financial ratios of banking companies traded on the Indonesia Stock Exchange relative to their stock prices. Information for this study was gathered, recorded, and analyzed using a documentation strategy. The study's population consisted of 43 businesses, and 17 were randomly selected for sampling by the purposive sampling technique. This study found that while Earning Per Share and Debt to Equity Ratio were both significantly related to stock prices, Return on Assets was not.
Keywords: Debt to Equity Ratio; Earning Per Share; Return On Assets; Stock Price

INTRODUCTION

Banking has an important role in sustaining Indonesia's economic growth. Even though the banking condition is currently under global pressure, financial resilience is maintained. Currently, Bank Indonesia encourages banks to strengthen synergy with the government or other authorities. The Indonesian economy has demonstrated extraordinary resilience during global economic and geopolitical turmoil. Resilience is an individual's ability to face, overcome, and be strong when dealing with adversity or challenging situations (Grotberg, 2018).

A person or entity's ownership in a corporation is shown by the share price. Stock prices fluctuate in response to The market's interaction between supplies and demands. Increases and decreases in share prices on the market are directly proportional to the company's performance. Increases in share prices can occur due to high demand, meaning that there are quite a lot of stock enthusiasts (Fahlevi et al., 2019). The stock price is a reflection of the company's performance, in this case, investors need to pay attention to what factors can affect the stock price (Tandelilin, 2019).

EPS is a ratio used to assess a business's capacity for profit. The number of outstanding shares affects whether earnings per share are large or low. The low value of a company's EPS suggests that investors are not making large gains. EPS is the nominal sum that investors receive when profits are distributed at the end of the year. The better a corporation performs at returning earnings to its shareholders, the higher its EPS value. Earnings Per Share is a measure that depicts the company's capacity to make profits for each existing share, Tandelilin (2019) defines Earninh Per Share as follows Earninh Per Share is the ratio to measure the profit received per share.

Earning Per Share =

$$\frac{\text{Net Profit}}{\text{Number of Outstanding Shares}}$$

The DER is a part of the solvency ratio. The DER is used as a performance indicator for businesses. DER financial ratio assesses the proportion of equity to debt. Equity and the amount of debt used for company operations must be proportional so that the burden borne by the company is still within reasonable limits (Oktrivina et al., 2022).

The ability of a business to pay down existing debt with existing capital or equity is referred to as DER. Higher DER values indicate more financial risk for a company. According to Kasmir (2019), The DER is a measure of the level of DER to the value of a company's equity. The DER is formulated as follows.

Debt To Equity Ratio

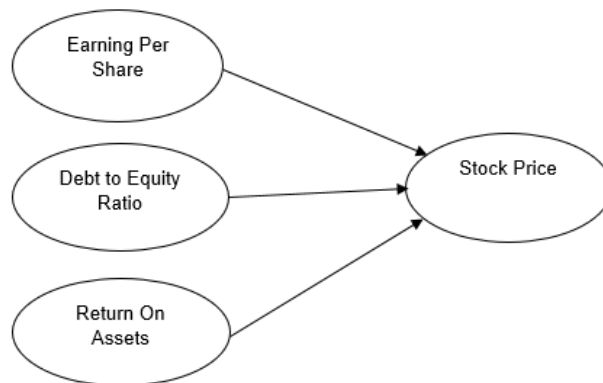
$$\frac{\text{Total Liabilities}}{\text{Total Equity}}$$

Return on assets (ROA) is one measure of financial success (ROA). Divide the net income by the total assets to get the return on investment for the business. This ratio can be used to determine how successfully the business produces earnings (Sari, 2018). ROA may estimate a company's future profitability by measuring its past profitability. The better a company's condition is, the higher this ratio is, and as a result, it should The high or low percentage of the ROA calculation results can be used to determine whether a firm is being managed well or poorly. This will increase the attractiveness of the company to customers and investors (Maulita & Mujino, 2019). According to Hery (2019), "ROA is a metric that shows how much money assets bring in when calculated against net profit. Here is how you calculate return on investment".

Return On Assets=

$$\frac{\text{Net profit after tax}}{\text{Total Assets}}$$

Based on the description above, the following is a framework for analyzing financial ratios to stock prices:



Description:

1. Hidayat & Topowijono (2018)
2. Oktrivina et al. (2022)
Ramadhana et al. (2018)
3. Lubis & Gami (2022)
Sari (2018)

Figure 1. Framework

Source: The data is processed by the author (2022)

Based on the framework in Figure 1 it can be concluded that the hypothesis :

H1: There is a significant influence between EPS on stock prices.
 H2: There is a significant influence between DER on stock prices.



H3: There is a significant influence between ROA on stock prices.

The objectives of this study are as follows : (1) To find out and analyze the effect of Earning Per Share on stock prices; (2) To find out and analyze the effect of Debt to Equity Ratio on stock prices; (3) To find out and analyze the effect of Return On Asset on stock prices.

METHODS

This kind of study uses quantitative techniques to analyze the financial ratios of stock prices listed on the Indonesia Stock Exchange. Data collection techniques using data collection techniques a time series for 3 years, namely from 2019-2021 taken from the annual financial reports and banking stock prices listed on the IDX. A population is a broadly defined group of things or persons that have particular traits and attributes that researchers are studying to conclude (Sugiyono, 2018). 43 banking businesses that were listed on the Indonesian stock exchange between 2019 and 2021 make up the population.

Sugiyono (2019) claims that the sample represents the size and features of this group. Purposive sampling was the method of sampling employed in this investigation. Samples were taken by considering several criteria, namely: (1) Financial institutions trading on Indonesia's stock exchange in the years 2019-2020; (2) Financial institutions that have full statements for 2019–2021; (3) Companies in the banking industry that did not incur any losses during the study period; (4) National and international banks; (5) Banking companies which are conventional commercial banks.

Table 1. Tabulation Sample

Population	Total
Financial institutions trading on Indonesia's stock exchange in the years 2019-2020.	43
Financial institutions that have full statements for 2019–2021.	(3)
Companies in the banking industry that did not incur any losses during the study period.	(13)
National and international banks.	(2)
Banking companies which are conventional commercial banks.	(8)
Sample used	17

Source: Processed data (2022)

From the table above, it can be concluded that the samples used in this study were 17 (seventeen) companies that met the criteria.

Data Analysis Tools

Conventional assumption test The regression estimation using ordinary least squares (OLS) will be BLUE (Best Linear Unbiased Estimator) if the classical assumptions are met, according to Ghozali (2019) which means that judgments made using the F Test and T-Test cannot be biased. There are various classic assumption tests in this study, including:



Normality test

According to Ghozali (2019), "The normality test determines if the residual values from the regression model follow a normal distribution". Using both graph analysis and statistical analysis can help establish whether or not the residuals follow a normal distribution.

Graphic Analysis

The histogram, which compares the real-world data to a nearly normal distribution, is one of the simplest approaches to determining normality in this graphical study. Following is the rationale for the decisions made in this analysis.

- 1) The assumption of normality in a regression model is met if and only.
- 2) There is a tendency for the data to congregate near the diagonal line and move in the same direction.

Non-parametric statistical analysis Kolmogorof-Smirnov test (KS)

Suliyanto (2019) states that the basis for this analysis's decision-making is whether the regression model satisfies the following normality assumptions.

- 1) If the $\text{Sig} > \alpha$ value then the residual value is normally distributed.
- 2) If the value of $\text{Sig} < \alpha$ then the residual value is not normally distributed.

Heteroscedasticity

Test Heteroscedasticity, according to Ghozali (2019) denotes the presence of different variables in the regression model. Homoscedasticity is what happens when the variable variations in the regression model all have the same value. Graphical analysis techniques can be used to find heteroscedasticity issues. Contrary to the regression model's normality assumption if the data deviates from the diagonal or the histogram's direction of spread, and vice versa, ZPRED. A basic evaluation of this technique includes:

- 1) Heteroscedasticity occurs when a specific pattern appears, such as when dots make a regular pattern that is wavy, enlarged, and then narrowed.
- 2) Y-sub bubble heteroscedasticity is absent if the dots have no discernible pattern and are uniformly spaced above and below 0.

Multicollinearity Test

A multicollinearity test is used to determine whether or not the independent variables in a regression model are excessively or perfectly interrelated. Finding a high correlation between variables requires some detective work, and the Tolerance and Variance Inflation Factor can help with that. Tolerance is the amount of variation in the selected independent variables that can't be accounted for by changing any of the other variables. according to Ghozali (2019). A low tolerance hence results in a high VIF value. The following is a list of the tolerance and VIF presumptions :

- 1) If $\text{VIF} > 10$ and the Tolerance value < 0.10 then multicollinearity occurs.
- 2) If $\text{VIF} < 10$ and Tolerance value > 0.10 then multicollinearity does not occur.



Autocorrelation Test

According to Ghozali (2019), “the autocorrelation test looks for evidence of a relationship between the interfering errors in period t-1 (the period before the current one) and the confounding errors in period t”.

There is an autocorrelation issue if there is a correlation. The Durbin Watson (dW) approach provides the foundation for overcoming the occurrence of autocorrelation. There is no autocorrelation if the Durbin Watson (dW) calculation results are higher than the dl and dU table values. The statistical table from Durbin-Watson shows the value of dl and du at a significant threshold of 0.05. Another requirement for the absence of autocorrelation is that $dW > Du$, $(4-dW) > dU$, or $(4-dW) > dU$ dW.

Multiple Linear Regression

According to Arifin (2019), “Multiple regression occurs when there is one dependent variable in addition to two or more independent variables. In data collected on an interval or ratio scale, determining the direction of the relationship between the independent and dependent variables can be a challenging task”. Due to the vast number of potential factors, a multiple regression analysis is conducted. This chart illustrates the interdependence of the three independent variables (X1, X2, and X3) with the fixed factor (Y) so that we may assess the relevance of the ROA, EPS, and DER to banks traded on the IDX.

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + e$$

Where :

Y = stock price

a = constant

b1.b2.b3 = regression coefficient

X1 = Earning Per Share

X2 = Debt to Equity Ratio

X3 = Return On Assets

e = Standard Error

Hypothesis testing

Hypothesis testing, under Arifin (2019), is used to statistically examine the veracity of a claim and reach decisions regarding whether to accept or reject the claim. Choosing a proposed hypothesis is made easier with the help of hypothesis testing. We performed the t-test to examine how each independent variable affected the dependent one. If the Sig value is less than 0.05, then the null hypothesis is accepted; otherwise, the null hypothesis is rejected since the independent factors have a significant effect on the dependent variable. If the Sig value is smaller than 0.05, showing a statistically significant association between the independent and dependent variables, we can accept the hypothesis. Conversely, the following requirements apply to a t-test that compares the predicted t-value to a t-table:

- If t count > t table or -t count < -t table at $\alpha=5\%$ then H_0 is rejected H_1 is accepted.
- If t count < t table or -t count > -t table at $\alpha=5\%$ then H_0 is rejected H_1 is rejected.

In brief, the F test determines if any variables in the model do a good job of predicting the dependent variable (Ghozali, 2019). It is recommended to employ a significance level of $\alpha = 0.05$, or 5 percent when looking for a multiplicative relationship between the independent variables and the dependent one. The F test in SPSS, which

shows how each independent variable affects the dependent one and gives the associated p-value, is presented (column sig) as the degree of significance and is displayed in the ANOVA table.

Coefficient of Determination (R^2 test)

According to Ghozali (2019), "Coefficient of determination is a statistical measure of how well a model describes the distribution of its dependent variable, including its extreme values". Any number between zero and one can be used for the coefficient of determination. The independent variable can only explain so much, hence the dependent variable must also play a role in the total variance. the R^2 value is low. If it's close to 1, the criteria for predicting the dependent variable are nearly fully met using the independent variables (Ghozali, 2019).

RESULTS AND DISCUSSION

In this study, we employ a conventional assumption test to guarantee that the derived regression equation yields trustworthy estimates free of bias. The normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test are all components of the standard assumption test. Results from the study's traditional hypothesis test are presented below :

In a regression model, normal distributions must be assumed for the dependent and independent variables, a normality test is conducted. The Kolmogorov-Smirnov test was utilized in this investigation. When the value of the significance test is greater than 0.05, the data is said to have a normal distribution, but when it is less than 0.05, it is said to have an irregular distribution.

Table 2. Normality Test Results

Asymp Sig 2 tailed	Standard	Conclusion
0,200	0,05	Normal distribution

Source: Secondary data is processed (2022)

The significance level is 0.200 based on the above tests, which is greater than the 0.05 threshold. The data is considered to have a normal distribution because of this. To find out how strongly the independent variables in the regression model are linked together, a multicollinearity test can be run. If the VIF is larger than 10, and the Tolerance is less than 0.01, then multicollinearity exists in the regression model. If the VIF is less than 10 and the tolerance is greater than 0.1, the regression model is not multicollinear.

Table 3. Multicollinearity Results

Variable	Tolerance	Criteria	VIF	Criteria	Conclusion
EPS	0,992	>10	1,008	< 10	There is no multicollinearity
DER	0,979	>10	1,022	< 10	There is no multicollinearity
ROA	0,987	>10	1,013	< 10	There is no multicollinearity

Source: Secondary data is processed (2022)

The EPS, DER, and ROA variables have a tolerance value of > 0.1 and a VIF value of 10, which shows that there was no multicollinearity in this study based on the results of the data processing described above.

Use the heteroscedasticity test to see if your regression data is significantly different from the expected distribution. This study utilized the scatter plot heteroscedasticity test. In this hypothesis, heteroscedasticity is indicated by the presence of a specific pattern, such as a regular pattern of dots that are wavy, increased, and then narrow. On the other hand, if the data points are uniformly scattered above and below the Y-axis with no discernable pattern, we do not have heteroscedasticity.

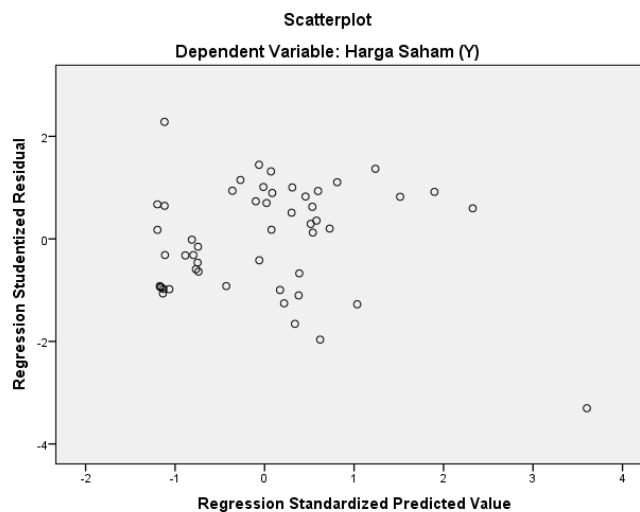


Figure 2. Graph of Heteroscedasticity Scatterplot Test results

Source: Secondary data is processed (2022)

A lack of heteroscedasticity in the regression model can be derived from the results of the aforementioned scatterplot test, which demonstrate that the dots are randomly distributed above and below the Y-axis. The goal of this test is to determine if there is a statistically significant difference between the confounding errors for periods t and $t-1$ in the regression model, one can do an autocorrelation test. If the dW result in this study is greater than the dI and dU table values, then there is no autocorrelation, according to a conclusion made using the Durbin Watson (Dw) autocorrelation test. In the meantime, autocorrelation happens if the dW results are lower than the dI and dU table values. Another requirement for the absence of autocorrelation is that $dW > Du$, $(4-dW) > dU$, or $(4-dW) > dU$ dW . The statistics table from Durbin Watson shows the value of dI and dU at a significant level.

Table 4. Durbin Watson Autocorrelation Test Results

dW	DI	Du	(4-Dw)
1,815	1.4273	1.6754	2,185

Source: Secondary data is processed (2022)



Since the values of $dW > dU$ and $(4-Dw) > Du$ are greater than zero, as stated above, Conclusions No autocorrelation was found in this study.

The purpose of multiple linear regression is to understand how various independent variables affect a dependent one. Results from several linear regression analyses in this study indicate:

Table 5. Multiple Linear Regression Results

Model	B
Constant	345,697
Earning Per Share	1,685
Debt to Equity Ratio	0,348
Return On Assets	15,351

Source: Secondary data is processed (2022)

The regression equation model is obtained as follows, based on the results of the linear regression test described above:

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + e$$

$$Y = 345.697 + 1.685 X_1 + 0.348 X_2 + 15.351 X_3$$

Information :

Y = dependent variable (stock price/stock price)

a = constant

b_1, b_2, b_3 = regression line coefficients

X_1, X_2, X_3 = Independent variables (EPS, DER, ROA)

e = Standard error

The following is an explanation of the previous linear regression equation:

1) A constant of 345.697 means that the stock price (Y) is equal to 345.697 if the EPS (X_1), DER (X_2), and ROA (X_3) variables have values of 0.

2) A regression coefficient of 1.685 for EPS indicates that a one percentage point increase in EPS, with all other independent variables held constant, will increase to IDR 1.685 per share. Stock prices and earnings per share (EPS) have a positive correlation, as shown by the positive regression coefficient.

3) If the other independent variables are fixed and the DER increases by 1%, the stock price will decrease by IDR 0.348 according to the regression coefficient of the DER variable, which is 0.348. The negative regression coefficient indicates a negative correlation between DER and stock prices. The stock price will drop if the DER value rises.

4) The ROA variable's regression coefficient is 15.351, meaning that if the other variables are held constant and ROA rises by 1%, the stock price will rise by IDR 15.351. The positive regression coefficient indicates a positive relationship between ROA and stock prices; as a result, as the ROA value rises, so will the stock price.

The t-test is designed to identify which of several potential predictors significantly affect the dependent variable of interest. The results of the t-test can be interpreted in light of a comparison of the significance level and the calculated t value to the value in the t table. To use the significance level in a t-test, the following conditions must be met:

- If the value of the significance level (sig) is less than 0.05, then it is reasonable to reject the null hypothesis. As a result, the independent and dependent variables do not show any strong relationships.



It is considered as true if there is a statistically significant correlation between the two variables, or if the p-value is less than 0.05.

The t-test has the following requirements if the t value is compared to the t table:

- If $t_{count} > t_{table}$ or $-t_{count} < -t_{table}$ at $\alpha=5\%$ then H_0 is rejected H_1 is accepted.
- If $t_{count} < t_{table}$ or $-t_{count} > -t_{table}$ at $\alpha=5\%$ then H_0 is rejected H_1 is rejected.

Table 6. Results of the T-Test Hypothesis

Variable	t arithmetic	t standard	Sig	Standard	Conclusion
EPS	2,815	2,011	0,007	< 0,05	H_0 rejected H_1 accepted
DER	2,856	2,011	0,006	< 0,05	H_0 rejected H_2 accepted
ROA	0,485	2,011	0,630	< 0,05	H_0 accepted H_3 rejected

Source: Secondary data is processed (2022)

The t-test for hypothesis significance is described as follows, using the data in the preceding table: The EPS variable has an estimated t value of 2.815, which is larger than the 2.011 in the t table, and a significance level of 0.007, which is lower than the typically accepted level of 0.05. As a result, we find support for H_1 , and disfavor H_0 , demonstrating that the EPS variable positively impacts stock prices.

The DER variable's t-computed value is 2.856, which is higher than the t-table value of 2.011, and its significance value is 0.006, which is lower than the typical 0.05 threshold. In light of these findings, we accept H_2 and reject H_0 , demonstrating that the DER variable strongly affects stock prices in the affirmative.

The significance level of the ROA variable is judged to be 0.630, which is higher than the conventional 0.05 level, and the t value is 0.485, which is lower than the 2.011 value of the t table. Therefore, since the ROA variable has a negative or zero effect on stock prices, we infer that H_0 is correct and reject H_3 .

The F test is used to show that all of the independent variables have an impact on the dependent variable. The sig significance standard forms the basis of the F test's conclusion. The statistical significance level of 0.05.

Table 7. F-Test Results

Model	Df	F	Sig
regression	3	5,910	0,002
Residual	47		
Total	50		

Source: Secondary data is processed (2022)

With a Sig value of 0.002 (less than the threshold of 0.05), the data in the table shows that EPS, DER, and ROA all have a joint effect on the dependent variable (ROA).

How well a model fits the data for a particular dependent variable is quantified by its coefficient of determination. Since the independent variable can only account for so much of the variation in the dependent variable, the R^2 value indicates how little of that variation can be explained. If the R square value is greater, the regression model will function more effectively.



Table 8. Results of the Coefficient of Determination (R Square)

Model	R	Adjusted R square	Std. Error of the Estimate	Conclusion
	0,523	0,228	233,364	Influence of 22,8%

Source: Secondary data is processed (2022)

The test findings showed a 0.228 coefficient of determination, which suggests that the independent variables EPS, DER, and ROA all have a 22.8% impact on the dependent variable, stock price, while other factors account for the remaining 77.2%. Based on this prior literature, this study intends to predict and assess the effect of Return on Assets, Earnings Per Share, and Debt to Equity Ratio on the share prices of banking enterprises listed on the Indonesian Stock Exchange in 2019 and 2021.

CONCLUSION

Based on preliminary hypothesis testing results, The stock prices of Indonesian banking businesses traded on the Indonesia Stock Exchange are anticipated to rise significantly as a result of rising EPS in the years 2019–2021. After looking into the second hypothesis, we found DER will lead to higher share prices for banking companies listed on the Indonesia Stock Exchange in 2019 and 2020. The final hypothesis test for the banking companies listed on the Indonesia Stock Exchange revealed that ROA had no substantial effect on stock prices over the 2019-2021 projected period.

REFERENCES

- Arifin, J. (2019). *SPSS 24 untuk penelitian dan skripsi*. PT Elex Media Komputindo.
- Fahlevi, R. R., Asmapane, S., & Oktavianti, B. (2019). Pengaruh kinerja keuangan terhadap harga saham pada perusahaan perbankan yang terdaftar di bursa efek indonesia. *Akuntabel*, 15(1), 39–48.
- Ghozali, I. (2019). *Aplikasi Analisis Multivariate Dengan Pogram IBM SPSS*. Badan Penerbit Universitas Diponegoro.
- Grotberg, E. (2018). Three Sources of Resilience. In *Head Start Bulletin* (Vol. 80).
- Hery. (2019). *Analisis Laporan Keuangan*. CAPS.
- Hidayat, D., & Topowijono, T. (2018). Pengaruh Kinerja Keuangan Terhadap Harga Saham (Studi Pada Perusahaan Pertambangan Subsektor Pertambangan Minyak dan Gas Bumi Yang Terdaftar Dibursa Efek Indonesia Periode 2013-2016). *Jurnal Administrasi Bisnis*, 62(1), 36–44.
- Kasmir. (2019). *Analisis Laporan Keuangan. Edisi Pertama. Cetakan Keduabelas*. Jakarta: PT Raja Grafindo Persada.
- Lubis, K. A., & Gami, E. R. P. (2022). Pengaruh Return On Assets (ROA) dan Return On Equity (ROE) Terhadap Harga Saham Pada Perusahaan Go Public Yang Terdaftar Di Bursa Efek Indonesia (BEI) Tahun 2019. *Jurnal Bisnis, Manajemen, dan Akuntansi (JBMA)*, 9(1), 15–25.
- Maulita, Prayudita., & Mujino. (2019). Pengaruh Current Rasio (CR), Return Of Asset (ROA), Dan Debt To Equity Ratio (DER) Terhadap Harga Saham Pada Perusahaan Makanan dan Minuman Yang Terdaftar Di Bursa Efek Indonesia (BEI) Periode 2013-2017. *SEGMENT: Jurnal Manajemen dan Bisnis*, 15(2), 1–8.
- Oktrivina, A., Andamari, B. G., & Erwandi, F. (2022). Pengaruh price earning ratio, debt equity ratio, dan return on equity terhadap harga saham syariah periode 2017-2019. *SERAMBI: Jurnal Ekonomi Manajemen dan Bisnis Islam*, 4(1), 99–108.



- Ramadhana, A. A., Sjahrudin, H., & Purnomo, S. H. (2018). Pengaruh Kinerja Keuangan Terhadap Harga Saham. *Jurnal Organisasi dan Manajemen*, 1, 47–65.
- Sari, W. P. (2018). Pengaruh Rasio Keuangan Terhadap Harga Saham Pada Perusahaan Manufaktur Go Public yang Terdaftar di Bursa Efek Indonesia. *Jurnal Ilmiah Skylandsea*, 2(1), 43–52.
- Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta.
- Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Suliyanto. (2019). *Metode Riset Bisnis*. Yogyakarta: Andi Offset.
- Tandelilin, E. (2019). *Portofolio dan Investasi: Teori dan Aplikasi (Pertama)*. PT Kanisius.