

# Stock return content analysis based on ratio method: Case study on infrastructure, utilities and transportation companies listed on IDX in 2018-2020

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## Abstract

This research aims to analyze the effect of liquidity, leverage and profitability on the company's stock returns. Liquidity is proxied by current ratio, leverage is proxied by debt to equity ratio (DER), and profitability is proxied by return on assets (ROA). The research uses quantitative approach to explain the research purpose comprehensively through statistics scheme. The research population is all infrastructure, utility and transportation companies listed on Indonesian stock exchange in 2018-2020. This research use purposive sampling technique and 27 companies as samples. The analysis method is classical assumption, multiple linear regression, hypothesis test, estimator model accuracy test and determination test. Several results show that liquidity, leverage, and profitability individually have significant effect on stock return. Based on the goodness of fit test shows liquidity with CR, leverage with DER and profitability with ROA simultaneously effect on stock return. The originality of this research is model initiation of the company's policy-making to increase stock returns in the future period through ratio analysis.

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## Introduction

Capital markets play an important role as an intermediary to help the economy, allowing people who need money to match those who have surplus funds. The rapid development of capital markets can draw the attention of investors to investment. Investing is a way to invest in something of making a profit in the next future. One of all that attracts investors is stocks that expect returns. There are two stock returns, capital gains and dividends (Arifardhani, 2020). Capital gains are the profits that result from the difference between the selling and buying prices of a stock, and dividends are the distribution of profits from the number of shares that owned.

Stock yield is when the selling price of a stock exceeds the buying price. Companies that expect high returns must also take high risks. Therefore, when predicting stock returns, investors need to pay attention to the financial performance of the companies invited to collaborate. Good financial performance shows that the company has qualified quality to increase return income so that it is able to pay dividends to investors (Sitorus & Elinarty, 2017). Here, researchers using three factors that affect stock returns, including liquidity, leverage, and profitability.

According to Mahzura (2018), liquidity is a employer's capability to correctly meet its short-time period debt responsibilities with modern funds. That is, if a employer is billed, it may repay its debts, in particular unpaid debts. Liquidity is proxied the use of the Current Ratio (CR). Current Ratio (CR) suggests the quantity to which modern property meet their short-time period responsibilities. The higher the modern ratio displays the extra liquid the employer is, so the capability to satisfy its short-time period responsibilities is better. The first thing that impacts inventory returns is liquidity. Companies ought to be capable of perform operations well in an effort to achieve top of the line earnings in order that investment and financing can run more

smoothly. Bataineh and Alrabadi's studies (2017) which examines the impact of man or woman inventory liquidity on inventory returns in organizations indexed at the Amman Stock Exchange at some point of the duration 2004-2014. The consequences of studies on organizations indexed at the Amman Stock Exchange at some point of the duration 2004-2014 display a completely sturdy have an impact on of liquidity, however fluctuate from the studies carried out by study of Shakatreh (2020) which examines the impact of liquidity hazard on the connection among income and inventory returns working in public shareholding business organizations in Jordan. The findings display that liquidity hazard has a full-size bad impact on the connection among income and inventory returns. The better the liquidity, the better the chance of employer failure.

Leverage is the second factor that affects stock returns. According to Ramlah (2021), leverage is the ability to meet financial obligations or measure how far a company's assets are covered by liabilities in the short and long term. The companies use leverage to ensure that revenues exceed assets and sources of funds. This will increase shareholder returns. Leverage can be determined by the leverage ratio. Debt to Equity Ratio or DER is a proxy of liabilities and represents a company's adequacy and financial risk. The higher of DER value shows the interest how much company has to pay. In this case, the dividend may be lower. This condition indicates that the company's stock is less attractive, and the company's earnings for shares automatically decrease (Zulfikar, 2016). DER is a metric that can measure a company's financial leverage. The lower DER value will impact the higher company's ability to meet the obligations in good faith. The company has a higher risk of bankruptcy. A low DER affects the stock price and earnings growth and encourages investors to invest (Sondakh, 2019). A study by Rehman, Amir, Anwar, and Malik (2020) attempted to show the effect of leverage on textile stocks performance on the Pakistan Stock Exchange. This research shows that corporate leverage and return on equity (ROE) have a significant and positive relationship in Pakistan's textile sector. Besides, Shabani et al. (2018) state that liquidity ratio, leverage, and profitability individually have no significant effect on return equity.

Profitability is the third factor that affects stock price return. Profitability is a company's ability to get profit, i.e., how effectively companies manages it. Profitability can be determined using Return on Assets (ROA). ROA is a ratio analysis method to measure a company's ability to earn the return on all investments. The company will work hard to improve the return on investment. The higher of ROA value shows how far company can use its assets to generate net income after tax and thus higher profits. The effect of profitability on the return on equity (ROE) of 4,444 total assets out of 4,444 companies (Warrad & Nassar, 2017). ROA also serves as a measure of a company's effectiveness in using assets used for profit. Companies will get high profits as large profits attract investors (Jääskeläinen, Maula, & Murray, 2007). On the other hand, according to Puspitasari, Sudiyatno, Hartoto, and Widati (2021), the definition of ROA was chosen in this research because it reflects a firm's ability to use its assets to generate a profit at its facility. A study by Fachrudin and Ihsan (2021) examines the impact of aggregate economic profitability, size, and liquidity on stock returns of Indonesian energy consumers. The findings of this study are that financial difficulties and liquidity returns have a significant influence or impact on the return on equity (ROE). However, this study outcome differs from Fajaria and Isnalita (2018), entitled "The effect of profitability, liquidity, leverage and firm growth of firm value with its dividend policy as a moderating variable ". These results show that the predictive profitability variable with a ROA does not affect the return on equity.

The behavior of this observe is inseparable from preceding research. Several research carried out to decide the effect of liquidity, leverage and profitability on fairness returns have yielded a whole lot of consequences. A observe through Medyawati and Yunanto (2017) examines the effect of leverage ratios on fairness returns of businesses worried in Indonesia`s actual property, actual property and creation sectors. The consequences of the observe confirmed that the influential variable on this observe turned into leverage (DER). Shakatreh (2020) observes to investigating the effect of liquidity danger on the connection among income and fairness returns operated through commercial businesses with the participation of the overall public in Jordan. The consequences display that liquidity danger has a big bad effect on the connection among income

and shareholder returns. The better the liquidity, the much more likely the business enterprise will fail. A observe through Fachrudin and Ihsan (2021) examines the effect of tough financial profitability, length and liquidity on Indonesian power consumers' fairness returns. The consequences of this observe are monetary misery and liquidity profitability, that have a big effect on fairness returns. Based on background and research gap above, this research aims to analyze the effect of liquidity, leverage, and profitability on stock return.

## Literature Review and Hypotheses Development

Financial statements show the company's financial position and reference material that shows the company's financial performance. Disclosed financial statements may be analyzed when evaluating the financial performance of the firm. The statements reflect the financial status of 4,444 companies and the degree to which the company's vision and mission have been achieved. Management and business stakeholders must analyze all commercial activities in detail (Budiman, 2020). Because the stock's selling price is much higher than the purchase price, it means that the investor also has a high return on the stock. Those who expect high returns must take high risks and vice versa. Income can be income received or expected income not yet received but expected to be received in the future (Jiang, Tian, Wu, & Mo, 2022).

According to Widyastuti (2019), liquidity can repay all short-term debts at maturity using available working capital. Current Liquidity Ratio consists of Current Liquidity Ratio, Current Liquidity Ratio, and Absolute Liquidity Ratio. The prices used in this review are current prices. According to Kasmir (2016), the current ratio is a measure of firm's ability to meet its short-term obligations as a whole. According to Jiang, Tian, Wu, and Mo (2022), leverage is the ability to measure the use of debt to finance corporate assets. This study expresses leverage as a debt-to-equity ratio (DER). Debt to Equity is a ratio used to compare Debt to Equity. This ratio shows the amount borrowed by the borrower to the business owner, all of which can be found (Kasmir, 2016). Leverage is also widely used by businesses as a tool to increase capital and increase profits (Lazzem & Jilani, 2018). According to Chen, Harford, and Kamara (2019), profitability is a company's ability to gain their profits and a measure to evaluate a company's performance and ability to gain their profits. The higher the profitability, the better the company's performance (Hardianto, 2021). A high ROA indicates that the company uses its assets more efficiently to generate revenue and add value. Assets are all company assets derived from its own or foreign capital that the company has converted to its survival. ROA also functions as a tool to measure the effectiveness of companies using assets used to generate profits. Big profit attracts investors and makes the company highly profitable (Affandi, 2019).

Liquidity is the firm's prosperity to repay its short-term debt from its current activa adequately. The higher liquidity ratio, the more cash the company has to pay off short-term liability. This will increase the demand for shares, which will increase the returns on shares (Sutomo, Wahyudi, Pangestuti, & Muharam, 2020). Results of a study of companies listed on the Amman Stock Exchange in 2004-2014. The liquidity effect is very significant. This is important for stocks to work. This is the result from study by Kajola, Alao, Sanyaolu, and Ojurongbe (2019). The results show that the liquidity ratio significantly affects price performance. So the hypothesis is:

H1: Liquidity has a significant effect on stock returns.

Leverage one of cappotential to fulfill brief or long time economic obligations, or a degree of ways properly a company's belongings are blanketed with the aid of using its liabilities. Companies use leverage to goal the income they make extra than their belongings and investment sources. This will shock the expectation of the shareholders. A look at with the aid of using Rehman, Amir, Anwar, and Malik (2020) attempts to reveal the effect of leverage at the inventory returns of the fabric region at the Pakistan Stock Exchange. The consequences of this look at suggest that there's a robust fantastic correlation among company leverage and go back on equity (ROE) withinside the Pakistani fabric industry. Dwiantari and Artini (2021) analyzed the impact of leverage ratios, overall performance and profitability on go back on equity (taking the instance of manufacturers indexed at the IDX, 2016-2019). The consequences of this look at additionally

display that the connection among leverage, interest and profitability has a sizeable impact on go back on equity (ROE). Then it can be concluded that the hypothesis is:

H2: Leverage has a significant effect on stock returns.

Profitability is the company's ability to earn profits, namely how efficient a company is in managing it. The higher the ROA, the more efficiently the company can use its assets to generate net income after taxes, thereby increasing profits. Research of Al Salamat and Mustafa (2016) shows the effect of capital structure on stock returns. Empirical data from companies listed on the Amman Stock Exchange show that liquidity and probability have a significant positive effect on the stock performance of the IDX in 2012. The result is return on assets (ROA), a measure of profitability that affects stock returns. Therefore, the following assumptions can be formulated:

H3: Profitability has a significant effect on stock returns.

## Research Methods

This research uses a quantitative to explain the research purpose comprehensively through a statistics scheme. The data used in this study are multiple regression and a set of numerical tools, including a set of F-tests, t-tests, and coefficients of determination for statistical analysis. Multiple linear regression was used to analyze the effect of the independent variable (X) on the dependent variable (Y). The data type in this research is secondary data, and data collection techniques use Indonesian Stock Exchange (IDX) document technology, press releases from magazines, company's websites, and electronic print media. The survey targets infrastructure, utility, and transportation companies listed on the IDX between 2018 and 2020. The number of infrastructures, utility, and transportation companies listed on the IDX as research objects are 78. The sampling method uses purposive sampling with a sample consisting of 57 data sample sizes..

The Stock Return (Y Variable) is used to dependent variable in thus case. Stock return is the investor's perception of investment on the level of success in obtaining profits. High stock returns will make the level of risk faced by the company is also high. High stock returns make investors have to choose efficiently and reduce the risks that arise. Stock Return as the dependent variable can be formulated as follows:

$$\text{Stock Return} = \frac{P_t - P_{t-1}}{P_{t-1}}$$

Liquidity is evaluate of how far firm's potency covered short-term liability on time when a payment date has arrived (Kajola, Alao, Sanyaolu, & Ojuronbe, 2019). This study uses the Curret Ratio proxy for liquidity measurement as seen from the financial statements of the selected sample companies. The formula of the Current Ratio:

$$\text{Current Ratio (CR)} = \frac{\text{current asset}}{\text{current liabilities}}$$

Leverage is an important tool in measuring the effectiveness of the use of company assets debt. This study uses the DER proxy for measuring leverage on as seen from the selected sample financial reports. Formula of Debt to Equity (DER):

$$\text{Debt to Equity Ratio (DER)} = \frac{\text{total amount of debt}}{\text{own equity}}$$

Profitability is each firm's effort to gain profits to wave short-term and also for the long-term lead up to increase investor confidence so that investors are attracted to invest, and the company has excellent performance prospects for the future (Fajaria & Isnalita, 2018). This study uses the ROA ratio contained in the financial statements of the selected sample companies to assess the level of profitability of assets. ROA formula, namely:

$$\text{Return on Asset (ROA)} = \frac{\text{net profit}}{\text{total asset}}$$

Based on several factors that affect stock returns, this study uses the company's financial statements as data to determine how much influence liquidity is proxied by the current ratio, the independent is leverage which proxied by debt to ratio and profitability proxied by return on assets to stock returns.

## Analysis Tools Used

### Normality Test

The first test on classical assumption is the normality test. It is a test to determine whether the independent and dependent variables' data follows a normal distribution. The normality standard can be confirmed using the K-S standard. If the asymp sig. grade is more significant than 0.05, the data obtained is said normally distributed, but, if less than 0.05, the data is not distribute normally (Riyanto & Hatmawan, 2020).

### Multicollinearity Test

After the research was normal then used multicollinearity. A test is used to determine whether an independent variable is multicollinear. A method of measuring the presence or absence of multicollinearity between independent variables is the VIF (variant inflation rate) and tolerance, a tolerance value of 0.10 or a VIF value of 10 indicates multicollinearity. So a good result is that there are no signs of multicollinearity (Ghozali, 2013).

### Heteroscedasticity Test

The heteroscedasticity test is to determine if there is an inequality of residual variance from one observation period to another. A test for heteroscedasticity can be viewed as a Glaser test. If sig > 0.05, there is no heteroscedasticity. Conversely, sig < A value of 0.05 results in heteroscedasticity (Riyanto & Hatmawan, 2020).

### Autocorrelation Test

The autocorrelation test is a correlation test between the t cycle usage error and the previous cycle  $t_1$  error in the linear model. The basis of autocorrelation testing is the use of the Durbin-Watson (DW) test. If the Durbin-Watson value is between 1 and 2, there is no autocorrelation. (Ghozali, 2013).

### Multiple Linier Regression Analysis

Multiple linier regression analysis examines the independent variables contribution on variation of dependent variables (Latif, Reza, & Dewi, 2021). This study uses the following equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Description:

Y = Stock Returns

$\alpha$  = Constant

$\beta_1 \beta_2 \beta_3$  = Coefficient

$X_1$  = Liquidity

$X_2$  = Leverage

$X_3$  = Profitability

e = Error

### Hypothesis Testing

F-Test (Simultaneous Effect)

The F-test used to simultaneously determine the effect of an independent variable on dependent variable. If sig value more than 0.05, then independent variable have no significant affect on dependent variable, vice versa (Riyanto & Hatmawan, 2020).

### t-test (Partial Effect)

The t test is used to analyze the effect of independent variables individually on dependent variable (Riyanto & Hatmawan, 2020). Decision making is carried out as follows if the value of sig more than 0.05, then independent variable has no significant effect on dependent variable, vice versa.

### Coefficient of Determination

The coefficient of determination shows how well independent variables can explain the variation of dependent variable. The coefficient of determination values are 0 and 1. The higher the R value of the square, the higher the independent variable in the dependent variable description (Latif, Reza, & Dewi, 2021).

**Table 1.** Normality Testing Results

	Stock Returns
N (sample size)	57
Test Statistics	1.178
Asymp. Sig. (2-tailed)	.068

Source: data processed, 2022

**Table 2.** Multicollinearity Testing Results

Model I	Unstandardized Coefficients		Collinearity Statistics	
	B	Std. Error	Tolerance	VIF
(Constant)	1.872	.804		
Current Ratio	.146	.040	.333	3.007
Debt to Equity Ratio	.177	.087	.254	3.940
Return on Asset	.334	.059	.376	2.662

Source: data processed, 2022

**Table 3.** Autocorrelation test

	Durbin-Watson
Model I	2.143

Source: data processed, 2022

**Table 4.** Multiple Linear Regression Test

Model I	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	1.872	.804	2.327	.022
Current Ratio	.146	.040	3.607	.001**
Debt to Equity Ratio	.177	.087	2.029	.045*
Return on Asset	.334	.059	5.636	.000***

Source: data processed, 2022

**Table 5.** Goodness of Fit Test and F-Test

Model I	Sum of Squares	df	Mean Square	F	Sig.
Regression	821.051	3	273.684	106.380	.000***
Residual	236.689	53	2.573		
Total	1057.740	57			

Source: data processed, 2022

## Results and Discussion

Based on the normality test result in table 1, the significance value for this regression model is  $0.68 > 0.05$ . So it can be concluded that the residual value is normally distributed. Based on the results of the multicollinearity test in table 2, the TOL value of the liquidity variable is  $0.333 > 0.10$ , and the VIF value is  $3.007 < 10$ , then the liquidity variable is declared to have no multicollinearity. The TOL value for the leverage variable is  $0.254 > 0.10$  and VIF  $3.940 < 10$ , so it can be concluded that there is no multicollinearity. The tolerance value for the profitability variable has a TOL value of  $0.376 > 0.1$  and a VIF of  $2.662 < 10$ , so it can be concluded that there is no multicollinearity.

From the results of the SPSS heteroscedasticity test output, it shows that the liquidity sig variable value is  $0.782 > 0.05$ , the leverage variable sig value is  $0.928 > 0.05$ , the profitability sig value is  $0.226 > 0.05$ , so it can be concluded that there is no heteroscedasticity. From the results of the autocorrelation test in table 3 of the SPSS model, the results of Durbin Watson are 2.143, and it can be concluded that there is no autocorrelation.

Based on the results, the regression equation formed in this regression test (table 4) is:

$$Y = 1.872 + 0.146X_1 + 0.177X_2 + 0.334X_3 + e$$

A constant of 1.872 means that if the variables of liquidity, leverage, and profitability do not change or are constant, the stock return will increase by 1.872. The liquidity coefficient value is 0.146, which means that there is an increase in 1 liquidity variable, the stock return (Y) will increase by 0.146. The leverage regression coefficient of 0.177 means that there is an addition of 1 leverage variable, then the stock return (Y) will increase by 0.177. The profitability regression coefficient of 0.334 means that there is an addition of 1 profitability variable, then the stock return (Y) will increase by 0.344.

The t-test (Table 4) shows that the liquidity variable has an at-count value of  $3.607 > t$ -table 1.672. Based on the mark above, its significance mark of the liquidity variable is 0.001. The results showed a significance of  $0.001 < 0.05$ , so  $H_0$  was rejected and accept  $H_1$ . The leverage variable has a value of  $2,029 > t$  table of 1,672. Based on the results, the significance value of the leverage variable is  $0.045 < 0.05$ , so  $H_0$  is rejected and accept  $H_2$ . The profitability variable has significant value  $5.636 > 1.672$ . Based on the results, the significance value of the profitability variable is  $0.000 < 0.05$ , so  $H_0$  is rejected and accept  $H_3$ .

Based on the F-test (Table 5), it was obtained that F arithmetic  $4.506 > F$  table 2.460 and a significance value of  $0.000 < 0.05$ , which shows a simultaneous influence. It means the independent variables, namely liquidity, leverage, and profitability simultaneously affect stock returns. The higher the power distribution, the better the company can meet its short-term financial obligations. The better the current liquidity ratio is reflected, the more liquid the company is and the better it can realize short-term opportunities. The better current liquidity ratio reflects more liquid the company is and the more short-term opportunities it can realize. This can increase the company's credibility from an investor's point of view and increase returns on the company's stock. When a company achieves optimal profits in its business, it facilitates its financing and vice versa. A study by Bataineh and Alrabadi (2017) investigated the effect of individual stock liquidity on the stock price return of a company. A survey of 4,444 companies listed on the Amman Stock Exchange between 2004 and 2014 showed a strong liquidity impact on stock returns. This is also supported by Kajola, Alao, Sanyaolu, and Ojurongbe (2019), which show that the current ratio affects stock return.

The larger the DER, the more debt is used relative to equity. This is to ensure that the firm has the ability to pay off all its debts. Financing through debt, financing through debt, allows a mining company's shareholders to maintain control over a company with limited investments, which in turn provides a greater return on debt-funded investments than interest payments and a higher return on equity (Samo & Murad, 2019). It gets higher. Funding in the company relies heavily on loans from banks. However, by making a loan the company will get a greater return from the loan process. This is because mining companies are generally large companies and can export the results abroad. This study is consistent with the study by Fajaria and Isnalita (2018), which states that leverage has a significant impact on equity returns. In addition, it is supported by a study by

Khan, Naz, Khan, Khan, & Ahmad (2013) that shows the impact of leverage on the stock returns of the textile sector of the Pakistan Stock Exchange. This study shows that corporate leverage and equity returns have an essential and positive relationship in Pakistan's textile sector.

Profitability is a company's performance analysis in generating profits. If the company's financial performance in generating profits improves, this indicates the attractiveness of an investor or potential investor to invest capital in the company. Stock prices tend to rise as demand for stocks increases. A high ROA will attract the attention of potential investors as it indicates that the company's management is using its assets effectively to generate profits (Kusumah & Yudhanto, 2020). Companies that can generate large profits tend to have higher stock prices, and investors can get higher returns. This study is complemented by study by Dwiantari and Artini (2021). According to a survey conducted in 2019, profitability has a significant influence on stock returns. In this study is supported by a study by Mahzura (2018) entitled "Impact of Profitability Ratio on Equity Earnings". The result is that the (ROA), a profitability metric, influences stock returns.

Liquidity is described as the ratio of current liquidity, leverage is described as the ratio of divisions to equity, and profitability is described as return on assets (ROA). The remaining 27% is influenced by other factors outside the model. Additionally, as a result of the F-test, it was found that explanatory variables such as liquidity, leverage, and profitability simultaneously affect stock price/return. These results as if with a previous case by Dwiantari and Artini (2021) that shows the simultaneously effect between debt, assets and profitability on stock returns.

## Implication and Conclusion

The results study are being used as input data for companies to pay attention to the liquidity level of companies through the liquidity ratio. To increase a company's value and return on its stock, a company must consider the level of liquidity. In addition, the company must be able to handle short-term debt, so that the debt ratio does not increase, which reduces the share price. It is equally important for a company to maintain profitability and assets to increase stock returns. Because the results of this study are used as reference data for investors, it is important to focus on stock price return before investing in companies. Investors may consider how liquidity variables, leverage, and profitability affect stock returns.

Profitability has an individually significant effect on stock return, then increasing return on assets which means the company's performance is getting better, then the company's stock return will also increase. Leverage has an individually significant effect on stock return. The greater value of DER ratio, the greater the company's burden on external parties in the form of principal and interest on loans. If the company's burden is lighter than before, the company's performance will increase and impact increasing the company's stock return (Jiang, Tian, Wu, & Mo, 2022; Kusumah & Yudhanto, 2020; Al Salamat & Mustafa, 2016). Liquidity has an individually significant effect on stock returns in the company. If the management can manage effectively the company's obligations and operational activities, so the level of company's liquidity ratio will be higher. If this happens, it will affect the stock return to increase.

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