

## The Influence of Financial Ratios and Firm Size on Stock Return

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### ABSTRACT

Researchers analyze financial ratio data using a quantitative approach to determine the effect on the company's stock return. Researchers formulated four research hypotheses. The data will be modeled using the Panel Data Regression method with the help of E-Views 12 Student software. With purposive sampling techniques, researchers will use stock closing price data and financial statements from 9 Properties and Real Estate companies listed on the Indonesia Stock Exchange (period 2018 to 2022). With the chow test and lagrange multiplier test, researchers will model the data using a common effect model. The results showed that the ROA of der, CR, and FS, either simultaneously or partially, did not have a significant effect on stock returns. Based on signal theory, capital owners will receive bad signals from the company because the variables ROA, DER, CR, FS are considered unable to influence the company's stock return.

Keywords: Current Ratio (CR), Debt to Equity Ratio (DER), Firm Size (FS), Return on Assets (ROA), and Stock return



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## INTRODUCTION

Stocks are one form of investment in the capital market. An investor can have rights to ownership of a company if he buys shares of the company. Investors who lend their capital to the company will receive profits from the company, both in the form of positive returns and negative returns (Romantica, 2014). Stock prices fluctuate every time because they are influenced by the demand and supply of capital owners for certain shares (Risyaldi et al., 2019). . This encourages capital owners to continue to monitor stock price movements in the capital market. Signal theory is a theory that explains certain information related to company finance. This information is both financial and nonfinancial. There are two signals that will be given to investors, namely good signals and bad signals. If the company gives a good signal, investors will make an offer for a company's stock at a high price. But on the contrary, if the company gives a bad signal, investors will refuse to buy the stock or bid it at a lower price than the previous period (Nurmawati et al., 2022). Stock return is the company's ability to provide company profits to capital owners.

The value of stock returns is also influenced by the high demand and supply of investors for certain stocks (Nurmawati et al., 2022). If investor demand for a particular stock is higher, then the current

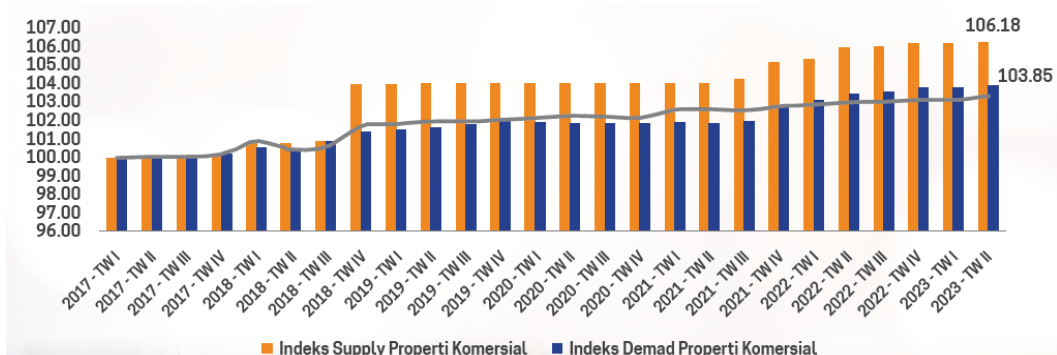
stock price will be higher than the stock price in the previous period (Halim, 2005). If the stock price of the current period rises higher, the difference in stock price will be even higher. As a result, the company is able to provide high returns to capital owners (Jalaludin & Romantica, 2023). An investor can forecast a company's returns by paying attention to certain factors. Researchers will analyze the company's financial ratios to determine the effect on the company's rate of return to capital owners.

According to (Pande & Sudjarni, 2011) and (Jalaludin et al., 2023), financial ratio is important information that investors can use in analyzing company finances, both short and long term. Based on the financial ratio (Kurniawan & Isynuwardhana, 2015), investors can also analyze the company's ability to pay dividends to investors. In this study, researchers will use four of the six types of financial ratio measures (Kurniawan & Isynuwardhana, 2015). Researchers will analyze the company's liquidity by looking for information related to the company's short-term liabilities on its current assets using liquidity ratios (Risyaldi et al., 2019). A healthy company is a company that has a current ratio of at least two because the company is considered to have total assets that are worth twice the amount of its current debt. Companies with a good current ratio have their own allure for capital owners because the company is considered capable of providing returns to capital owners.

Researchers will measure companies financed by their debt using leverage ratios. Leverage ratio analysis can be calculated based on the Debt to Equity Ratio, where researchers can analyze the amount of funds provided by capital owners or owned by the company itself (Kasmir, 2016, pp. 157–158). Companies with a high DER value give an idea to capital owners that the company has a greater total debt when compared to the total assets it has (Darajat, 2018). As a result, capital owners will assume that the company is at high risk because all company assets will be used by the company for company activities. The company will also be considered unable to make corresponding returns to capital owners, resulting in a decrease in the return of company shares. Researchers will measure the company's ability to generate company profitability by calculating return on assets. ROA is the ratio of a company's total revenue to its total assets (Anisa, 2015). Companies with a high ROA value illustrate good company performance because the company is considered capable of providing returns to capital owners so that it has an impact on increasing the company's stock return (Risyaldi et al., 2019).

Researchers will analyze the company's financial condition in the capital market by calculating the market value ratio. In fact, company management uses market value ratios when conducting operational activities in accordance with conditions in the market and analyzing the impact that will occur in the future. Based on the market value ratio, capital owners tend to invest their capital in large companies because they will assume that large companies have good profits and cash flow, also experience growth. Researchers use firm size to see the equity value of a company (Khoirunnisa, 2022). Researchers calculate firm size using the natural logarithm of total assets owned by the company (Halim, 2005).

The greater the assets owned by the company, the bigger the company. Capital owners will tend to invest their capital in companies with large total assets because the company is considered capable of managing its assets and providing returns to capital owners (Mayuni & Suarjaya, 2018). Data from Bank Indonesia (Irawanto et al., 2023) shows that the property and real estate sector tends to experience a rapid upward trend over the past five years, even though its stock price movement had contracted due to Covid-19 in 2020. This is illustrated in the graph below.

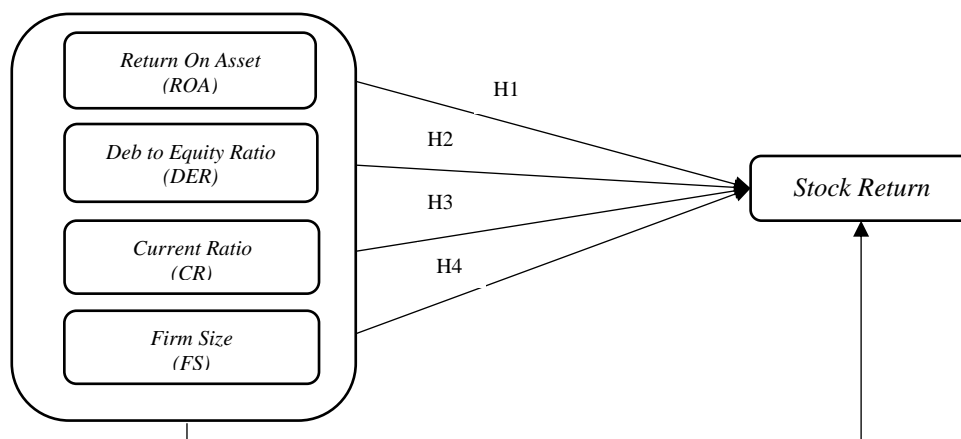


**Picture 1. Development of Commercial Property Supply & Demand Index**

Source: (Irawanto et al., 2023). White Paper Powered By Datanesia. Edisi 228, 28 September 2023. Gairah di Sektor Properti.

## METHODS

Researchers will use a quantitative approach. Researchers will use secondary data from various literature, as well as secondary data on the company's annual stock closing price from <https://finance.yahoo.com> sites and secondary data on the company's annual financial statements from <https://www.idx.co.id/> sites. Researchers used the study population in the form of all data of companies engaged in the property and real estate sector. With purposive sampling techniques, researchers will use stock closing price data and financial statements from 9 companies. Researchers set several criteria, including: (1) companies in the properties and real estate sector listed on the Indonesia Stock Exchange (IDX) for the 2018-2022 period; (2) closing prices of shares of Companies in the Properties & Real Estate sector for the period 2017-2022; (3) annual financial statements of Properties & Real Estate companies for the period 2018-2022; (4) companies with a positive ROA for the period 2018-2022. Researchers formulated four research hypotheses, where the data will be modeled using the Panel Data Regression method with the help of E-Views 12 Student software. Researchers will test hypotheses to get the best model. After the model is interpreted, the researcher will analyze the effect of the financial ratio on the company's stock return.



**Picture 2. Framework**

Source: (Anisa, 2015)

### Research Variables

Researchers will use one dependent variable and four independent variables, including:

1. The amount of stock returns can be calculated using the closing price at the end of the period, where the amount of stock returns is calculated using the formula (Romantica, 2014):

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

2. Return on Assets is a profitability ratio by measuring the company's ability to generate company profitability. (Anisa, 2015).

$$ROA = \frac{\text{earning available for common stockholders}}{\text{total assets}}$$

3. Debt to equity ratio is a ratio that measures measure the company financed by its debt (Desy, 2022).

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

4. Current ratio is a ratio that measures the company's liquidity by finding information related to the company's short-term liabilities on its current assets. (Redaksi, 2023)

$$CR = \frac{\text{Current assets}}{\text{Current liabilities}}$$

5. Firm size is a scale to determine the company's financial condition in the capital market. (Khoirunnisa, 2022).

$$FS = \ln(\text{total asset})$$

### Panel Data Regression

Researchers will model the data using the panel data regression method. Panel data regression is a development of linear regression with the Ordinary Least Square (OLS) method because panel data regression has specificity in terms of data types and data analysis objectives. There are several stages that researchers will do when modeling data, including regression model selection, classical assumption testing, model feasibility testing, model interpretation, and analyzing the cause-and-effect relationship of independent variables to dependent variables (Sakti, 2018).

### Regression Model Selection

The panel data regression model is expressed by the equation:

$$Y_t = \alpha + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \varepsilon$$

where:

$Y_{it}$  = dependent variable

$X_{it}$  = independent variables

$i$  = entity  $i$

$t$  = period  $t$

$\alpha$  = constant

$\varepsilon$  = error

When selecting a model, researchers will conduct three tests on panel data regression models, including:

1. The Chow test is a statistical test used by researchers to choose a fixed effect model or common effect model. In general, the Chow Test can be calculated using formulas:

$$F = \frac{\frac{SSE_1 - SSE_2}{n - 1}}{\frac{SSE_2}{nt - n - k}}$$

dimana:

$SSE_1$  : Sum Square Error of Common Effect Model

$SSE_2$  : Sum Square Error of Common Fixed Model

- $n$  : Number of companies (cross section)
  - $nt$  : Number of cross section  $\times$  number of time series
  - $k$  : Number of independent variables
2. The Hausman test is a statistical test used by researchers to select a fixed effect model or random effect model.
  3. The Lagrange Multiplier (LM) test is a statistical test used by researchers to select a random effect model or common effect model.

### Classical Assumption Testing

Once you get the best model, researchers will conduct two classical assumption tests, including:

1. Heteroscedasticity test. Researchers will conduct heteroscedasticity tests to see if the model has constant residuals or not. Researchers will analyze the model using the white method, both with cross terms and without cross terms.
2. Multicollinearity test. Researchers use more than one independent variable, researchers will analyze linear relationships between independent variables by conducting a multicollinearity test with a paired correlation method. With this method, researchers can analyze what independent variables have a strong correlation.

## RESULTS AND DISCUSSION

### Selection of Panel Data Regression Models

**Table 1. Panel Data Estimation Techniques**

Statistic Test	Prob (F-Statistic)	Model Terbaik
Chow Test	0,548204	Common Effect Model
Lagrange Multiplier Test	0,0574	Common Effect Model

Source: Data processed using EViews 12 Lite Student

First, researchers will conduct a chow test. The probability value (F-Statistic) is 0.548204 or greater than 0.05. That is, researchers will model the data with the Common Effect Model. Because the common effect model is selected, researchers will perform a lagrange multiplier test. The probability value (F-Statistic) is 0.0574 or greater than 0.05. That is, researchers will model the data with the Common Effect Model.

Second, researchers will only conduct two classical assumption tests, including heterokedasticity tests and multicollinearity tests.

### Classic Assumption Test

**Tabel 2. Heteroscedasticity Tests**

F-Statistic	1,385592	Prob. F(14,30)	0,2199
ObsR-Squared	17,67112	Prob. Chi-Square (14)	0,2222
Scaled Explained SS	50,88069	Prob. Chi-Square (14)	0,0000

Source: Data processed using EViews 12 Lite Student

Based on the heterokedasticity test with the White Method (the presence of cross terms), the probability value of chi squares obtained is 0.2222 or greater than 0.05. That is, the data model has a constant residual variance or homokedasticity.

**Table 3. Multicollinearity Test**

	ROA	DER	CR	FS
ROA	1,000000	-0,625804	-0,062484	-0,187553
DER	-0,625804	1,000000	-0,315677	0,469277
CR	-0,062484	-0,315677	1,000000	-0,276412
FS	-0,187553	0,469277	-0,276412	1,000000

Source: Data processed using EViews 12 Lite Student

Based on the multicollinearity test, the data model has a correlation value between independent variables of less than 0.85. That is, between variables in the panel data regression model there is no correlation or strong relationship.

### Model Feasibility Test

**Table 4. Common Effect Model Feasibility Test**

Weighted Statistic			
R-squared	0,071898	Mean Dependent Var	-0,050358
Ajusted R-Squared	-0,020912	S.D. Dependent Var	0,196363
S.E. od Regression	0,198406	Akaike Info Criterion	-0,292565
Sum Squared Resid	1,574595	Schwarz Criterion	-0,091825
Log likelihood	11,58271	Hannan-Quin Criter.	-0,217731
F-Statistic	0,774675	Durbin-Watson Stat.	2,639188
Prob.(F-Statistic)	0,548204		

Source: Data processed using EViews 12 Lite Student

Based on the feasibility test of the model, the R-squared value is 0.071898. Researchers concluded that the ability of the variables ROA, DER, CR, and FS is not strong to explain the effect on stock returns because the variation in the ability of the independent variable is very small (7.1898%). In addition, the p\_value value of the F-Statistic test is 0.548204. That is, the variables ROA, DER, CR, and FS in the regression model are not able to explain the stock return variables simultaneously. Even so, researchers will still model ROA, DER, CR, and FS variables into panel data regression models to analyze their effect on partial stock returns.

### The t Test Results (Partial)

**Table 5. Common Effect Model Test Results**

Variables	Koefisien	t-Statistic	Prob (F-Statistic)	Conclusion
C	0,821172	0,839912	0,4060	Not Significant
ROA	0,937942	-1,075948	0,2884	Not Significant
DER	0,025412	0,221829	0,8256	Not Significant
CR	-0,003466	0,219460	0,8274	Not Significant
FS	-0,030824	-0,934562	0,3556	Not Significant

Source: Data processed using EViews 12 Lite Student

Based on the results of the study, the data can be modeled using equations:

$$Y_t = 0,821172 + 0,937942 \cdot X_{1t} + 0,025412 \cdot X_{2t} - 0,003466 \cdot X_{3t} - 0,030824 \cdot X_{4t}$$

$Y_t$  = stock return variable

$X_{1t}$  = ROA variable

$X_{2t}$  = DER variable

$X_{3t}$  = CR variable

$X_{4t}$  = FS variable

$t$  = peiod

### Analysis of Independent Variables

The  $p\_value$  value in  $\alpha$  is 0.4060 and the regression coefficient value in  $\alpha$  is 0.821172. That is, the return value will be 0.821172 when all research independent variables are 0. However,  $\alpha$  in regression models are not significantly able to explain the return value.

### Analysis of ROA Variable

The  $p\_value$  value in  $\beta_1$  is 0.2884 and the regression coefficient value in  $\beta_1$  is 0.937942. That is, the return value will increase by 93.7942% for each ROA variable to increase by 1% (assume the variables DER, CR, FS are fixed). However, the ROA variable in the regression model is not significantly able to explain stock returns. In theory, the ROA value is only able to give an idea of the company's profitability in the short term. Even if the company has profits derived from the assets it has, they will develop their business lines and hope that the company will get a bigger profit (Purnama & Sari, 2022).

Unfortunately, company profits derived from assets are not profits (Nurmawati et al., 2022) that will actually be received by the company because the company will use all of its assets to carry out its activities so that ROA cannot be an analytical parameter in determining the value of the record. Therefore, capital owners will receive bad signals from companies so that they can take investment decisions appropriately.

### Analysis of DER Variable

The  $p\_value$  value in  $\beta_2$  is 0.8256 and the regression coefficient value in  $\beta_2$  is 0.025412. That is, the return value will increase by 2.5412% for each DER variable increases by 1% (assume the variables ROA, CR, FS are fixed). However, the DER variable in the regression model is not significantly able to explain the stock return. If the total debt is greater than the company's capital, the value of DER will be high. That is, the company has high liabilities. This puts the company in an unsafe position because the company is considered to be at great risk and unable to provide returns to capital owners (Nurmawati et al., 2022). Seeing this, capital owners are reluctant to invest their capital in the company. They are better off investing in companies with small DER (Kasmir, 2016).

### Analysis of CR Variable

The  $p\_value$  value in  $\beta_3$  is 0.8274 and the regression coefficient value in  $\beta_3$  is -0.030824. That is, the return value will decrease by 3.0824% for each FS variable increases by 1% (assume the variables ROA, DER, CR are fixed). However, the CR variable in the regression model is not significantly able to explain the stock return. Liquidity ratios provide a picture of the company's short-term outlook. If current assets are greater than current debt, the CR value will be high. This indicates that the company has high current assets so that the company will be considered unable to use its current assets efficiently (Nurmawati et al., 2022). Of course, the company will be considered not growing, the company's revenue has not increased or even decreased, the stock price has decreased, or the company's condition has not changed at all. Capital owners will choose other variables to determine the value of the retreat because the CR variable is considered unable to explain stock returns. Therefore, capital owners will receive bad signals from companies so that they can take investment decisions appropriately.

### Analysis of FS Variable

The  $p\_value$  value in  $\beta_4$  is 0.3556 and the regression coefficient value in  $\beta_4$  is -0.003466. That is, the return value will decrease by 0.3466% for each CR variable increases by 1% (assume the variables ROA, DER, FS are fixed). However, the CR variable in the regression model is not significantly able to explain the stock return. All companies are trying to develop their business lines in order to get greater profits (Darajat, 2018). However, not all business lines can develop and provide good profits, it could be the other way around. If the company's management does not pay attention to the development of each of its business lines, the company's profit will decrease so that the company cannot return funds to capital owners. Large companies have greater operational costs

when compared to small companies (Sindhuja, n.d.). This encourages capital owners to be more careful about investing in large-sized companies because they will consider the high operational costs of the company. If this has a bad impact, capital owners will receive bad signals from the company that the FS variable will not affect the value of return.

## CONCLUSION

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