The Effect of Liquidity, Leverage, and Profitability on the Return of Shares of Manufacturing Companies in the Basic Industrial and Chemical Sub-Sectors Listed on the IDX

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Abstract. This research was conducted to determine the influence of the current ratio, debt to equity ratio, and return on assets on stock returns in manufacturing companies in the basic and chemical industry sector listed on the Indonesia Stock Exchange. Data was taken from www.idx.co.id, covering the years 2014 to 2019, and the research was conducted in 2021. The population of this study consisted of 61 companies, with a sample of 39 companies. The research utilized quantitative data processed using the Eviews 9 application with a panel regression method. The test results concluded that only the return on assets variable partially has a significant impact on stock returns, while the current ratio and debt-to-equity ratio variables partially do not have a significant impact on stock returns. Simultaneously, the current ratio, debt to-equity ratio, and return on assets variables also do not significantly affect the stock returns of manufacturing companies in the basic and chemical industry sector. The contribution of the current ratio, debt-to-equity ratio, and return on assets variables to stock returns is only 1.20%, and the correlation level of these variables with stock returns is very weak.

Keywords: Current Ratio, Debt to Equity Ratio, Return on Assets, Return on Equity, Manufacturing.

INTRODUCTION

The capital market serves as a means to mobilize funds from the public to various sectors engaging in investments. An investor who buys shares in the capital market and sacrifices current consumption does so with the expectation that the investor will be able to consume more in the future. Investors invest their funds with the hope of gaining benefits such as ownership, capital gains (profits from buying and selling shares), or dividends. The rate of return is the ratio between investment income over several periods and the amount of funds invested.

Dividends are the distribution of net profits of a business entity to shareholders decided through a General Meeting of Shareholders. The number of dividends distributed depends on the size of the company's profits and dividend distribution policies. In determining the amount of dividends distributed to shareholders, companies establish a policy known as the dividend payout ratio, which is the percentage of net profits distributed. Capital gain/loss is the difference between the purchase and sale values of shares. Income from capital gain arises when the selling price of shares is higher than the purchase price, while capital loss occurs when the selling price is lower than the purchase price.

Analysis of a company's financial performance becomes an obligation for investors before making decisions on buying, selling, or holding stocks. Financial performance is one

fundamental aspect concerning the financial condition of a company and can be assessed through the analysis of financial ratios over a specific period. Financial ratios serve as instruments in analyzing a company's financial performance and can be indicators of its financial condition. Financial ratios can also be compared, serving as a basis for performance measurement and explaining various relationships in an accounting context.

A high company value motivates shareholders to increase wealth, leading to increased demand for stocks. Higher stock prices increase the company's stock value. Company performance is the level of achievement measured in terms of results. Performance depends on a combination of abilities, efforts, and opportunities that differ between companies. In other words, a company's performance can be demonstrated by the achievements it attains over a specific period, reflecting the company's health through its ability to generate profits. Financial ratio analysis, frequently used to assess the condition and financial performance of a company, is categorized into liquidity ratios, solvency ratios, profitability ratios, activity ratios, and market value ratios. Profitability can be seen through return on assets, liquidity through current ratio, and leverage through debt-to-equity ratio (Kasmir, 2014).

LITERATURE REVIEW

Financial Ratios

Financial ratios are analytical tools used to explain the relationship between one element and another in a financial statement. The financial statements in question are the balance sheet and the income statement. The balance sheet portrays the position of assets, liabilities, and equity held by the company at a specific point in time. The income statement reflects the results achieved by the company during a specific period.

According to Keown et al. (2010), financial ratios involve rewriting accounting data into a comparative form to indicate the strengths and weaknesses of a company's finances. Financial ratios aid in identifying various weaknesses and strengths in a company's financial position.

Stocks

Stocks can be defined as evidence of ownership in a company with a unit value or bookkeeping in various financial instruments. The issuance of stocks by a company allows it to raise capital when in need of long-term financing by selling ownership interests in exchange for cash, which can be used as capital by the company. Stock issuance is one of the main

methods for companies to raise business capital, along with issuing bonds (debt securities). Stocks are sold by companies through the primary market or secondary market.

Stocks are valuable documents indicating an individual's or entity's ownership in a company (Syahyunan, 2016). When capital is contributed to the company, and securities are issued, an individual or a group of people is declared as one of the owners of the company. Stocks are a popular security traded in the capital market (Tandelilin, 2017).

Current Ratio (CR)

According to Harahap (2018), the current ratio is a ratio used to measure a company's ability to pay short-term liabilities or debts that will mature immediately when demanded in full. The current ratio can also be seen as a measure of a company's safety margin. The current ratio is one of the ratios used to measure a company's liquidity.

(Halim, 2012) states that a company capable of meeting its financial obligations on time is considered liquid and has current assets greater than its current liabilities. This condition leads to a better bond rating for the company.

Debt to Equity Ratio (DER)

Leverage is the use of funds by a company that has fixed costs with the intention of increasing potential shareholder profits. (Sartono, 2016) states that leverage shows the proportion of debt used to finance investments. The leverage ratio used in this study is the debt-to-equity ratio. The debt-to-equity ratio indicates the proportion of debt used to finance investments relative to the equity and the extent to which debt is compared to equity can increase financial difficulty risks.

(Kasmir, 2018) explains that the debt-to-equity ratio is a ratio used to assess debt relative to equity. To calculate this ratio, all debts, including current debts, are compared with total equity.

Definition of Return on Assets (ROA)

Return on Assets (ROA) is a form of profitability ratio used to measure a company's ability to generate profits using its total assets and after deducting capital costs (costs used to fund assets) from the analysis.

Horne and Wachowicz (2015) explain that the larger the ROA, the more productive and effective a company is in using its assets to generate profit or gain. Increasing profits will also

enhance the return to investors, increasing the attractiveness for investors to invest in the company and consequently raising the company's stock price.

RESEARCH METHOD(S)

Research Approach

Based on its level of explanation, this research is an associative study. (Pakpahan & Manullang, 2014) explain that associative research or causal research (cause and effect relationship) is research that aims to examine whether a variable acting as an independent variable influences another variable that becomes the dependent variable.

Population and Sample

(Pakpahan & Manullang, 2014) explain that the population is a group of research elements, where the elements are the smallest units that serve as the source of the required data. The population describes the types and criteria of the population that are the objects of the research, while the sample describes the criteria for the sample, its size, and the sampling method. The population in this study consists of all manufacturing companies in the basic and chemical industry sector listed on the Indonesia Stock Exchange from 2014 to 2019. The total number of manufacturing companies in the basic and chemical industry sector listed on the Indonesia Stock Exchange from 2014 to 2019 is 61 companies.

According to (Sugiyono, 2016), a sample is a portion of the quantity and characteristics possessed by the population. If the population is large, and it is not feasible for the researcher to study all elements in the population, for example, due to limitations in funds, time, and energy, the researcher can use a sample taken from the population. The population eligible to be sampled consists of 39 companies, while the remaining 22 companies do not meet the criteria. Therefore, the sample includes 39 manufacturing companies in the basic and chemical industry sector listed on the Indonesia Stock Exchange.

Data Analysis Technique

Data analysis employs the panel data regression analysis technique using the Eviews 9 application. The method and technique of analysis include model specification tests, panel data regression analysis, and hypothesis testing.

FINDINGS AND DUSCUSSION

Chow Test

Chow Test is used to determine whether the most suitable model is the Common Effect Model (CEM) or the Fixed Effect Model (FEM). If the conclusion accepts the null hypothesis (Ho), then choose the Common Effect Model (CEM), and if the conclusion accepts the alternative hypothesis (H1), then choose the Fixed Effect Model (FEM). The results of the model testing using the Chow test data can be seen in the following table:

Table 1. Chow Test Result

Redundant Fixed Effects Tests Equation: Untitled Test cross-section fixed effects			
Effects Test	Statistic	d,f,	Prob,
Cross-section F	1,120956	(38,192)	0,3032
Cross-section Chi-square	46,886796	38	**0,1528**

Source: Results of Eviews Version 9 Analysis on Research Data (2021)

Based on Table 1, the statistical distribution values of the chi-square, calculated using Eviews 9, indicate that the probability of the Cross-section Chi-Square in the Chow test on the influence of Current Ratio (X1), Debt to Equity Ratio (X2), and Return on Assets (X3) on Stock Return (Y) is 0.1528. This value is greater than 0.05 or 5%, therefore, statistically, H1 is rejected, and H0 is accepted. Hence, the appropriate model to use is the Common Effect Model (CEM).

Hausman Test

The Hausman Test is utilized to determine whether the most suitable model is the Fixed Effect Model (FEM) or the Random Effect Model (REM). According to Irawan and Tuah (172:2017), if the Hausman Test accepts the null hypothesis (Ho), then choose the Random Effect Model (REM). If the Hausman Test rejects the null hypothesis (H1), then opt for the Fixed Effect Model (FEM). The results of the model testing using the Hausman Test on the data are as follows:

Table 2. Hausman Test Result

Correlated Random Effects - Hausman Test Equation: Untitled Test cross-section random effects			
Test Summary	Chi-Sq, Statistic	Chi-Sq, d,f,	Prob,
Cross-section random	4,312664	3	0,2296

Source: Results of Eviews Version 9 Analysis on Research Data (2021)

The results of the Hausman Test in Table 2 show a probability value of 0.2296. This outcome indicates that the probability value is greater than 0.05. Therefore, H0 is accepted, and H1 is rejected. Consequently, based on the Hausman Test, the appropriate model to use is the Random Effect Model (REM).

Summarizing the results of the Chow Test, Hausman Test, and Lagrange Multiplier Test, it can be concluded that the Chow Test and Lagrange Multiplier Test suggest that the appropriate model for panel data regression is the Common Effect Model (CEM). However, the Hausman Test suggests that the most suitable model for panel data regression is the Random Effect Model (REM). Therefore, in this study, the regression model used is the Common Effect Model (CEM) since two out of three tests indicate that the most suitable model is the Common Effect Model (CEM), namely the Chow Test and Lagrange Multiplier Test.

Regression Analysis of Panel Data

According to Rusiadi (2016:26), panel data analysis is a model that combines cross-sectional data with time series data. Cross-sectional data are obtained from a data source at one point in time or a one-time observation, while time series data are collected over time to illustrate the development of a phenomenon. The results of panel regression with the Common Effect Model (CEM) can be seen in the following table:

Table 3. Results of Panel Regression with Common Effect Model (CEM)

Variable	Coefficient	Std. Error
C	30,60824	11,16937
CR (X_1)	-0,039281	0,032632
DER (X_2)	0,028064	0,078923
ROA (X_3)	2,236064	0,987617

Source: Results of Data Processing with Eviews 9 (2021)

Based on the panel data processing using the Common Effect Model (CEM) approach in Table 3, the regression equation results are as follows:

$$RS (Y) = \alpha it + \beta 1 CRit + \beta 2 DERit + \beta 2 ROAit + \varepsilon it$$

$$RS (Y) = 30{,}60824 - 0{,}039281CRit + 0{,}028064DERit + 2{,}236064ROAit + \varepsilon it$$

Explanation of the panel data regression equation above can be interpreted as follows:

1. The constant term (α) of 30.60824 indicates that when all independent variables are considered zero or not present or not calculated, including Current Ratio (X1), Debt to Equity Ratio (X2), and Return on Assets (X3), the stock return value (Y) is already 30.60824.

2. The regression coefficient for the Current Ratio variable (X1) of -0.039281 indicates that if the Current Ratio increases by 1 unit, the stock return (Y) will decrease by 0.039281 units. This suggests that the current ratio hurts stock return. Therefore, an increase in the current ratio will decrease stock return, and conversely, a decrease in the current ratio will increase stock return.

3. The regression coefficient for the Debt-to-Equity Ratio variable (X2) of 0.028064 indicates that if the Debt-to-Equity Ratio increases by 1 unit, the stock return (Y) will increase by 0.028064 units. This suggests that debt to equity ratio has a positive impact on stock return. Therefore, an increase in debt-to-equity ratio will increase stock return, and conversely, a decrease in debt-to-equity ratio will decrease stock return.

4. The regression coefficient for the Return on Assets variable (X3) of 2.236064 indicates that if the Return on Assets increases by 1 unit, the stock return (Y) will increase by 2.236064 units. This suggests that return on assets has a positive impact on stock return. Therefore, as the return on assets increases, the stock return will also increase, and conversely, if the return on assets decreases, the stock return will decrease.

Hypothesis Testing

Hypothesis testing consists of the F-test (Simultaneous Test) to determine the overall significance of the influence of independent variables on the dependent variable simultaneously. Additionally, the t-test (Partial Test) is conducted to assess the individual significance of the influence of each independent variable on the dependent variable.

Partial Test (t-test)

The t-test (Partial Test) indicates the extent to which each independent variable affects the dependent variable individually or partially. This test is conducted with a significance level of 5%.

Table 4. Partial Test (t-test) Result

Variable	t-Statistic	Prob.
C	2,740374	0,0066
CR (X$_1$)	-1,203738	0,2299
DER (X$_2$)	0,355589	0,7225
ROA (X$_3$)	2,264100	0,0245

Source: Results of Data Processing with Eviews 9 (2021)

The critical t-value (t-table) for a panel regression model can be determined using a t-table or Microsoft Excel with the formula = tinv(0.05, df). The degrees of freedom (df) are calculated using the formula df = n – k, where n is the number of observational data points, and k is the number of variables. In this study, n is 234 (39 companies x 6 years), and k is 4 (number of independent and dependent variables), resulting in df = n – k = 234 – 4 = 230. By entering =tinv(0.05, 230) in Microsoft Excel, the critical t-value (t-tabel) is found to be 1.970. Decision-making based on the results of the t-test can be observed in the following discussion:

1. Effect of Current Ratio (X1) on Stock Returns (Y)

   The t-test results indicate that the t-value for the Current Ratio (X1) variable is -1.203738, with a critical t-value (t-table) of 1.970. It is observed that -t-tabel < t-count, specifically -1.970 < -1.203738, leading to the rejection of Ha and acceptance of Ho. The t-significant value for the Current Ratio (X1) variable is 0.2299, significantly greater than the significance threshold of 0.05. Therefore, Ha is rejected, and Ho is accepted. Consequently, the test results do not satisfy the conditions t-tabel > t-count and significance < 0.05. Hence, it can be concluded that there is no significant influence of the Current Ratio (X1) on Stock Returns (Y) individually.

2. Effect of Debt-to-Equity Ratio (X2) on Stock Returns (Y)

   The t-test results reveal that the t-value for the Debt-to-Equity Ratio (X2) variable is 0.355589, with a critical t-value (t-tabel) of 1.970. The t-count < t-tabel, leading to the rejection of Ho and acceptance of Ha. The t-significant value for the Debt-to-Equity Ratio (X2) variable is 0.7225, significantly greater than the significance threshold of

0.05. Consequently, Ha is rejected, and Ho is accepted. Therefore, the test results do not meet the criteria t-count > t-tabel and significance < 0.05. It can be concluded that there is no significant influence of the Debt-to-Equity Ratio (X2) on Stock Returns (Y) individually.

3. Effect of Return on Assets (X3) on Stock Returns (Y)

   The t-test results show that the t-value for the Return on Assets (X3) variable is 2.264100, with a critical t-value (t-tabel) of 1.970. The t-count > t-tabel, leading to the rejection of Ho and acceptance of Ha. The t-significant value for the Return on Assets (X3) variable is 0.0245, significantly smaller than the significance threshold of 0.05. Therefore, Ho is rejected, and Ha is accepted. Consequently, the test results satisfy the conditions t-count > t-tabel and significance < 0.05. It can be concluded that there is a significant influence of Return on Assets (X3) on Stock Returns (Y) individually.

Simultaneous Test (F-test)

The F-test (Simultaneous Test) is conducted to examine the overall influence of independent variables on the dependent variable simultaneously or collectively. The approach involves assessing the level of significance, where the benchmark for significance is typically set at 0.05 or 5%, and comparing the F-value (F-count) with the critical F-value (F-table).

Table 5. Simultaneous Test (F-test) Result

Weighted Statistics			
F-statistic	1,946122	Durbin-Watson stat	2,010009
Prob(F-statistic)	0,122926		

Source: Results of Data Processing with Eviews 9 (2021)

To make decisions using the comparison of the F-statistic (F-test) with the critical F-value (F-table), first, the critical F-value (F-table) needs to be determined. This can be done using the F-table or an application like Microsoft Excel with the formula =finv(0.05;df1;df2), where df1 = k – 1 and df2 = n – k. Here, n represents the total observational data (39 companies x 6 years), which is 234 data points, and k represents the total research variables, which is 4. df1 = k – 1 = 4 – 1 = 3. df2 = n – k = 234 – 4 = 230. In Microsoft Excel, entering =finv(0.05;3;230) will yield the critical F-value of 2.644.

The obtained F-test result from the table is 1.946122. This F-test value is significantly smaller than the critical F-value of 2.644. Therefore, the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted. Based on the calculated significance level, it is found that the significance level of the F-test is 0.122926, which is much larger than 0.05. Consequently, the null hypothesis is accepted, and the alternative hypothesis is rejected.

In conclusion, based on the F-test, it can be inferred that the regression model in this study, involving Current Ratio (X1), Debt to Equity Ratio (X2), and Return on Assets (X3), does not have a significant simultaneous effect on Stock Return (Y).

Determination Test (R2)

The determination test is employed to assess how well the model explains the dependent variable. Additionally, it can be used to evaluate the strength or tightness of the relationship between independent and dependent variables. When the coefficient of determination (R2) approaches one, it indicates that the influence of the independent variables on the dependent variable is substantial. This implies that the model used is more robust in explaining the impact of the examined independent variables on the dependent variable. The degree of influence of the Current Ratio (X1), Return on Assets (X2), and Debt to Equity Ratio (X3) on Stock Returns (Y) based on the determination test can be found in Table 6.

Table 6. Determination Test Result

Weighted Statistics			
R-squared	0,024756	Mean dependent var	26,85585
Adjusted R-squared	0,012035	S.D. dependent var	128,5768

Source: Results of Data Processing with Eviews 9 (2021)

From the determination test results, it is found that the adjusted R-square value obtained is 0.012035, which is referred to as the coefficient of determination. This indicates that 1.20% of stock returns can be obtained and explained by the Current Ratio, Debt to Equity Ratio, and Return on Assets. The remaining 98.8% can be explained by other factors or variables outside the model, such as company value, inflation, interest rates, and so forth.

The relationship between Current Ratio, Debt to Equity Ratio, Return on Assets, and Stock Returns can be observed from the R value obtained by taking the square root of the R-square value using MS Excel, represented by the formula =SQRT (0.024756). This yields an R value of 0.157. An R value of 0.157 indicates that the relationship between Current Ratio

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(X1), Debt to Equity Ratio (X2), Return on Assets (X3), and Stock Returns (Y) is very weak or very loose. This is because the R value falls within the range of 0.0 – 0.19. The larger the R value, the stronger the relationship between independent and dependent variables.

CONCLUSION AND RECOMMENDATION

1. For manufacturing companies in the basic and chemical industry sector, it is recommended to maintain an adequate cash reserve, not exceeding 150% of the total short-term obligations of the company. This is done to prevent excess idle cash, and the surplus funds could be better utilized to support activities or investments that generate short-term profits, thereby enhancing the company's profitability.

2. Manufacturing companies in the basic and chemical industry sector are advised to reduce their reliance on capital for various financing needs to support company activities. Increasing levels of debt can elevate the company's risk, which is unfavorable to investors and may lead to a decline in stock prices.

3. It is recommended for manufacturing companies in the basic and chemical industry sector to diversify their business activities through various company investment schemes to achieve greater profits. Boosting company sales can be accomplished by leveraging advertising on rapidly growing social media platforms.

4. Researchers are encouraged to further develop this study by replacing the independent variables used with variables such as company value, interest rates, and inflation. This would provide a deeper understanding of other factors influencing stock returns in manufacturing companies in the basic and chemical industry sector beyond the factors of current ratio, debt to equity ratio, and return on assets.

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