Ratio Analysis of Financials and Stock Price of Heavy Construction and Civil Engineering Companies

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ABSTRACT
The goal of this research is to assess the influence of financial ratios like Current Ratio, Total Asset Turnover, Debt to Equity Ratio, and Return on Equity on stock prices that are calculated using closing prices. Moreover, the data used for this study is taken from the financial statements of Heavy Construction and Civil Engineering Companies listed on the Indonesia Stock Exchange (IDX) within the time frame of 2017 to 2021. In the research project there are 23 Heavy Construction and Civil Engineering Companies involved. The selection process for the sample includes choosing 10 companies based on predetermined criteria using a purposive sampling method. Stock Price is considered as the dependent variable, while the independent variables consist of Current Ratio, Total Asset Turnover, Debt to Equity Ratio, and Return on Equity. The chosen data analysis method for this study is employing multiple linear regression. This approach encompasses conducting descriptive analysis as well as assessing classical assumptions. Moreover, it involves performing multiple linear regression analysis while using an F-test for evaluating the model fit alongside t-tests for testing hypotheses. Also, the determination coefficient is calculated in order to determine the percentage of influence exerted by the independent variables on the dependent variable.

Keywords: Current Ratio; Debt to Equity Ratio; Return on Equity; Stock Price; Total Asset Turnover

INTRODUCTION
The development of the capital market in Indonesia plays a crucial role in supporting the country’s economic growth. It serves as a platform for both domestic and foreign investors to invest their funds. By investing through the capital market, companies can access an alternative source of funding that offers variable capital costs, unlike bank loans that involve fixed interest payments. Investor confidence and a sense of security are essential for attracting funds into the capital market. To monitor the financial performance of investee companies, publicly listed companies publish financial reports, which are vital in shaping public perception and assessing the efficiency and effectiveness of their financial performance.

A company’s value is generally reflected by the stock price growth. An increase in stock price also followed by the rise of the company’s overall value. The stock price in the capital market is influenced by various factors, including the company's overall performance, future prospects, and profitability. Factors such as changes in stock prices, bank interest rates, and dividends paid to shareholders are also expected to have a significant impact. Additionally, the overall economic conditions can affect each of these factors.
Shares represent one of the assets traded in the capital market. The capital market serves as a mechanism for channeling funds from those with surplus funds to those in need of funds. The growth of the capital market in Indonesia can be driven by an increasing number of shares traded and higher trading volume, as highlighted by Richardson et al. (2012). With this development, there is a growing need for information to make informed investment decisions in the capital market.

Several factors influence stock prices, including corporate actions, fluctuations in the exchange rate, company performance projections, and interest rates (Subiyantoro & Andreani, 2003). Corporate actions refer to the policies adopted by a company, such as mergers, acquisitions, and rights issues. These policies automatically affect stock prices on the exchange. High or low fluctuations in the exchange rate against foreign currencies are significant factors influencing stock prices (Vinsensius et al., 2021). Such fluctuations can have positive or negative impacts, particularly for companies with foreign currency debt. Poor company performance projections lead to a decrease in stock prices, while good company quality triggers an increase in stock prices. Interest rates also have an influence on competition in the capital market. When interest rates rise, investors tend to sell their stocks and switch to bonds, resulting in lower interest rates, and vice versa.

The government has placed high emphasis on infrastructure development in Indonesia in recent years. In the year 2022, the state budget (APBN) has been allocated for several key infrastructure sectors, including basic services to support public housing, connectivity to facilitate inter-regional transportation through the construction of roads and bridges, renewable energy and electricity sector, and information technology sector by building signal transmission facilities for smooth telecommunications (Suryadi, 2022). A significant challenge in infrastructure development in Indonesia is funding, as the government's budget for infrastructure development accounts for 41 percent, state-owned enterprises contribute up to 22 percent, leaving 37 percent to be expected from the private sector (Indonesia Investments, 2017). This situation opens up opportunities for investors and prospective investors to invest in companies in the Heavy Construction and Civil Engineering sub-sectors listed on the Indonesia Stock Exchange.

Investors take into consideration the unique characteristics of the construction services industry, which involves lengthy processes and high risks, when deciding to invest in this sub-sector. When investing in long-term and capital-intensive projects, investors consider various factors, and one crucial aspect is the financial health of companies as reflected in their financial reports. Financial reports provide essential information for prospective investors to make informed investment decisions (Usin et al., 2022). By analyzing financial reports, investors can gain insights into predicting a company's financial difficulties, operational results, current financial conditions, and assess past and future performance. Financial ratio analysis plays a significant role in evaluating a company's financial performance and determining its level of financial health.

The study incorporates several financial ratios, in which factors like the Current Ratio, Debt to Equity Ratio, Total Asset Turnover, and Return on Equity are also included. The Current Ratio serves to indicate a company's liquidity, with a low ratio suggesting liquidity problems. Investors typically prefer stocks of companies with higher liquidity levels, and a low Current Ratio can lead to a decrease in a company's stock price. The Debt-to-Equity Ratio assesses the
ability of a company to repay debts using its capital. A high Debt to Equity Ratio often results in a decrease in stock prices, as companies tend to prioritize debt repayment over dividend distribution when generating profits (Andy et al., 2020). The Return on Equity Ratio measures the net profit generated from the capital invested by the company's owners. A higher Return on Equity indicates a higher return on investment for shareholders (Subiyantoro & Andreani, 2003). On the other hand, the Total Asset Turnover is an activity ratio that measures the effectiveness of asset utilization in generating company sales. A higher asset turnover reflects a more efficient company, which may have the ability to positively impact on the stock price of the company. Conducting financial ratio analysis allows for an assessment on the performance of certain company in comprehensive manner, thereby strengthening investor confidence in the capital market.

Given the aforementioned background, the objective of this study is to analyze the influence of financial ratios on stock prices in Heavy Construction and Civil Engineering companies. The study focuses on the population of Heavy Construction and Civil Engineering companies listed on the Indonesia Stock Exchange from 2017 to 2021.

**The Influence of Current Ratio (CR) on Stock Prices**
The current ratio indicates the measurement of the ability of a company in fulfilling its short-term obligations using its current assets. While the current ratio can influence a company's stock price, it is important to remember that it is not the sole determinant of stock prices (Sitanggang et al., 2022). A higher current ratio indicates a better ability to meet short-term obligations, suggesting that the company owns sufficient current assets to settle its short-term debts. This can inspire confidence in investors and creditors. However, it is essential to recognize that the current ratio is just one factor among many that can affect stock prices. Other factors include a company's financial performance, industry competition, macroeconomic conditions, government policies, and more. Previous studies have demonstrated that the current ratio can serve as a reliable indicator of a company's capacity to meet short-term obligations. Nonetheless, it is important to acknowledge that the current ratio alone cannot directly determine stock prices (Handayani et al., 2021). When investing in stocks, it is crucial to adopt a comprehensive approach that takes into account multiple factors to achieve optimal results.

H1: Current Ratio (CR) has an influence on stock prices.

**The Influence of Debt-to-Equity Ratio (DER) on Stock Prices**
The Debt-to-Equity Ratio (DER) is a financial metric that compares a company's reliance on external funds (debt) to funds contributed by its owners (equity). Achieving an optimal Debt to Equity Ratio involves finding the right balance between debt and equity sources of funding. The objective is to minimize financial risk and maximize the company's value (Khasanah & Suwarti, 2022). Effective management of debt is crucial to achieving this goal. This includes selecting loans with favorable interest rates and terms, ensuring ease of debt repayment without straining the company's financial position. Additionally, companies should strive for consistent profitability, stability, and growth, optimize the utilization of funds, and consider issuing new shares or conducting rights issues to acquire additional equity and reduce the DER. Therefore, optimizing the DER can impact a company's stock price. Generally, a higher DER indicates greater financial risk for a company. This is because higher debt levels result in increased interest payments, which can adversely affect profitability and the company's stock price.
price. While DER is not the sole determinant of stock prices, previous research has shown its significant influence (Anwar, 2021). When making decisions regarding the DER, companies should consider various factors such as financial risk, profitability, company growth, and market conditions. Finding the right balance between debt and equity is crucial to achieving an optimal DER.

H2: Debt to Equity Ratio (DER) has an influence on stock prices.

The Influence of Total Asset Turnover (TATO) on Stock Prices

Total Asset Turnover (TATO) is a financial ratio that evaluates how a company utilizes its assets in generating sales efficiently. The TATO ratio serves the role as an influence on a company's stock price as it provides insights into the effectiveness of company in generating revenue from its assets. When a company achieves a higher TATO, it signifies that it is utilizing its assets more efficiently to generate revenue (Nadella & Nugroho, 2022). This efficiency can send a positive signal to investors, indicating that the company has the potential to generate greater profits with its existing asset base. Consequently, this can enhance investor confidence in the company's long-term prospects and have a favorable impact on stock prices. In the realm of stock investments, investors typically seek out companies that efficiently employ their assets and consistently generate revenue, underscoring the significance of considering the TATO ratio for investors. A higher TATO indicates that a company can generate increased revenue utilizing its assets, thus enhancing its attractiveness to investors. Ultimately, the TATO ratio serves as an important factor for investors evaluating a company's stock.

H3: Total Asset Turnover (TATO) has an influence on stock prices.

The Influence of Return on Equity (ROE) on Stock Prices

Return on Equity (ROE) is a financial metric utilized to assess the effectiveness of a company in generating profits based on the capital invested by its shareholders. The impact of ROE on stock prices can be significant as it serves as an indicator of the company's ability to generate satisfactory profits for its shareholders. Several studies have consistently demonstrated a positive relationship between ROE and stock prices. For instance, a study conducted by Ko et al. (2007) discovered a significant positive influence of ROE on stock prices in the Korean stock market. Similarly, Ali et al. (2018) found in their study that ROE significantly affects stock prices in the Pakistani stock market. Moreover, ROE also provides insights into the anticipated long-term returns for shareholders. Companies exhibiting high ROE tend to generate greater and sustainable profits over time, thus fostering investor confidence. Consequently, investor confidence can have a subsequent impact on stock prices. Based on the aforementioned information, we can formulate the hypothesis

H4: Return on Equity (ROE) has an influence on stock prices.

METHOD

The chosen research methodology for this study is quantitative in nature. The data utilized in this research is secondary data obtained from the official website of the Indonesia Stock Exchange (www.idx.co.id) through the documentation method. The population for this study comprises Heavy Construction and Civil Engineering companies listed on the Indonesia Stock
Exchange (IDX). The sample selection was based on certain criteria, including the availability of complete financial reports from 2017 to 2021, being a company with stock instruments, and generating positive profits during the observation period. Out of the 23 listed companies, 10 companies met the specified criteria, resulting in a total of 50 observations over a 5-year period. The initial step involved analyzing the financial statements to determine the values of the independent variables, specifically the liquidity ratios and solvency ratios.

**Liquidity Ratios**
Liquidity ratios are used to assess a company's ability to meet short-term obligations without encountering financial difficulties. The Current Ratio is employed to measure liquidity.

**Current Ratio**
The Current Ratio is used as an indicator of how well a company can cover its short-term liabilities with available short-term assets. To calculate it one needs to divide the company's current assets by its current liabilities. This is the formula used to calculate the Current Ratio:

\[
\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}
\]

The current assets typically include cash, accounts receivable, inventory, and other assets expected to be converted into cash within one year. On the other hand, current liabilities encompass accounts payable, short-term debts, and other obligations due within one year.

**Quick Ratio**
The acid-test ratio or the Quick Ratio is a financial ratio that measures how well a company can cover short-term obligations with its most liquid assets. By excluding inventory from current assets, it is considered a more stringent measure of liquidity compared to the Current Ratio. The calculation of the Quick Ratio involves dividing a company's cash holdings, marketable securities, and accounts receivable by its current liabilities. To compute the Quick Ratio, follow this formula:

\[
\text{Quick Ratio} = \frac{\text{Cash} + \text{Cash Equivalents} + \text{Marketable Securities} + \text{Accounts Receivable}}{\text{Current Liabilities}}
\]

The Quick Ratio focuses on assets that can be readily converted into cash or used to settle current liabilities immediately, excluding inventory due to its potential difficulties in converting to cash in the short term.

**Solvency Ratios**
Solvency ratios are employed to assess a company's ability to meet its long-term debt obligations. They provide insights into the proportion of a company's assets financed by debt, indicating its financial stability. The Debt to Asset Ratio and Debt to Equity Ratio are commonly used solvency ratios.

**Debt to Asset Ratio**
The Debt to Asset Ratio is a financial metric that quantifies how much of a company's total assets are covered by debt and it calculates the amount of dependency of a company on debt for financing its operations and investments. This formula below is used to calculate the Debt to Asset Ratio:

\[
\text{Debt to Asset Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}
\]
Total Debt refers to the company’s overall liabilities or long-term debt, which encompasses both short-term and long-term debt obligations.

**Debt to Equity Ratio**
When calculating the Debt-to-Equity Ratio, we measure the proportion of a company’s total debt to its shareholders’ equity, which gives an indication of the extent to which a company is funded by debt in comparison to its own capital or equity. A formula exists to calculate the Debt-to-Equity Ratio:

\[
\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Shareholders' Equity}}
\]

Total Debt refers to the company’s total liabilities, encompassing both short-term and long-term debt obligations.

**Activity Ratios**
Activity ratios, also known as efficiency ratios or asset management ratios, are financial ratios that measure how effectively a company uses its assets to generate sales and revenue.

**Profitability Ratio**
One way financial analysts gauge a company’s profit-generating capability is through the use of profitability ratios which consider factors such as sales volume and asset value. These ratios give valuable insights into the overall profitability of a company and its potential to generate returns for its investors. Return on Investment (ROI) and Return on Equity (ROE), which are two commonly used profitability ratios.

The return on an investment made in the company is measured by ROI and the calculation is done to determine the percentage of return for each dollar invested. The way to compute ROI is:

\[
\text{ROI} = \frac{\text{Net Profit}}{\text{Investment}} \times 100
\]

ROE measures the company’s capability to generate returns for its shareholders and it represents the percentage of net income generated for every dollar of average shareholders’ equity. The calculation for ROE is as follows:

\[
\text{ROE} = \frac{\text{Net Income}}{\text{Average Shareholders' Equity}}
\]

Once calculating the financial ratios has been completed, it is important to conduct multiple regression analysis in order to understand how they are related or influenced by each other. The equation used for the regression analysis model is:

\[
Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e
\]

Note:
- \( Y \): Stock Price
- \( a \): Constant
- \( b_1, b_2, b_3, b_4 \): Regression coefficients (numbers indicating the magnitude of the influence of independent variables on the dependent variable)
- \( e \): Error term
By analyzing the regression equation, we can understand the relationships and significance of the financial ratios (independent variables) in influencing the stock price (dependent variable).

RESULT AND ANALYSIS

Descriptive Statistics
Descriptive statistics in Table 1 reveal important information about the minimum and maximum values of both the dependent and independent variables as well as their mean and standard deviation, summarizing and presenting key characteristics of the data can be effectively done using descriptive statistics.

Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>50</td>
<td>.951200134</td>
<td>5.48460374</td>
<td>1.79494074</td>
<td>.901588161</td>
</tr>
<tr>
<td>TATO</td>
<td>50</td>
<td>242792239</td>
<td>1.27440454</td>
<td>.639541589</td>
<td>.264506521</td>
</tr>
<tr>
<td>DER</td>
<td>50</td>
<td>141867500</td>
<td>6.12529062</td>
<td>1.89762952</td>
<td>1.44126745</td>
</tr>
<tr>
<td>ROE</td>
<td>50</td>
<td>0.004321509</td>
<td>7.42535189</td>
<td>1.26814815</td>
<td>1.19854654</td>
</tr>
<tr>
<td>Stock Price</td>
<td>50</td>
<td>174</td>
<td>861.28</td>
<td>639.120</td>
<td></td>
</tr>
</tbody>
</table>

Source: Data Processed by Author (2022)

Hypothesis Test Results
F statistical test, this test aims to determine whether each independent or independent variable simultaneously affects the dependent variable or independent variable. The results of the F statistical test are shown in table 2.

Table 2. F-Test

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>13736544.998</td>
<td>4</td>
<td>3434136.250</td>
<td>24.613</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>6278699.082</td>
<td>45</td>
<td>139526.646</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>20015244.080</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data Processed by Author (2022)

Based on the findings presented in Table 2, it is evident that the model test results in a computed F value of 24.613, indicating a high level of significance with a value of 0.000. Since the significance level is below 0.05, it can be inferred that the current ratio (CR), total asset turnover (TATO), debt to equity ratio (DER), and return on equity (ROE) collectively exert a positive and statistically significant influence on stock prices in Heavy Construction and Civil Engineering companies listed on the IDX during the period of 2017-2021. Thus, the statistical evidence supports the hypothesis.

Furthermore, a t-test is conducted to examine the individual impact of each independent variable on the dependent variable. The following equation is employed for this analysis:

\[ Y = 261.089 + 372.089CR + 400.983TATO + 265.472DER + 4011.868ROE + \varepsilon \]

Table 3. F-Test

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
</table>

Source: Data Processed by Author (2022)
Based on the findings presented in Table 3, which represents the partial testing of the CR, TATO, DER, and ROE variables, it was observed that the significant values for CR, DER, and ROE were less than or equal to 0.05, indicating that the hypothesis related to these variables is accepted. However, for the TATO variable, the significant value was greater than 0.05, leading to the rejection of the hypothesis associated with it.

**Effect of Current Ratio (CR) on stock prices**
The results of hypothesis testing revealed a β coefficient of 372.594 with a significant value of 0.001, indicating a positive and significant effect of the Current Ratio on stock prices. The Current Ratio, which measures the ratio of current assets to current liabilities, is considered crucial by investors as it reflects a company’s ability to cover short-term obligations. A higher Current Ratio signifies a stronger capacity to pay off debts, which can increase investor interest and contribute to an increase in stock prices. These findings differ from previous research conducted by Andy et al. (2020), Nadella & Nugroho (2022), and Panjaitan et al. (2022), which may be attributed to differences in sample characteristics or varying market conditions.

**Effect of Total Asset Turnover (TATO) on stock prices**
The results of hypothesis testing indicated a β coefficient of 400.983 with a significant value of 0.206, which is greater than the predefined significance level of 0.05. This suggests that TATO does not have a significant effect on stock prices in Heavy Construction and Civil Engineering companies. The positive coefficient value implies that an increase in total asset turnover would correspond to an increase in stock prices, but the inconsistent value of assets used by companies for development activities leads to instability. Aging assets and depreciation can influence the activity ratio, potentially resulting in a decrease in stock prices. These findings align with the research conducted by Khasanah & Suwarti (2022) and differ from the findings of Nadella & Nugroho (2022).

**Effect of Debt-to-Equity Ratio (DER) on stock prices**
The results of hypothesis testing revealed a β coefficient of 265.472 with a significant value of 0.000, indicating a positive and significant effect of the Debt-to-Equity Ratio on stock prices. A higher DER suggests a greater utilization of debt in the company’s capital structure compared to equity. This indicates the company’s ability to manage risks and enhance its capacity, leading to an increase in stock prices. These findings are consistent with the research conducted by Anwar (2021) and differ from the findings of Sitanggang et al. (2022).

**Effect of Return on Equity (ROE) on stock prices**
The results of hypothesis testing indicated a β coefficient of 4011.868 with a significant value of 0.000, indicating a positive and significant effect of Return on Equity on stock prices in Heavy Construction and Civil Engineering companies. The positive coefficient value suggests
that an increase in Return on Equity leads to an increase in stock prices. These findings align with the research conducted by Andy et al. (2020).

The Coefficient of Determination (R2) test evaluates the extent to which the model can explain the impact of the independent variable on the dependent variable. A low value of R2 indicates that the independent variables have limited capacity to explain the variation in the dependent variable. Conversely, a value close to one suggests that the independent variables provide nearly all the necessary information to predict the changes in the dependent variable.

From table 4 above, it can be observed that the Adjusted R2 value is 0.596 or 60%. This indicates that approximately 60% of the variation in stock prices is influenced by the four independent variables used in this study, namely Current Ratio (CR), Total Asset Turnover (TATO), Debt to Equity (DER), and Return on Equity (ROE). However, it is important to note that there are other factors beyond this research model that also impact stock prices, accounting for 40% of the variation. Factors such as overall market conditions, government policies, industry trends, and global events also hold significant influence on stock price movements. Therefore, while the examined variables contribute significantly, there are other factors that need to be considered for a more comprehensive analysis and prediction of stock prices.

**CONCLUSION**

The study findings indicate that the Current Ratio (CR) variable has a positive and significant impact on stock prices. This suggests that a higher ratio of current assets to current liabilities reflects the company’s stronger ability to meet short-term obligations. When a company is perceived as capable of fulfilling its short-term debt, it is regarded as financially healthy, which can attract investors and potentially drive-up stock prices. On the other hand, the Total Asset Turnover (TATO) variable does not have a significant effect on stock prices. This implies that while TATO measures the efficiency of assets in generating sales, it may not directly translate into increased profits if a portion of the earnings is allocated to debt repayment. Therefore, investors need to consider additional ratios when predicting stock prices. The Debt-to-Equity Ratio (DER) demonstrates a positive and significant influence on stock prices. A higher DER indicates that the company utilizes more debt compared to equity in its capital structure, effectively managing risks and expanding capacity, ultimately leading to an increase in stock prices. Similarly, Return on Equity (ROE) exhibits a positive and significant impact on stock prices. This variable is influential as it reflects investors’ perception of the company’s ability to generate profits based on the invested capital. A rising net profit indicates effective equity management, resulting in a higher ROE, which serves as a positive signal for investors and subsequently impacts stock prices.
It is important to note that this research was conducted until early 2023 but faced limitations in obtaining complete data for the samples, restricted to financial statements until December 31, 2022. Therefore, the data used only covers the period until 2021. Additionally, this study focuses on specific ratios such as the current ratio, TATO, DER, and ROE. For future researchers, there is potential to explore other liquidity ratios such as the quick ratio and further expand the discussion by incorporating profitability measures like ROI and ROA to enhance the analysis.

REFERENCES


