

Mediating Role of Profitability Relating Financial Leverage and Stock Returns: Empirical Study of Telecommunication Companies Listed on IDX 2021-2023

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Abstrak

This study analyzes the role of profitability mediation in the relationship between financial leverage and stock returns in telecommunication companies listed on the Indonesia Stock Exchange (IDX) for the 2021-2023 period. The independent variables used are debt to equity ratio and debt to assets ratio, with return on assets as the mediating variable, and stock return as the dependent variable. Using path analysis, the results show that DER and DAR have a significant influence on stock returns, with DAR showing a stronger influence. ROA has proven to play an effective role as a mediator in the relationship. The direct influence of DER on stock returns is 0.851 ($p=0.015$), while DAR shows a direct influence of 1.098 ($p=0.003$). The total influence, including the ROA mediating effect, was 0.388 for DER and 0.537 for DAR. These findings highlight the importance of considering both leverage and profitability ratios in the analysis of investment and financial management of telecommunications companies in Indonesia

Keyword: Financial Leverage, Profitability, Stock Return, Telecommunication Company

1. INTRODUCTION

Capital markets play a crucial role in the modern economy, being a means for companies to obtain capital and for investors to invest (Jiang et al., 2020). In this context, stock returns are an important indicator for investors in evaluating their investment performance. The telecommunications sector, as one of the vital sectors in the digital era, has attracted special attention from investors and financial analysts.

Financial leverage, which reflects a company's capital structure, has long been the focus of research in relation to company performance and stock returns. Debt to equity ratio (DER) and debt to assets ratio (DAR) are two common indicators used to measure a company's leverage level (Li et al., 2021). Meanwhile, profitability, which is often measured by return on assets (ROA), is also considered a key factor influencing stock returns (Wang & Zhu, 2022).

Although many studies have been conducted on the relationship between financial leverage, profitability, and stock returns, there are still inconsistencies in previous findings. Some studies found a positive relationship between leverage and stock returns (Chen & Zhao, 2020), while others found a negative relationship (Kumar & Sharma, 2021). In addition, the role of profitability mediation in this relationship is still not fully understood, especially in the context of the telecommunications industry in developing countries such as Indonesia.

The Research objective are: (1) to analyze the effect of debt to equity ratio (DER) on stock returns in telecommunications companies listed on IDX for the 2021-2023 period; (2) to analyze the effect of debt to assets ratio (DAR) on stock returns in telecommunications companies listed on IDX for the 2021-2023 period; (3) Examining the role of return on assets (ROA) mediation in the relationship between financial leverage and stock returns in telecommunications companies listed on the IDX for the 2021-2023 period.

2. RESEARCH METHOD

2.1 Trade-off Theory

The static trade-off theory, proposed by Jensen and Meckling in 1976, posits that a company's optimal capital structure involves a careful balance. It aims to weigh the costs associated with financial distress against the benefits gained from the tax shield effect of debt. The theory advocates for an optimal mix of debt and equity to minimize the costs of financial distress while maximizing the benefits derived from the tax shield. Banda and Rooley (2016) conducted research on corporate financing decisions in Sri Lanka, yielding mixed results that support the trade-off concept. Their findings suggest that the ideal balance between debt and equity is influenced by the specific environment and context, with no universal formula applicable across different countries, particularly between developed and developing nations like Sri Lanka. When relating this to the mediating role of profitability in the relationship between financial leverage and stock returns, the trade-off theory becomes crucial. Profitability can influence how effectively a company manages its leverage, which in turn affects stock returns. A profitable company may be better positioned to handle the costs of financial distress, thereby optimizing its capital structure to enhance returns. This dynamic highlights the importance of considering profitability as a mediator in the trade-off between debt and equity

2.2 Financial Leverage

Financial leverage refers to the use of borrowed funds to increase potential *returns* for shareholders (Jiang et al., 2020). *Debt to equity ratio* and *debt to assets ratio* are two common indicators used to measure a company's leverage level (Li et al., 2021).

2.3 Profitability

Profitability is the ability of a company to generate profits. *Return on assets* is one of the frequently used profitability ratios, measuring the efficiency of a company in using its assets to generate profits (Wang & Zhu, 2022).

2.4 Stock Return

Stock return is the rate of return that investors get from stock investments. In this study, stock returns are measured using the capital gain indicator, which is the difference between the selling price and the buying price of the stock (Kumar & Sharma, 2021).

2.5 Research Method

This study uses a quantitative approach with a *path analysis* method. The population of this study is all telecommunication companies listed on the Indonesia Stock Exchange (IDX) for the 2021-2023 period. Samples were selected using *the purposive sampling* method. The data used is secondary data obtained from the company's financial statements and stock price data available on IDX. Data analysis uses *the path analysis method* to test the role of profitability mediation in the relationship between *financial leverage* and *stock returns*.

3. RESULT AND DISCUSSION

3.1 Descriptive Analysis

In this study, descriptive statistics are used to obtain a general picture of the company from the data that has been collected. Descriptive statistics in this study explain the maximum value, minimum value, average, and standard deviation of each variable used in the study. The following are the results of the descriptive statistical test shown in the table below:

Table 1 Descriptive Statistical Test Results

	N	Minimum	Maximum	Mean	Std. Deviation
Debt to Equity Ratio	33	-.08	4.48	1.4700	1.33235
Debt to Assets Ratio	33	-.08	.84	.4633	.27369
Return on Assets	33	-.05	.12	.0388	.04176
Stock Return	33	.01	1.21	.2331	.26660
Valid N (listwise)	33				

Source: Data processing (2023)

Based on Table 1 above, it can be seen that N or the number of data in each variable is 33. This number comes from the 12 companies sampled in this study, namely telecommunication companies listed on the Indonesia Stock Exchange in 2021-2023. Here's the table interpretation:

1. *The debt to equity ratio* has a minimum value of -0.08 and a maximum value of 4.48. These results show that the value of *the debt to equity ratio* of telecommunication companies listed on the Indonesia Stock Exchange sampled in this study ranges from -0.08 to 4.48 with an average value of 1.47 with a standard deviation of 1.33235. *The highest debt to equity ratio* occurred in TOWR companies, namely in 2021, while the lowest *debt to equity ratio* value occurred in OASA companies, namely in 2021.
2. *The debt to assets ratio* has a minimum value of -0.08 and a maximum value of 0.84. The results show that the value of *the debt to assets ratio* of telecommunication companies listed on the Indonesia Stock Exchange that are sampled in this study ranges from -0.08 to 0.84 with an average value of 0.4633 with a standard deviation of 0.27369. *The highest debt to assets ratio* occurred in TOWR companies, namely in 2021, while the lowest *debt to assets ratio* value occurred in OASA companies, namely in 2021.
3. *Return on assets* has a minimum value of -0.05 and a maximum value of 0.12. The results show that the value of *return on assets* of telecommunication companies listed on the Indonesia Stock Exchange sampled in this study ranges from -0.05 to 0.12 with an average value of 0.0388 with a standard deviation of 0.04176. The highest *return on assets* occurred for TLKM companies, namely in 2021, while the lowest *return on assets* value occurred for LCKM companies, namely in 2023.
4. *Stock returns* have a minimum value of 0.01 and a maximum value of 1.21. The results show that the stock *return* value of telecommunication companies listed on the Indonesia Stock Exchange sampled in this study ranges from 0.01 to 1.21 with an average value of 0.2331 with a standard deviation of 0.26660. *The highest stock return* occurred in OASA companies, namely in 2021, while the lowest *stock return* value occurred in GOLD companies, namely in 2022.

3.2 Normality Test

According to Ghozali (2018), the normality test is carried out to test whether in a regression model, an independent variable and a dependent variable or both have a normal or abnormal distribution by looking at the normal *probability plot* can be seen in the following Figure 1:

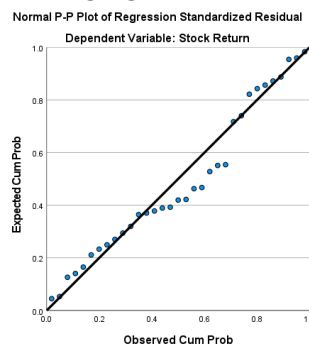


Figure 1 P-P Plot Chart

Based on Figure 1 P-Plot, it shows that the data has been distributed normally because the distribution of the residual data follows the direction of the diagonal line (normal line).

3.3 Multicollinearity Test

The multicollinearity test aims to find out whether the regression model finds a correlation between independent variables or independent variables (Ghozali, 2018). To find out whether or not there is multicollinearity in the regression model, it can be known from the tolerance value and the variance inflation factor (VIF) value.

Table 2. Multicollinearity Test Result
Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Mr.	Tolerance	BRIGHT
1 (Constant)	.598	.073		8.227	.000		
Debt to Equity Ratio	.170	.066	.851	2.579	.015	.128	7.812
Debt to Assets Ratio	-1.070	.325	-1.098	-3.296	.003	.125	7.971
Return on Assets	-3.089	.818	-.484	-3.778	.001	.849	1.177

a. Dependent Variable: Stock Return

The basis for making decisions for this test is if the *variance influence factor* (VIF) and *tolerance* values, if the VIF exceeds 10 or *the tolerance* is less than 0.10, then multicollinearity symptoms are declared, on the other hand, if the VIF is less than 10 or *tolerance* is more than 0.10, it is declared that multicollinearity symptoms do not occur. Based on Table 2 above, it can be seen that each VIF value is below 10, and the *tolerance value* is above 0.10, so it can be ascertained that the data from the independent variables does not occur multicollinearity.

3.4 Heteroscedasticity Test

The heteroscedasticity test aims to test whether there is an inequality of *variance* from one observation to another in the model. If the residual *variance* of one to another observation is different then it is called heteroscedasticity. The basis for heteroscedasticity decision-making if there is a certain pattern, such as the existing points forming a certain pattern regularly, then it indicates that heteroscedasticity has occurred.

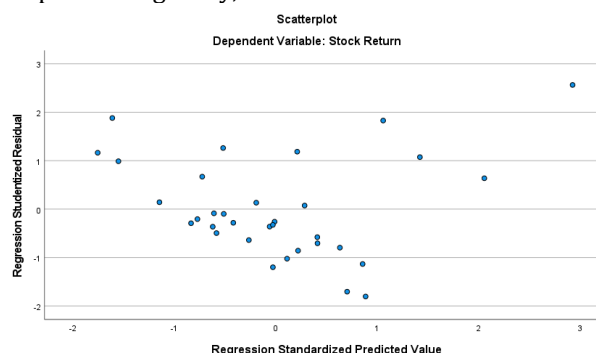


Figure 2. Heteroscedasticity Test Results

From Figure 2 it can be seen that the dots are spread randomly, not forming a pattern. and the points spread both above and below zero on the Y-axis. It can be concluded that there is no heteroscedasticity in the regression model, so the regression model is feasible for the next analyst.

3.5 Path Analysis

Path analysis is a further part of regression analysis. If in regression analysis it is usually used to test whether there is a direct influence exerted by an independent variable on a specified variable. Meanwhile, path analysis not only tests the direct influence, but also explains whether or not there is a direct influence exerted by the variables given through free intervention. Testing this path uses the Statistical Product and Service Solution (SPSS) program version 27.

3.5.1 Structural Path Analysis I

To find out the analysis of structural pathways I answering the objectives of all pathways was carried out by testing the *Statistical Product and Service Solution* (SPSS). To find out all the amounts of contributions and the amount between the values of the path analysis coefficient on the variables *debt to equity ratio* (X1), and *debt to assets ratio* (X2) to *return on assets* (M), it is sought and differentiated through several specific parts, including the following:

Table 3. Results of DER and DAR Path Analysis on ROA

ANOVA					
Model		Sum of Squares	df	Mean Square	F
1	Regression	0.008	2	0.004	9.886
	Residual	0.047	30	0.002	
	Total	0.056	32		

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Debt to Assets Ratio, Debt to Equity Ratio

Based on Table 3 above, the results of testing this hypothesis can be seen simultaneously between the variables *debt to equity ratio* (X1) and *debt to assets ratio* (X2) to *return on assets* (M) showing that $F_{\text{calculates}} 9.886 > F_{\text{table}} 3.28$ with a significant value of $0.036 < 0.05$, then the variables *debt to equity ratio* (X1) and *debt to assets ratio* (X2) simultaneously affects the *return on assets* (M). To find out whether the results of the *debt to equity ratio* (X1) and *debt to assets ratio* (X2) variables have a partial effect or not on *return on assets* (M), it can be seen from table 4 as follows:

Table 4 Results of DER and DAR Path Analysis on ROA

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Mr.
(Constant)	0.011	0.016		0.667	0.510
Debt to Equity Ratio	0.029	0.014	0.941	2.149	0.040
Debt to Assets Ratio	0.154	0.067	1.010	2.307	0.028

a. Dependent Variable: Return on Assets

Source: Data processing (2023)

Based on Table 4 above, the results of the t-test on the *debt to equity ratio* (X1) variable obtained a t-value of $2.149 > t_{\text{table}}$ which is 1.69236 and a significant value of $0.040 < 0.05$, then H_a is accepted and H_0 is rejected, meaning that the *debt to equity ratio* variable affects the *return on assets* in telecommunication companies listed on the Indonesia Stock Exchange in 2021-2022. Furthermore, the results of the t-test on the *debt to assets ratio* (X2) variable obtained a calculated value of $2.307 > t_{\text{table}}$, namely 1.69236 and a significant value of $0.028 < 0.05$, then H_a was accepted and H_0 was rejected, meaning that the *debt to assets ratio* variable affects the *return on assets* in telecommunication companies listed on the Indonesia Stock Exchange in 2021-2022.

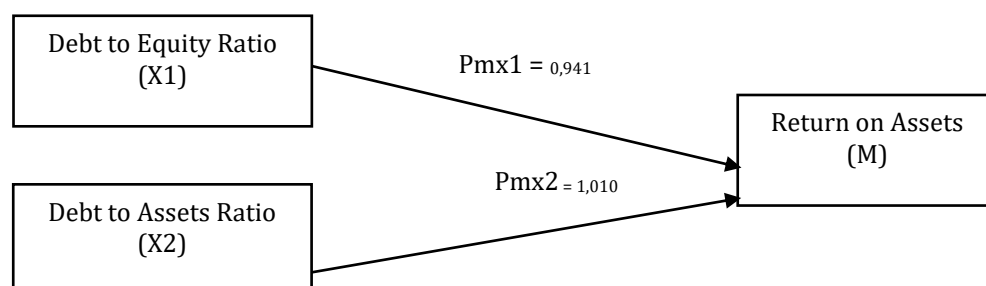


Figure 3 Structural Path Analysis I

Next, determine the value of the direct influence of X_1 and X_2 on M .

- a. Direct $X1 \rightarrow M = P_{mx1} \times P_{mx1}$
 $= 0,941 \times 0,941$
 $= 0,885$
 $= 88,5\%$
- b. Direct $X2 \rightarrow M = P_{mx2} \times P_{mx2}$
 $= 1,010 \times 1,010$
 $= 1,02$
 $= 102\%$

3.4.2 Structural Path Analysis II

By knowing the calculation from the previous one, namely the analysis of the structure path I, then the next step can be continued in the analysis of the structure path II in its coefficient with the path analysis. Where the values obtained in the analysis of the structure path II are the results of the calculation which can be seen from the following table:

Table 5. Results of DER and DAR Path Analysis on Stock Return

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Mr.
1	Regression	1.356	3	0.452	14.263	0.000b
	Residual	0.919	29	0.032		
	Total	2.274	32			

a. Dependent Variable: Stock Return

b. Predictors: (Constant), Return on Assets, Debt to Equity Ratio, Debt to Assets Ratio

Based on Table 5 above, the results of testing this hypothesis can be seen simultaneously between the variables debt to equity ratio ($X1$) and debt to assets ratio ($X2$) to stock return (Y) showing that $F_{\text{calculates}} 14.263 > F_{\text{table}} 3.28$ with a significant value of $0.000 < 0.05$, then the variables debt to equity ratio ($X1$) and debt to assets ratio ($X2$) simultaneously affects stock return (Y). To find out whether the results of the variables debt to equity ratio ($X1$) and debt to assets ratio ($X2$) have a partial effect or not on stock return (Y), it can be seen from table 6 as follows:

Table 6 Results of DER and DAR Path Analysis on ROA

Coefficients ^a					
Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Mr.
(Constant)	.598	.073		8.227	.000
Debt to Equity Ratio	.170	.066	.851	2.579	.015
Debt to Assets Ratio	1.070	.325	1.098	3.296	.003
Return on Assets	3.089	.818	.484	3.778	.001

a. Dependent Variable: Stock Return

Source: Data processing (2023)

Based on Table 6 above, the results of the t-test on the *debt to equity ratio* ($X1$) variable obtained a t-value of $2.579 > t_{\text{table}}$ which is 1.69236 and a significant value of $0.015 < 0.05$, then H_a is accepted and H_0 is rejected, meaning that *the debt to equity ratio* variable affects *stock returns* in telecommunications companies listed on the Indonesia Stock Exchange in 2021-2022. Furthermore, the results of the t-test on the *debt to assets ratio* ($X2$) variable obtained a calculated value of $3.296 > t_{\text{table}}$, namely 1.69236 and a significant value of $0.003 < 0.05$, then H_a was accepted and H_0 was rejected, meaning that *the debt to assets ratio* variable affects *stock returns* in telecommunications companies listed on the Indonesia Stock Exchange in 2021-2022.

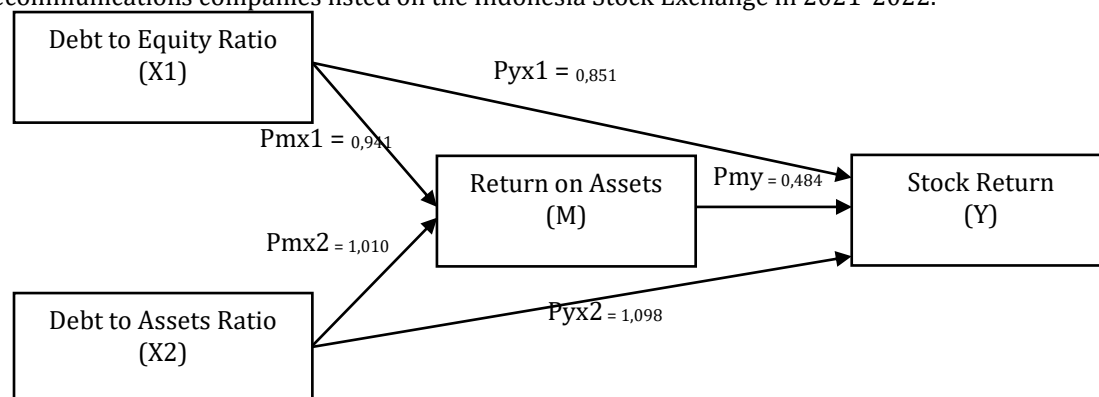


Figure 4 Structural Path Analysis II

Next, determine the value of the direct influence of $X1$ and $X2$ on Y .

- a. Direct $X1 \rightarrow Y = P_{yx1} \times P_{yx1}$

$$\begin{aligned} &= 0,851 \times 0,851 \\ &= 0,724 \\ &= 72,4\% \end{aligned}$$

b. Direct $X_2 \rightarrow Y = P_{yx2} \times P_{yx2}$

$$\begin{aligned} &= 1,098 \times 1,098 \\ &= 1,206 \\ &= 120,6\% \end{aligned}$$

c. X_1 to Y via M

The magnitude of the direct influence was 0.851 with a significant value of 0.015. The magnitude of the indirect influence is $0.941 \times 0.484 = 0.456$. The total magnitude of influence is 0.851 (0.941×0.484) = 0.388. This means that the effect of *debt to equity ratio* on *stock return* shows a direct value of 0.851, which is significant with a p-value of 0.015, indicating a strong relationship. The indirect influence, through *return on assets* as a mediating variable, was calculated at 0.456 (0.941×0.484). When combined, the total effect of the *debt to equity ratio* on *stock returns*, taking into account the effect of this mediation, is 0.388. It confirms that *return on assets* serves as a mediator that affects the relationship between *the debt to equity ratio* and *stock return*, with the overall influence covering both direct and indirect effects.

d. X_2 to Y via M

The magnitude of the direct influence was 1.098 with a significant value of 0.003. The magnitude of the indirect influence is $1.010 \times 0.484 = 0.489$. The total magnitude of influence is 1.098 (1.010×0.484) = 0.537. This means that the effect of *debt to assets ratio* on *stock return* shows a direct value of 1.098, which is significant with a p-value of 0.003, indicating a strong and significant relationship. The indirect influence, through *return on assets* as a mediating variable, was calculated at 0.489 (1.010×0.484). When combined, the total effect of the *debt to assets ratio* on *stock returns*, taking into account the mediation effect, is 0.537. This shows that *return on assets* as a mediator plays a role in influencing the relationship between *debt to assets ratio* and *stock return*, with an overall influence that includes both direct and indirect effects.

4. CONCLUSION

The results of the study show that the debt to equity ratio and debt to assets ratio have a significant influence on the stock return of telecommunication companies on the Indonesia Stock Exchange in 2021-2023, with return on assets playing an effective role as a mediator. The debt to assets ratio shows a stronger influence than the debt to equity ratio. It is advisable for investors to consider the leverage and profitability ratio in investment decisions, while company managers need to focus on optimizing the capital structure and profitability. Future research may explore additional factors such as company size or macroeconomic conditions that may influence this relationship in the context of Indonesia's telecommunications sector.

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