

The Effects of Profitability and Liquidity on Capital Structure, with Cost of Capital as a Mediating Variable

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Article Info

Article history:

Received 02/05/2026

Revised 16/05/2026

Accepted 18/05/2026

Keywords:

Profitability, Liquidity, Cost of Capital, Capital Structure

ABSTRACT

This study employs a quantitative approach with an explanatory research design. The study population consists of all property and real estate companies listed on the Indonesia Stock Exchange, while the sample was selected using purposive sampling based on predetermined criteria. The data used are secondary data obtained from the companies annual financial reports. Data analysis was conducted using multiple linear regression with IBM SPSS Statistics software, along with mediation tests to examine the role of the cost of capital as an intervening variable. The results indicate that profitability has a significant effect on the cost of capital, liquidity has a significant effect on the cost of capital, profitability has a significant negative effect on capital structure, and liquidity has a significant negative effect on capital structure. Furthermore, the cost of capital was found to mediate the effect of profitability on capital structure as well as the effect of liquidity on capital structure. These findings indicate that the cost of capital is a crucial mechanism in explaining the relationship between a company's financial performance and capital structure decisions. Therefore, companies need to improve profitability, maintain adequate liquidity levels, and manage the cost of capital efficiently in order to establish an optimal capital structure that supports an increase in corporate value.



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INTRODUCTION

The increasingly competitive business environment requires companies to effectively manage their resources and financial policies to ensure business sustainability. One of the most critical financial decisions is the choice of capital structure that is, determining the mix of funding from debt and equity. An optimal capital structure helps a company secure efficient financing costs, enhance corporate value, and minimize financial risks. Conversely, an inappropriate capital structure can increase the cost of capital, reduce profitability, and diminish investor confidence in the company's prospects (Brigham & Houston, 2019; Musthafa, 2017).

For companies in the property and real estate sector, capital structure decisions are a critical issue because the industry's characteristics require long-term investments with relatively large capital needs. Project construction, land acquisition, and asset development mean that companies in this sector rely heavily on external financing. This high reliance on debt requires companies to manage their capital structure optimally to maintain financial stability and increase corporate value. Therefore, identifying the factors that influence capital structure is a key area of study in financial management.

According to the *Pecking Order* theory, companies will prefer to use internal funding sources over external financing. Companies with high profitability tend to have larger accumulated retained earnings, thereby reducing their need for debt. Consequently, the higher a company's profitability, the lower its tendency to use debt, resulting in a more conservative capital structure. Conversely, companies with low profitability will rely more on external financing to meet their investment needs. Meanwhile, the *Trade-Off Theory* explains that a company will seek a combination of debt and equity that

maximizes the tax benefits of debt while minimizing bankruptcy costs and agency costs, thereby achieving an optimal capital structure (Myers, 2001; Frank & Goyal, 2008).

Profitability is one of the key indicators reflecting a company's ability to generate profits from its assets. A high level of profitability indicates that the company has the ability to generate sufficient internal cash flow to finance both operational and investment activities. This condition provides the company with greater flexibility in determining funding sources, thereby reducing its reliance on debt. Various previous studies have shown that profitability has a significant relationship with capital structure, though the direction of this relationship has yielded inconsistent results. Some studies have found that profitability has a negative effect on capital structure because companies prioritize internal financing, while other studies indicate that more profitable companies are actually able to obtain debt at a lower cost, leading to increased use of debt.

In addition to profitability, liquidity is also a factor that determines a company's capital structure decisions. Liquidity reflects a company's ability to meet its short-term obligations using its current assets. Companies with high liquidity levels have healthier financial conditions and are thus able to meet their financial obligations on time. Good liquidity can enhance creditors' and investors' confidence in a company's ability to manage financial risk. However, research findings regarding the impact of liquidity on capital structure also remain inconsistent.

Previous studies indicate that the effects of profitability and liquidity on capital structure still yield varying findings. Khan and Ghayas (2020) found that profitability and liquidity have a significant effect on capital structure. Elgammal et al. (2020) found that profitability has a negative effect on capital structure. Peter and Tanadi (2020) concluded that profitability, debt, and capital structure influence one another. Meanwhile, Gaytan et al. (2022) demonstrated that profitability and liquidity are the primary determinants of capital structure. In addition to these direct effects, the cost of capital is believed to be the mechanism that explains the relationship between profitability, liquidity, and capital structure. Companies with high profitability and liquidity generally have lower risk and thus incur a lower cost of capital. This condition, in turn, influences a company's decision in determining its optimal capital structure (Vo, 2021; Javaid et al., 2021).

LITERATURE REVIEW

Profitability

Profitability refers to a company's ability to generate profits over a specific period through the utilization of all its resources. Profitability ratios indicate the effectiveness of management in managing the company's assets to generate profits. In this study, profitability is measured using Return on Assets (ROA), which is the ratio of net income to total assets. A higher ROA value indicates that the company is more effective in managing its assets, thereby generating greater profits (Hery, 2017; Kasmir, 2017).

Liquidity

Liquidity refers to a company's ability to meet its short-term obligations using its current assets. A high liquidity level reflects a company's sound financial condition, enabling it to fulfill its obligations on time. This study uses the Current Ratio (CR) as a proxy for liquidity because this ratio illustrates a company's ability to settle its current liabilities using its current assets (Kasmir, 2015; Alam, 2020).

Cost of Capital

The *cost of capital* is the minimum rate of return required by investors and creditors on the funds they invest in a company. The cost of capital serves as the basis for investment and financing decisions because it reflects the company's risk. The lower the cost of capital, the greater the opportunity for the company to increase its value (Brigham & Houston, 2019; Munawir, 2011). In this study, the cost of capital is measured using the Weighted Average Cost of Capital (WACC) because it captures the weighted average cost of all the company's funding sources, whether from debt or equity. WACC is the most widely used indicator in financial management research to evaluate the efficiency of financing decisions (Tunggal, 2016).

Capital Structure

Capital structure refers to the combination of long-term debt and equity used by a company to finance its assets. Capital structure decisions are among a company's strategic decisions because they

influence financial risk, the cost of capital, and firm value. An optimal capital structure is expected to minimize the cost of capital while maximizing firm value (Musthafa, 2017; Brigham & Houston, 2019). This study uses the Debt-to-Equity Ratio (DER) as an indicator of capital structure because this ratio shows the proportion of debt relative to equity. A higher DER value indicates greater reliance on external financing, which in turn increases the company's level of financial risk (Kasmir, 2015).

Based on the theoretical framework described above, the research model is presented as follows:

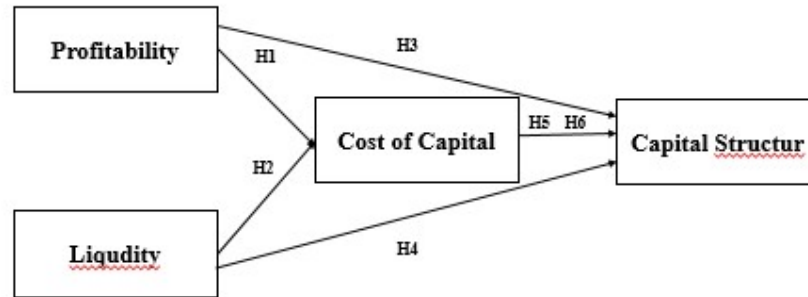


Figure 1. Framework

RESEARCH METHODS

Research Design

This study employs a quantitative approach using explanatory *research*. The quantitative approach was chosen because this study aims to test the causal relationship between the variables of profitability, liquidity, cost of capital, and capital structure through hypothesis testing. Explanatory research is conducted to explain the influence of independent variables on dependent variables, either directly or indirectly through mediating variables (Sugiyono, 2022). The population in this study consists of all real estate and real estate-s listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. The sample was selected using purposive sampling, a method of determining a sample based on specific criteria to ensure the sample aligns with the study's objectives (Sugiyono, 2022). The sample criteria for this study include: (1) real estate and property sector companies listed continuously on the Indonesia Stock Exchange during the 2020–2024 period; (2) companies that published complete annual financial reports during the study period; (3) companies with complete data for calculating all research variables; and (4) companies that were not delisted during the observation period. The data used in this study consists of secondary data obtained from companies' *annual reports* and audited financial statements. Data were obtained from the official websites of the Indonesia Stock Exchange (www.idx.co.id) as well as the official websites of each company. SPSS was used for data analysis.

RESULTS AND DISCUSSION

Normality Test

A normality test aims to determine whether the sampled data are normally distributed or not (Ghozali, 2016:52). In this study, the statistical test used to test the normality of the residuals is the nonparametric Kolmogorov-Smirnov (K-S) test. Whether the data are normally distributed or not can be determined by comparing the obtained significance value with the predetermined significance level. If the obtained significance value (p-value) is greater than 5% or 0.05, the data are normally distributed. Conversely, if the significance value is less than 5% or 0.05, the data are not normally distributed.

Table 1. Normality Test Results

		Model 1
N		70
Normal Parameters ^{a, b}	Mean	,0000000
	Standard Deviation	,24779962
Most Extreme Differences	Absolute	,109
	Positive	,109
	Negative	−0.099
Test Statistic		0.088
Asymptotic Significance (2-tailed)		,200 ^{c,d}

Table 2 above shows that Model 1 has a significance value of $0.200 > 0.05$, indicating that the data in Model 1 are normally distributed.

Multicollinearity Test

The multicollinearity test aims to determine whether there is correlation among the independent variables in the regression model. A good regression model should not exhibit correlation among the independent variables (Ghozali, 2016:55).

Table 2. Multicollinearity Test Results

Variable	Tolerance	VIF
ROA	0.825	1.212
CR	0.979	1.022
WACC	0.148	2.705

Based on Table 2 above, it can be explained that the results of the multicollinearity test in Model 1 show that each independent variable (Profitability and Liquidity) obtained a Tolerance value > 0.10 and a VIF value < 10 . These results indicate that the variables are not correlated with one another and that there is no multicollinearity issue.

Heteroscedasticity Test

The heteroscedasticity test aims to determine whether there is unequal variance in the residuals from one observation to another within the regression model. If the variance of the residuals remains constant across observations, it is called homoscedasticity; if it varies, it is called heteroscedasticity. A good regression model is one that exhibits homoscedasticity that is, one in which there is no heteroscedasticity (Ghozali, 2016:89).

Table 3. Results of the Heteroscedasticity Test

Variable	Significant	Description
INTS	0.553	No Heteroscedasticity Issues
ROA	0.565	
CR	0.987	
WACC	0.088	

The results of the heteroscedasticity test indicate that there is no heteroscedasticity issue, as all variables obtained significance levels greater than 0.05.

Autocorrelation Test

The test used to detect autocorrelation in this study is the *Durbin-Watson* test. The *Durbin-Watson* test is used only for first-order autocorrelation and requires the presence of *an intercept* (constant) in the regression model and the absence of lag variables among the independent variables (Ghozali, 2013:111).

Table 4. Autocorrelation Test Results

	Durbin-Watson	Description
Model 1	1.104	No autocorrelation
Model 2	0.963	No autocorrelation

Hypothesis Test Results

T-Test Results

The t-test is used to determine the effect of an individual independent variable in explaining the variation in the dependent variable (Ghozali, 2018). The significance level (α) used is 5% (0.05). The criteria for accepting or rejecting a hypothesis are based on the *p-value*. If the *p-value* is greater than α , the alternative hypothesis is rejected. Conversely, if the *p-value* is less than α , the alternative hypothesis is not rejected and is therefore accepted.

Table 5. Results of the Partial Test

	Hypothesis	Calculated t-value	Significant	Conclusion
H1	ROA $\rightarrow$ WACC	5.305	0.001	Accepted
H2	CR $\rightarrow$ WACC	1.374	0.042	Accepted
H3	ROA $\rightarrow$ DER	-4.287	0.025	Accepted
H4	CR $\rightarrow$ DER	-3.933	0.030	Accepted
H5	ROA*WACC $\rightarrow$ DER	1.919	0.011	Accepted
H6	CR*WACC $\rightarrow$ DER	-1.418	0.002	Accepted

Discussion

The Effect of Profitability on the Cost of Capital

The results of the first hypothesis indicate that profitability affects the cost of capital, with a significance level of 5% ($0.001 < 0.05$). However, the direction of the hypothesis was expected to be negative, whereas the test results showed a positive effect. Therefore, the hypothesis is accepted, meaning that an increase in profitability leads to a decrease in the cost of capital for real estate companies listed on the IDX from 2018 to 2022. A high level of profitability can be seen as a sign of a company's financial health. Investors and creditors may be more inclined to provide funds at a lower cost of capital to companies that generate stable and high profits. Companies that generate sufficient profits have a greater ability to pay interest on debt, allowing them to secure lower cost of capital when accessing the bond market or obtaining loans. In some cases, highly profitable companies may be viewed as lower-risk investments. The findings of Wahyuni et al. (2021) revealed that a decrease in the WACC within the housing industry during the observation period was associated with a decline in ROA.

The Effect of Liquidity on the Cost of Capital

The results of the second hypothesis indicate that liquidity affects the cost of capital, with a significance level of 5% ($0.042 < 0.05$). A high level of liquidity can be seen as an indication that a company has a strong ability to meet its short-term obligations. This can reduce financial risk, and investors may view it as a positive signal, which can lower the cost of capital. The relationship between liquidity and the cost of capital may also depend on the time horizon. While liquidity can affect the short-term cost of capital, the long-term cost of capital may be more influenced by other factors such as capital structure and long-term performance. Research conducted by Efrina & Faisal (2017) found that liquidity levels have a significant negative effect on the cost of equity.

The Effect of Profitability on Capital Structure

The results of the third hypothesis show that profitability has a significant negative effect on capital structure. This is because the *p-value* obtained is less than the 5% significance level ($0.025 < 0.05$). The results of this study indicate that an increase in profitability leads to a decrease in capital structure among real estate companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022. These findings support the research by Lathfita et al. (2022), which demonstrated that profitability

has a significant negative effect on capital structure. Oktaviana and Taqwa (2021) found that the higher the profitability, the lower the likelihood that a company will use debt financing. Muntahanah et al. (2020) revealed that as profit levels rise, the use of external funds or debt financing decreases; in other words, higher profitability reduces a company's capital structure. This is because the company has sufficient internal funds to meet its operational needs.

The Effect of Liquidity on Capital Structure

The results of the fourth hypothesis indicate that liquidity has a significant negative effect on capital structure. This is because the p-value obtained is less than the 5% significance level ($0.030 < 0.05$). The results of this study show that an increase in liquidity leads to a decrease in capital structure among real estate companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022. These results support the findings of Wahyanantri (2020), who demonstrated that liquidity has a negative effect on capital structure. The same result was also demonstrated by Rivandi and Novriani (2021), who found that a company's high liquidity can reduce its capital structure. Wahyanantri (2020) argues that companies with high liquidity have the ability to pay off their short-term debt, which tends to reduce debt and thus result in a smaller capital structure. Companies with high liquidity levels tend to rely on relatively low levels of debt because their current assets are sufficient to cover the company's funding needs. Therefore, the higher the liquidity level, the smaller the company's capital structure will be, as the company will prioritize using internal funds over resorting to debt.

Cost of Capital Mediates the Effect of Profitability on Capital Structure

The results of the fifth hypothesis indicate that the cost of capital mediates the effect of profitability on capital structure. This is because the p-value obtained is less than the 5% significance level ($0.011 < 0.05$). A company's profitability is one of the key factors influencing capital structure decisions. More profitable companies tend to have more options for obtaining financing through debt or equity. High profitability can also boost investor confidence and a company's credibility, which can influence the cost of capital which, in turn, can affect a company's financial decisions. This means that the higher the profit, the greater the potential for a company to use retained earnings as a source of funding; this reduces debt, which in turn lowers the cost of capital, thereby impacting the company's capital structure. The results of a study conducted by Peter & Tanadi (2020) show that profitability, debt, and capital structure all influence one another. This is supported by research by Ayu et al. (2022), which found that the cost of capital mediates the relationship between leverage and profitability.

Cost of Capital Mediates the Effect of Liquidity on Capital Structure

The results of the sixth hypothesis indicate that the cost of capital mediates the effect of liquidity on capital structure. This is because the significance value obtained is less than the 5% alpha level ($0.002 < 0.05$). Liquidity is one of the factors used to measure a company's ability to finance its short-term debt upon maturity using current assets. More liquid companies may have the ability to raise funds without relying too heavily on short-term debt. The ability to meet short-term obligations can influence a company's decisions regarding the use of short-term and long-term debt in its capital structure. Companies with high liquidity levels may be more inclined to use internal funds rather than seek external financing. Furthermore, the cost of capital reflects the overall cost of the funds a company uses. The cost of capital can explain how decisions regarding a company's liquidity affect the cost of capital and, ultimately, its capital structure. As noted by Septiani & Yuliana (2022) in their study, liquidity has a significant effect on capital structure; that is, the higher the liquidity, the lower the company's debt-to-equity ratio.

CONCLUSION

Based on the results of the analysis and hypothesis testing, it can be concluded that profitability has a significant effect on the cost of capital for companies in the property and real estate sector listed on the Indonesia Stock Exchange during the 2018–2022 period. This indicates that changes in a company's profitability will affect the cost of capital it incurs. Liquidity was also found to have a significant effect on the cost of capital. Thus, a company's ability to meet its short-term obligations is one of the factors influencing changes in the cost of capital. Further research results show that

profitability has a negative and significant effect on the capital structure. This means that an increase in profitability tends to be followed by a decrease in the use of debt in a company's capital structure. Furthermore, liquidity also has a significant negative effect on the capital structure, indicating that the higher a company's liquidity level, the lower the proportion of debt used in the company's financing. Mediation tests show that the cost of capital mediates the effect of profitability on the capital structure. Additionally, the cost of capital was also found to mediate the effect of liquidity on the capital structure. These results indicate that the cost of capital serves as the mechanism explaining the relationship between profitability and liquidity and a company's capital structure. Companies in the property and real estate sectors are advised to continue improving profitability through more efficient asset management and enhanced operational performance, as strong profitability can support more optimal financing decisions. Furthermore, companies need to maintain a healthy level of liquidity to meet short-term obligations without increasing their reliance on external financing. Management must also consider the cost of capital in every financing decision, as it has been shown to influence a company's capital structure. By managing the cost of capital efficiently, companies are expected to achieve a more optimal financing mix and enhance corporate value. Future research is recommended to expand the scope of the study by including other industrial sectors so that the results can be compared across industries. Additionally, the observation period could be extended to better reflect the company's condition over a longer timeframe.

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