

The Effect of Profitability, Liquidity, Company Size, and Sales Growth on Capital Structure with Board Size as a Moderation Variable in Technology Sector Companies Listed on the Indonesia Stock Exchange for the 2022-2024 Period

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Keywords:	Abstract
profitability; liquidity; company size; sales growth; capital structure board size	This study aimed to analyze the determinants of capital structure in technology sector companies listed on the Indonesia Stock Exchange (IDX) during the 2022–2024 period by examining the effects of profitability, liquidity, company size, and sales growth. In addition, board size was incorporated as a moderating variable. This study employed a quantitative approach using secondary data obtained from financial statements and official annual reports. The sample was selected using a purposive sampling method, while data analysis was conducted using panel data regression and Moderated Regression Analysis (MRA). The empirical findings indicated that liquidity had a negative and significant effect on capital structure. In contrast, profitability, company size, and sales growth showed negative relationships with capital structure, but their effects were not statistically significant. Furthermore, board size did not significantly moderate the relationships between the independent variables and capital structure. These findings provide strategic considerations for management in making financing decisions and contribute to the empirical literature on capital structure dynamics in the Indonesian technology sector.

INTRODUCTION

Capital structure policies play a crucial role in corporate financial management because they reflect strategic decisions regarding the combination of debt and equity used to finance investments and operational activities. The accuracy of capital composition directly contributes to cost of capital efficiency, increased firm value, and long-term business sustainability. In an increasingly competitive business environment, companies must carefully determine the appropriate proportion between liabilities and equity (Wallington et al., 2021; Zhu et al., 2021). This issue is particularly important for technology sector companies, which typically require substantial capital investment to support innovation, product development, digital transformation, and market expansion. Funding challenges in this sector are becoming more complex due to the significant role of

intangible assets, which differentiates technology companies from conventional industries. Therefore, effective and adaptive capital structure management is essential for maintaining sustainable growth (Hasanudin, 2026; Mensah et al., 2025; Sanusi et al., 2026).

Referring to the Trade-Off Theory proposed by Kraus and Litzenberger (1973), companies attempt to establish an optimal capital structure by balancing the benefits of debt financing with the potential costs associated with financial distress. The theory suggests that financing decisions are influenced by a comparison between the advantages of tax benefits from debt (tax shields) and the risks arising from excessive leverage, including bankruptcy costs. From this perspective, companies with larger operating scales (firm size) are generally considered to have lower default risk and better access to external financing markets. These characteristics provide larger firms with greater flexibility in utilizing debt financing compared with smaller firms.

In contrast, the Pecking Order Theory developed by Myers (1984) explains that companies follow a financing hierarchy when selecting funding sources. The theory proposes that managers prioritize internal financing, such as retained earnings, before seeking external funding through debt or equity issuance. This preference aims to minimize information asymmetry and related financing costs. When internal cash flows are sufficient to support investment and operational requirements, companies tend to reduce their reliance on external debt. Based on this perspective, financial performance variables such as profitability, liquidity, and sales growth are expected to influence corporate capital structure decisions.

Agency Theory explains the contractual relationship between principals and managers (agents) who are entrusted with authority to manage corporate resources (Jensen & Meckling, 1976). Conflicts may arise when differences in interests between these parties influence strategic decision-making processes. To minimize agency problems, effective corporate governance mechanisms are required to strengthen managerial supervision and accountability. Within this framework, board size represents one of the important governance mechanisms. An appropriate board composition may improve monitoring effectiveness and influence managerial decisions, including those related to leverage management and capital structure risk mitigation.

Profitability reflects a company's ability to generate earnings through effective utilization of its resources. Based on the assumptions of Pecking Order Theory, companies with higher profitability tend to prioritize internal funding before relying on external debt financing (Myers, 1984). Firms with strong profitability generally accumulate greater retained earnings, enabling them to finance operational activities and investments independently. Consequently, their dependence on external leverage tends to decrease. This argument is supported by empirical studies conducted by Pramana and Darmayanti (2020), Tamara et al. (2020), Dewi and Fachrurrozie (2021), Kurniasari and Listiawati (2021), and Putri et al. (2021), which reported that profitability is negatively associated with capital structure.

The urgency of this research is reinforced by the dynamic development of Indonesia's technology sector, which has experienced rapid growth and transformation in recent years. The expansion of digital startups, e-commerce platforms, and financial technology companies has intensified competition for capital and increased the importance of strategic financing decisions.

The COVID-19 pandemic further accelerated digital transformation, creating both opportunities and financial challenges for technology companies. According to Bank Indonesia (2024), investment in the technology sector increased by 15.3% in 2023, exceeding growth in several other sectors; however, access to financing remains a significant challenge for many technology companies. Therefore, understanding the determinants of capital structure in this sector is important for management in optimizing financing decisions, for investors in assessing financial risks, and for policymakers in developing supportive regulatory frameworks.

The novelty of this study lies in its comprehensive examination of capital structure determinants among Indonesian technology sector companies during the 2022–2024 period, incorporating board size as a moderating variable. Unlike previous studies that primarily focused on conventional industries or earlier periods, this research provides updated empirical evidence regarding the influence of profitability, liquidity, company size, and sales growth on capital structure within a rapidly evolving technology sector. The inclusion of board size as a moderating variable contributes to the literature by examining whether corporate governance mechanisms influence the relationship between firm characteristics and financing decisions. Furthermore, this study applies panel data regression combined with Moderated Regression Analysis (MRA) to provide statistical evidence considering both cross-sectional and time-series variations.

The purpose of this study was to empirically analyze the effects of profitability, liquidity, company size, and sales growth on the capital structure of technology sector companies listed on the Indonesia Stock Exchange (IDX) during the 2022–2024 period, with board size as a moderating variable. Specifically, this study aimed to: (1) examine the effect of profitability on capital structure; (2) analyze the effect of liquidity on capital structure; (3) investigate the effect of company size on capital structure; (4) assess the effect of sales growth on capital structure; and (5) evaluate the moderating role of board size in the relationship between these independent variables and capital structure.

This research provides several theoretical and practical contributions. For corporate management, the findings provide empirical insights for optimizing capital structure decisions, particularly regarding liquidity management and corporate governance practices. For investors, this study offers information for evaluating financial risks and investment considerations in the technology sector. For academics, the research contributes to the empirical literature on capital structure in emerging markets and provides a foundation for future studies. For policymakers, the findings may support the development of regulations related to corporate governance and capital market strengthening. Overall, this study contributes to a better understanding of capital structure dynamics in Indonesia's technology sector and supports the development of more efficient and sustainable corporate financing strategies.

H1: Profitability has a negative effect on capital structure

Liquidity describes the company's financial readiness to fulfill its short-term obligations using current assets. The high liquidity ratio indicates that the company has a healthy internal space to fund its business activities independently without the need for external financial support. In line with the proposition of *Pecking Order Theory*, the availability of liquid internal working capital

triggers management's tendency to reduce the portion of debt in financing. Consistent with this argument, a study published by Dewi and Fachrurrozie (2021), Suhardjo et al. (2022), Firanti and Suryandani (2023), Iskandar and Zaki (2023), and Saragih and Hariani (2023) shows a negative contribution from the liquidity aspect to the entity's capital structure.

H2: Liquidity has a negative effect on capital structure.

Firm *size* reflects the operational scale of the corporation which is generally proxied through the logarithm of total assets. Large-scale entities are considered to have a much more resilient internal capital base, which in turn is able to reduce dependence on liability-based financing. In addition, the financial stability and business stability inherent in large companies provide flexibility in carrying out expansion without having to be bound by high external debt commitments. In line with this phenomenon, the observation results from Saragih and Hariani (2023) justify that the increase in the size of the company actually triggers a decrease in the capital structure ratio.

H3: The size of the company has a negative effect on the capital structure.

Sales growth indicates an acceleration or trend of increasing turnover achieved by the company from period to period. A consistently increasing sales rate will naturally strengthen cash *inflows*, thereby minimizing the need for external fund injections. From the perspective of *Pecking Order Theory*, the abundance of funds from this sale will be utilized first before the corporation decides to add new debt burden. Findings from Saragih and Hariani (2023) confirm that the sales growth rate has a negative impact on the configuration of the capital structure.

H4: Sales growth has a negative effect on capital structure

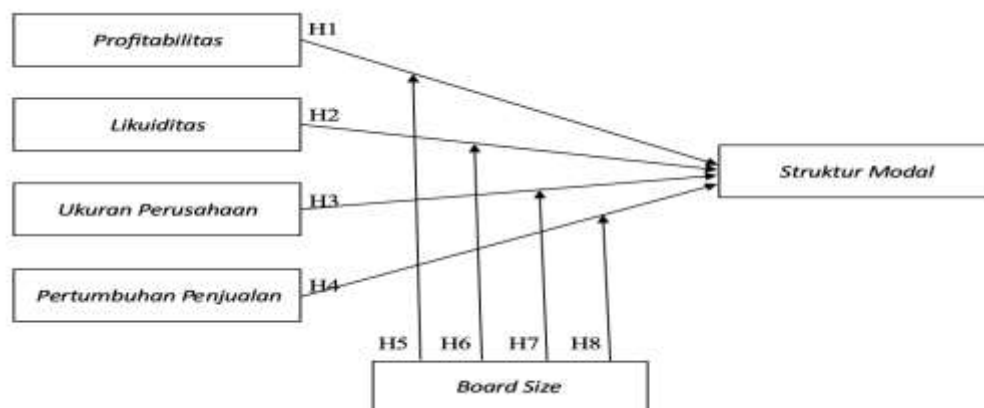
Board size indicates the accumulated number of board of directors personnel who occupy structural functions in the company's organization. Based on *the lens of Agency Theory*, the board of directors plays a central role in supervising managerial behavior in order to guarantee that all executive actions remain oriented to the prosperity of shareholders (Jensen & Meckling, 1976). The existence of an ideal board formation is projected to be able to increase the effectiveness of supervision, sharpen the objectivity of strategic decisions, and tighten control over corporate funding governance. On the basis of these control functions, *board size* is positioned as an intervention variable that is suspected to strengthen or weaken the implications of profitability, liquidity, company size, and sales growth in designing the capital structure.

H5: Board size moderates the effect of profitability on capital structure.

H6: The board size moderates the effect of liquidity on the capital structure.

H7: Board size moderates the influence of company size on capital structure.

H8: The board size moderates the effect of sales growth on the capital structure.



METHODS

This study employed a quantitative approach with a causal research design to empirically examine the effects of profitability, liquidity, company size, and sales growth on capital structure, while incorporating board size as a moderating variable. The study used secondary data obtained from audited financial statements and annual reports of technology sector companies listed on the Indonesia Stock Exchange (IDX) during the 2022–2024 period

The population consisted of all technology sector companies listed on the IDX during the observation period. The research sample was selected using a purposive sampling technique based on predetermined criteria to ensure that the selected companies provided relevant and representative data for analysis. Data processing and hypothesis testing were conducted using EViews 13 through panel data regression analysis and Moderated Regression Analysis (MRA) to examine the moderating effect of board size.

Table 1 Operational Table

Variable	Scale	Measurement	Source
Capital Structure (Y)	Ratio	$DER = \text{Total Debt} / \text{Total Equity}$	Cashmere (2021); Patricia & Dewi (2025)
Profitability (X1)	Ratio	$ROA = \text{Net Profit} / \text{Total Assets}$	Cashmere (2021); Patricia & Dewi (2025)
Liquidity (X2)	Ratio	$CR = \text{Current Assets} / \text{Current Liabilities}$	Cashmere (2021); Patricia & Dewi (2025)
Company Size (X3)	Ratio	$SIZE = \text{Total Assets}$	Pramana & Darmayanti (2020); Patricia & Dewi (2025)
Sales Growth (X4)	Ratio	$SG = (\text{Penjualan}_t - \text{Penjualan}_{t-1}) / \text{Sales}_{t-1}$	Melananda & Sari (2024); Patricia & Dewi (2025)
Board Size (Z)	Ratio	$BS = \text{Number of Members of the Board of Directors}$	Jong et al. (2025); Ngatno et al. (2021); Anwar et al. (2022)

Results and Discussion T Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.106890	1.256495	0.880935	0.3826
ROA	-0.255605	0.183483	-1.393071	0.1698

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CR	-0.028318	0.012554	-2.255680	0.0285
SIZE	-0.027391	0.046274	-0.591943	0.5566
SG	-0.040622	0.080355	-0.505531	0.6154
BS	-0.066881	0.159528	-0.419244	0.6768
ROA_BS	0.011505	0.014331	0.802775	0.4259
CR_BS	0.002409	0.001638	1.470931	0.1476
SIZE_BS	0.002482	0.005575	0.445142	0.6581
SG_BS	0.003060	0.010006	0.305837	0.7610
Indicator	Value	Indicator	Value	
R-squared	0.358724	Mean dependent var	0.122100	
Adjusted R-squared	0.243295	S.D. dependent var	0.159129	
S.E. of regression	0.138425	Sum squared resid	0.958069	
F-statistic	3.107734	Durbin-Watson stat	1.565575	
Prob(F-statistic)	0.004827			

Based on empirical estimates, the regression model tested met the model feasibility criteria (*goodness of fit*) for further analysis. This legitimacy is evidenced by the acquisition of a Prob(F-statistic) value of 0.004827, which is below the significance threshold of 0.05. In addition, the *Adjusted R-Squared* value was recorded at 0.243295. This figure means that the variation of independent variables consisting of profitability, liquidity, company size, sales growth, *board size*, and all interaction variables, was simultaneously able to confirm the variability of the capital structure of 24.33%. Meanwhile, the remaining portion of 75.67% was conditioned by other external factors that were not accommodated in this research modeling.

The Effect of Profitability on Capital Structure

The results of parameter testing showed that the profitability variable had a regression coefficient of -0.255605 with a probability value of 0.1698. Given that the probability level exceeded the alpha of 5%, it can be concluded that profitability does not have a significant contribution to the capital structure, which means **that H1 is not supported**. Although not significant, the negative sign on the coefficient indicates a polarizing tendency where an increase in profitability is accompanied by a reduction in the corporate debt ratio. This phenomenon suggests that the capacity of technology issuers to make a net profit is not the main determinant that intervenes in funding policy formulation throughout the observation period.

The Effect of Liquidity on Capital Structure

For the liquidity variable, a regression coefficient of -0.028318 with a probability level of 0.0285 was obtained. Because this probability value is smaller than the standard significance of 0.05, liquidity is empirically proven to have a significant negative impact on capital structure, so **H2 is supported**. This correlation confirms that technology companies with high liquidity resilience tend to limit *leverage* (debt) exposure. The availability of abundant current assets provides flexibility for management to meet operational fund needs independently, without having to rely on debt from external parties.

The Effect of Company Size on Capital Structure

Based on the output of the data, the firm *size* variable yielded a coefficient value of -0.027391 with a probability of 0.5566. This figure indicates that the size of the company does not have a significant effect on the configuration of the capital structure, so **H3 is not supported**. Although the direction of the parameters shows an inverse (negative) relationship, the quantity of assets controlled by the company has not been able to project real fluctuations in debt policy. These findings confirm that funding decisions in the technology sector are not absolutely dictated by the small scale of the corporation, but are influenced by other aspects outside of this modeling.

The Effect of Sales Growth on Capital Structure

Testing on the sales growth variable produced a regression coefficient of -0.040622 with a probability value of 0.6154. A magnitude of probability exceeding the standard of 0.05 indicates that sales growth does not have a significant contribution to the capital structure, which means that **H4 is not supported**. Although it forms a negative relationship trend, the acceleration of sales turnover does not necessarily transform the company's capital structure policy. In other words, sales expansion has not been a strong indicator to explain the dynamics of capital shifts in the technology industry in Indonesia during the observation period.

The Role of Board Size Moderation on the Relationship of Profitability, Liquidity, Company Size, and Sales Growth to Capital Structure

Evaluation of the intervention function of the moderation variable showed that all interactions of independent variables with *the board size* had a probability value above the threshold of 0.05. In detail, the probability value for the interaction was recorded ROA_BS 0.4259, CR_BS 0.1476, SIZE_BS 0.6581, and SG_BS 0.7610. This statistical data summary proves that *board size* fails to act as a moderation variable, either in strengthening or weakening the impact of profitability, liquidity, company size, and sales growth on the capital structure. As a result, H5, H6, H7, and H8 are declared unsupported.

These comprehensive findings indicate that the quantity or number of personnel on the board of directors has no influence in mediating the company's internal characteristics on funding decisions. The effectiveness of the board of directors in executing the financial policy monitoring function seems to be determined more by qualitative aspects—such as the capabilities, competencies, and experience track record of the board members—rather than simply relying on the number of board members listed in the organizational structure.

CONCLUSION

Based on the empirical estimation results, this study concludes that during the 2022–2024 period, liquidity was the only major determinant that had a negative and significant effect on the capital structure of technology sector companies listed on the Indonesia Stock Exchange (IDX). This finding indicates that companies with stronger capacity to meet short-term obligations tend to reduce their reliance on debt because the availability of current assets allows them to support operational needs through internal resources. In contrast, other performance indicators, including profitability, firm size, and sales growth, showed a negative relationship with capital structure but

did not reach statistical significance. Furthermore, board size was found to have no significant moderating effect on the relationship between the independent variables and capital structure.

From a practical perspective, technology companies are encouraged to maintain liquidity stability as an important consideration in developing funding policies, while investors may consider liquidity conditions as one of the fundamental indicators in assessing financial risk. Considering the limitations of this study, future research is recommended to expand the observation scope to other industry sectors, extend the research period, and incorporate additional variables, such as asset structure, business risk, institutional ownership, and broader corporate governance mechanisms, to improve the explanatory capacity of the research model.

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