



**THE EFFECT OF SALES GROWTH, BUSINESS RISK, AND ASSET STRUCTURE
ON CAPITAL STRUCTURE IN THE PROPERTY AND REAL ESTATE SECTOR
COMPANIES IN INDONESIA**

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Abstract:

This study analyzes the influence of sales growth, business risk, and asset structure on capital structure in property and real estate companies in Indonesia. The research method used is quantitative research. The population in this study consists of property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. A purposive sampling technique was used to select 28 companies with 84 data observations. The data were analyzed using panel data regression through EViews 12 software. The results indicate that sales growth has a positive and significant effect on capital structure. In contrast, both business risk and asset structure show a negative and significant influence. These findings highlight how growth potential encourages the use of debt, while higher risk levels and a greater proportion of fixed assets tend to reduce reliance on external financing.

Keywords: Sales Growth; Business Risk; Asset Structure; Capital Structure



BACKGROUND

In recent years, the Indonesian economy has experienced rapid and dynamic growth, pushing companies across various sectors to compete more aggressively and continuously improve their performance. Among these, the property and real estate sector stands out due to its significant contribution to national economic development. Based on a press release from the Coordinating Ministry for Economic Affairs, the construction sector contributed 9.43% and the real estate sector 2.40% to Indonesia's GDP in the second quarter of 2023. Although the real estate sector faced a year-on-year decline of 12.30%, demand for large residential properties increased by 15.11%, and commercial property demand also exhibited a positive trend. This upward demand indicates a potential recovery and growth momentum in the property sector.

At the microeconomic level, housing ownership data also reflects a positive trend. According to Indonesia's Central Statistics Agency (BPS), the proportion of households owning their own homes increased steadily from 2017 to 2022, reaching 83.99%. This growth in ownership indicates improved purchasing power and household economic stability, likely driven by affordable housing programs, low-interest financing schemes, and heightened public awareness of the value of property as a long-term financial asset. The ongoing rise in home ownership suggests a resilient housing market that continues to attract investment and encourages developers to expand their operations. This trend is visually illustrated in Figure 1, which shows the gradual increase in homeownership over the six-year period, affirming the sector's relevance in public and private investment planning.

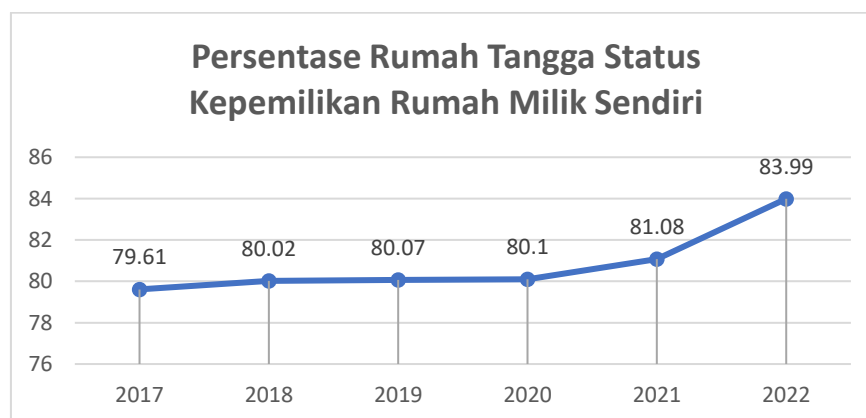


Figure 1 Percentage of Households with Owner-Occupied Housing in Indonesia

Source: BPS (2023)



Given the capital-intensive nature of the industry, companies in the property and real estate sector often require substantial funding to support land acquisition, infrastructure development, and operational expansion. This makes financial resource management critical in ensuring competitiveness and sustainability. One of the key financial decisions faced by companies in this sector is how to structure their capital—whether to rely more heavily on internal equity or external debt financing. This decision is central to determining a firm's financial stability and its ability to withstand economic shocks, adapt to regulatory changes, and achieve long-term business goals.

Capital structure decisions are complex and influenced by various internal and external factors. From a theoretical perspective, achieving an optimal capital structure involves balancing the trade-offs between risk and return, cost of capital, and the firm's strategic objectives. While debt financing can provide tax benefits and enable business expansion, excessive reliance on debt increases the risk of financial distress, especially when market conditions are unfavorable or interest rates rise. Therefore, prudent capital structure management is essential, particularly for sectors like property and real estate, where financial needs are substantial and long-term in nature.

One of the internal factors that may influence capital structure is sales growth. High sales growth is often interpreted as a signal of strong business performance and future potential, which can increase investor and creditor confidence. According to Setiawati and Veronica (2020), companies with high sales growth are more likely to utilize debt to support their expansion, as they are seen as having the capacity to generate sufficient returns. However, empirical studies on the relationship between sales growth and capital structure show mixed results. Some studies find a positive and significant relationship, while others show no significant effect, suggesting that the impact may vary across industries and economic contexts.

The second factor is business risk, which refers to the uncertainty associated with a company's operational income. High business risk typically discourages the use of debt financing, as it increases the likelihood of cash flow volatility and financial default. Gitman (2003) argues that firms facing higher operational risk should be more conservative in their debt policies. Empirical studies in this area also yield inconsistent findings. While some research supports a negative and significant relationship between business risk and capital



structure, others show positive or insignificant effects. These disparities highlight the importance of industry-specific analysis and the need to consider macroeconomic conditions when evaluating risk-related financial decisions.

The third factor is asset structure, which denotes the proportion of fixed assets relative to total assets. Firms with a higher proportion of tangible fixed assets generally have greater borrowing capacity, as these assets can be used as collateral. Aslah (2020) emphasizes that asset structure plays a crucial role in shaping capital structure decisions, especially in capital-intensive industries like real estate. However, research findings on the influence of asset structure are not always aligned. Some studies report a positive relationship, while others find a negative or no significant effect at all. These differences may stem from variations in asset liquidity, market perception, or differences in financial reporting practices across sectors.

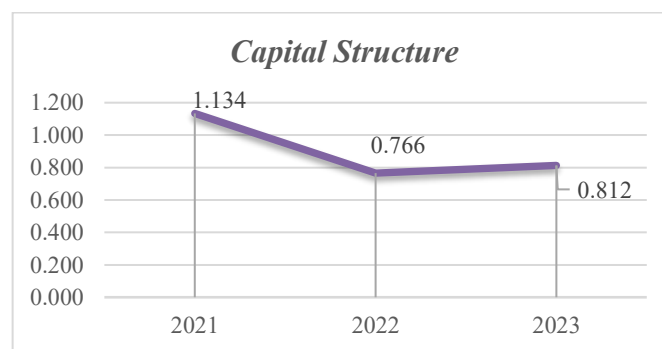


Figure 2 Average Capital Structure of Property and Real Estate Companies in Indonesia

Source: Data processed by the Author (2025)

The Indonesian property and real estate sector, with its large capital requirements and exposure to market risk, presents an ideal context for further exploration of capital structure dynamics. Moreover, recent fluctuations in the sector's average debt-to-equity ratio (DER) underscore the shifting strategies of firms in response to market uncertainty. As shown in Figure 2, the DER of listed property companies decreased significantly from 1.134 in 2021 to 0.766 in 2022, before slightly increasing to 0.812 in 2023. This indicates a cautious adjustment in financing strategies, where companies appear to reduce dependence on debt during uncertain times and gradually resume leverage when conditions stabilize.



Given the strategic importance of capital structure in ensuring firm stability and long-term performance, this study aims to analyze the influence of sales growth, business risk, and asset structure on capital structure among property and real estate firms listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. By focusing on more recent data and a critical economic sector, the study seeks to bridge existing research gaps and provide practical insights for financial decision-making. The findings are expected to offer valuable contributions not only to academic literature but also to practitioners and policymakers seeking to enhance capital efficiency and sustainability in the property industry.

THEORETICAL FRAMEWORK

Trade-Off Theory

The trade-off theory suggests that firms seek to balance the benefits and costs of using debt in their capital structure decisions. According to Setiyanti et al. (2019), the primary benefit of debt financing lies in the tax shield generated by interest payments, which can increase firm value. However, excessive reliance on debt raises the probability of financial distress and may lead to additional costs, including bankruptcy costs, reputational damage, and agency costs. Therefore, firms are expected to pursue an optimal capital structure that maximizes tax advantages without compromising financial stability. This theory is particularly relevant in capital-intensive sectors like property and real estate, where strategic financing decisions are critical to sustaining long-term growth and minimizing risk.

Capital Structure

Capital structure refers to the proportion of equity and debt a firm uses to finance its operations and investments. Bintang (2022) explains that an optimal capital structure is one that minimizes the cost of capital while maintaining a balance between risk and expected returns. By strategically managing the mix of debt and equity, companies can reduce financial burdens such as interest expenses, while also preserving shareholder value. In sectors with high capital requirements, such as property and real estate, capital structure decisions play a vital role in ensuring financial health, operational sustainability, and long-term profitability. This study



uses the Debt to Equity Ratio (DER) as the main indicator to measure capital structure, calculated using the following formula:

$$\text{Debt to Equity Ratio (DER)} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

Sales Growth

Sales growth serves as a key performance indicator reflecting a firm's ability to increase revenue over time. Mulyatiningsih and Atiningsih (2021) state that stable or increasing sales growth signals strong operational efficiency and market responsiveness. In terms of capital structure, firms experiencing high sales growth are often perceived as financially healthy and capable of meeting future obligations, which improves their access to external funding. Such firms may be able to negotiate better financing terms and achieve lower capital costs, thereby influencing their decisions on whether to use debt or equity for expansion purposes. In this study, sales growth is measured using the formula:

$$\text{Sales Growth} = \frac{\text{Total Sales}_t - \text{Total Sales}_{t-1}}{\text{Total Sales}_{t-1}} \times 100\%$$

Business Risk

Business risk represents the uncertainty surrounding a firm's operational income and its ability to maintain consistent performance. According to Sulastris (2021), firms facing high business risk are less likely to rely on debt financing, as unstable earnings may increase the risk of default. In contrast, firms with lower business risk are more comfortable using debt, since stable cash flows ensure the ability to meet financial obligations. Consequently, business risk directly impacts capital structure decisions, with more conservative strategies often adopted by firms operating in volatile environments. In this research, business risk is proxied using the Return on Total Assets (ROTA), calculated as:

$$\text{ROTA} = \frac{\text{Earnings Before Interest and Taxes (EBIT)}}{\text{Total Assets}}$$

Asset Structure

Asset structure refers to the composition of a company's assets, particularly the proportion of fixed assets relative to total assets. Pane (2023) highlights that firms with a higher proportion of tangible fixed assets are generally more capable of obtaining external financing, as these



assets can serve as collateral. In the property and real estate industry, where fixed assets such as land and buildings dominate, asset structure becomes a significant determinant of leverage capacity. A well-structured asset base not only enhances financial credibility but also supports efficient resource allocation and long-term capital planning. This study measures asset structure using the following formula:

$$\text{Asset Structure} = \frac{\text{Total Fixed Assets}}{\text{Total Assets}} \times 100\%$$

Research Hypothesis

The Influence of Sales Growth on Capital Structure

Sales growth reflects a company's ability to increase revenue over time and is closely linked to the need for additional financing. As companies experience higher sales, they often require larger operational capacity, leading to increased demand for external funding, including debt. Firms with high sales growth tend to have faster and more stable cash flows, which enhance their creditworthiness and ease access to debt financing. According to the Trade-Off Theory, companies weigh the tax benefits of debt against potential risks. In the context of strong sales performance, debt can be a strategic tool for financing expansion while maintaining financial leverage within an optimal range. Prior empirical studies, including those by Gunadhi and Putra (2019) and Miswanto et al. (2022) support the assertion that sales growth positively affects capital structure.

H₁: Sales Growth has a positive influence on Capital Structure in Indonesia.

The Influence of Business Risk on Capital Structure

Business risk represents the level of uncertainty in a firm's operational income and future returns. High business risk increases the volatility of earnings, which in turn can raise the potential for financial distress. Although the Trade-Off Theory acknowledges the benefit of debt through tax shields, it also suggests caution when risk levels are elevated. Companies with high business risk tend to avoid excessive debt to maintain operational stability and prevent insolvency. Therefore, as business risk increases, firms may limit their debt usage to control exposure to financial threats. This aligns with the findings of Oktaviana dan Taqwa (2021), who reported a negative relationship between business risk and capital structure.

H₂: Business Risk has a negative influence on Capital Structure in Indonesia.



The Influence of Asset Structure on Capital Structure

Asset structure, specifically the proportion of fixed assets to total assets, affects a firm's ability to secure debt financing. Fixed assets serve as collateral, increasing creditor confidence and the availability of long-term loans. The Trade-Off Theory suggests that firms with substantial tangible assets are more inclined to use debt, given the lower perceived risk by lenders. However, the decision to rely on debt must still consider the potential financial burden it creates. A well-balanced asset structure allows companies to optimize their capital structure by leveraging their asset base while managing financial risks. This hypothesis is supported by Meilani and Wahyudin (2021), who found a positive effect of asset structure on capital structure.

H₃: Asset Structure has a positive influence on Capital Structure in Indonesia.

Conceptual Framework

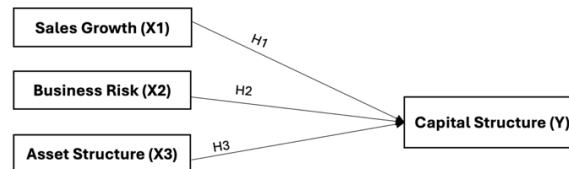


Figure 3 Path Analysis Model

Source: Data processed by the author (2025)

METHOD

The unit of analysis in this study refers to the entities being examined, which may include individuals, groups, objects, or events. For this research, the unit of analysis consists of property and real estate companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. These companies were selected based on the availability of complete financial data published on the official IDX website (www.idx.co.id).

According to Rahim et al. (2021), the population represents the entire group of elements or components that are the object of study. It comprises a generalization area consisting of objects or subjects with specific characteristics determined by the researcher to be analyzed and concluded upon. The population in this research includes 92 property and real estate companies listed on the IDX from 2021 to 2023.



The sampling method used in this study is purposive sampling, a technique that selects samples based on specific criteria set by the researcher (Fitriani, 2024). The sampling criteria are as follows:

Table 1 Number of Research Sample

Criteria	Number of Companies
Property and real estate companies listed on IDX (2021–2023)	92
Newly listed companies during the period	(10)
Companies lacking complete financial statements	(1)
Companies delisted during the period	(9)
Companies reporting consecutive losses	(39)
Outlier companies	(5)
Total Sample	28
Research Period (2021–2023)	3
Total Observations (28 companies × 3 years)	84

Source: Data processed by the author (2025)

Data Collection Technique

This study utilizes secondary data, which refers to data that already exists and is obtained from indirect sources or third parties, such as official documents and public records Hardani et al. (2020). The data collection method used is documentation, which involves gathering secondary data from property and real estate companies listed on the IDX. The documentation process included downloading and reviewing annual financial reports published during the 2021–2023.

RESULT

Descriptive Statistics

This study used descriptive statistics to analyze data by describing observed values without drawing general conclusions. Table 2 presents the descriptive statistical results of the four research variables.

Table 2 Descriptive Statistical Results of Indonesian Property and Real Estate Companies

	CS (DER)	SG	BR (ROTA)	AS
Mean	0,636	12,735	0,037	53,815
Median	0,465	8,631	0,035	51,477
Maximum	1,846	118,090	0,102	92,177
Minimum	0,002	-74,799	0,001	4,524
Std. Dev.	0,471	32,074	0,024	22,792
Jarque-Bera	10,458	19,551	3,245	2,508
Probability	0,005	0,000	0,197	0,285
Observations	84	84	84	84

Source: Data processed by the author (2025)



Model Selection Tests

To determine the appropriate panel data regression model, this study conducted Chow and Hausman tests.

Chow Test

Table 3 Chow Test

Redundant Fixed Effects Tests			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	40,387	(27,53)	0,000
Cross-section Chi-square	258,008	27	0,000

Source: Data processed by the author (2025)

The results of the Chow test show that the cross-section probability value is $0.0000 \leq 0.05$. Therefore, the Fixed Effect Model (FEM) is considered more appropriate than the Common Effect Model (CEM).

Hausman Test

Table 4 Hausman Test

Correlated Random Effects - Hausman Test			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0,334	3	0,953

Source: Data processed by the author (2025)

The results of the Hausman test show that the cross-section random probability value is $0.953 \geq 0.05$. Therefore, the result indicating that the Random Effect Model (REM) is more appropriate than the Fixed Effect Model (FEM).

Normality Test

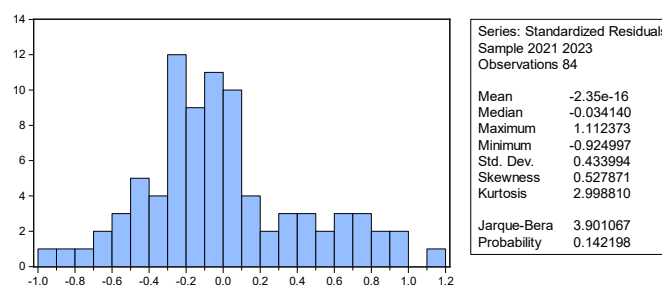


Figure 4 Normality Test

Source: Data processed by the author (2025)



Multicollinearity Test

Table 5 Multicollinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.017	7.448	NA
Sales Growth (X1)	2.351	1.202	1.037
Business Risk (X2)	4.489	3.850	1.109
Asset Structure (X3)	5.031	7.443	1.120

Source: Data processed by the author (2025)

The results of the multicollinearity test show that all independent variables have Centered VIF values less than 10, indicating that the model is free from multicollinearity.

Heteroscedasticity Test

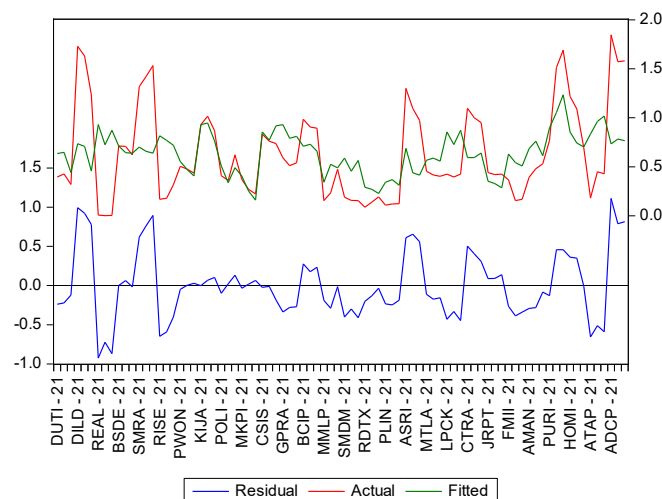


Figure 5 Heteroscedasticity Test

Source: Data processed by the author (2025)

The heteroscedasticity test was conducted using the residual graph method. The residual values ranged from -1 to 1, which indicates that the variance of the residuals is consistent. Therefore, the model is free from heteroscedasticity issues.

Autocorrelation Test

Table 6 Autocorrelation Test

Durbin-Watson stat	1,730
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Source: Data processed by the author (2025)

Based on the criteria that $DW > DU$ ($1,730 > 1,719$) and $(4 - DW) > DU$ ($2,270 > 1,730$), the regression model is considered free from autocorrelation problems.



Panel Data Regression

Table 7 Panel Data Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.164	0.178	6.512	0.000
Sales Growth (X1)	0.001	0.000	3.673	0.004
Business Risk (X2)	-4.862	0.793	-6.124	0.000
Asset Structure (X3)	-0.006	0.003	-2.319	0.023
Effects Specification				
			S.D.	Rho
Cross-section random			0.441	0.954
Idiosyncratic random			0.096	0.045

Source: Data processed by the author (2025)

Based on the estimation of the panel data regression parameters in Table 7, the resulting regression equation is as follows:

$$Y = 1.164 + 0.001X1 - 4.862X2 - 0.006X3 + e$$

From the regression equation above, the interpretation is as follows:

1. The constant value (C) of 1.164 indicates that when the independent variables are held constant, the capital structure (Y) is expected to be 1.164.
2. The coefficient of Sales Growth (X1) is 0.001, suggesting that a 1% increase in sales growth is associated with an increase of 0.001 units in capital structure, assuming other variables remain constant.
3. The coefficient of Business Risk (X2) is -4.862, meaning that a 1-unit increase in business risk is associated with a decrease of 4.862 units in capital structure, assuming other variables remain constant.
4. The coefficient of Asset Structure (X3) is -0.006, indicating that a 1% increase in asset structure leads to a decrease of 0.006 units in capital structure, holding other factors constant.

t-Test

t-Test is used to determine the individual significance of each independent variable on the dependent variable. This is done by comparing the t-statistic value with the critical value of t-table and analyzing the probability value. If t-statistic > t-table (1.990 at $\alpha = 0.05$) and the probability value < 0.05, the variable significantly affects the dependent variable. Based on the Table 7, the resulting t-Test is as follows:



1. For Sales Growth (X1), the t-statistic is 3.673 and the probability value is $0.003 < 0.05$. Since $3.673 > 1.990$, Sales Growth has a significant positive effect on Capital Structure.
2. For Business Risk (X2), the t-statistic is -6.124 and the probability value is $0.000 < 0.05$. Since $|-6.124| > 1.990$, Business Risk has a significant negative effect on Capital Structure.
3. For Asset Structure (X3), the t-statistic is -2.319 and the probability value is $0.044 < 0.05$. Since $|-2.319| > 1.990$, Asset Structure also significantly and negatively affects Capital Structure.

Goodness of Fit Test (F-Test)

Table 8 Goodness of Fit Test

F-statistic	13.062
Prob(F-statistic)	0.000

Source: Data processed by the Author (2025)

The F-test results show a probability value of 0.000, which is less than the significance level of 0.05. Therefore, the model used in this study is considered statistically fit to explain the relationship between the independent variables and the capital structure.

Coefficient of Determination (R^2)

Table 9 Coefficient of Determination

R-squared	0.328
Adjusted R-squared	0.303

Source: Data processed by the Author (2025)

The adjusted R-squared value of 0.303 indicates that approximately 30.3% of the variation in capital structure is explained by the independent variables used in this study. The remaining 69.7% may be attributed to other factors not included in the regression model.

DISCUSSION

The Effect of Sales Growth on Capital Structure

The results of the panel data regression analysis show that Sales Growth has a positive and significant effect on Capital Structure. This means that the higher the sales growth of a company, the greater its tendency to use debt financing. This is evidenced by the regression coefficient of 0.001 with a probability value of 0.004, which is below the 5% significance level. The descriptive statistics also support this result, where companies with high sales growth, such



as one firm which saw an increase from 2.721% in 2022 to 16.425% in 2023 and also reported an increase in debt-to-equity ratio (DER) from 1.420 to 1.533.

This finding aligns with the Trade-Off Theory, which posits that firms with high growth opportunities are more likely to use debt to finance expansion in order to balance tax benefits with bankruptcy costs (Gunadhi and Putra, 2019). In the financial statement notes of one of the sample companies, it is stated that the firm utilized debt as a source of working capital and investment to support increased sales. These operational and financial strategies reveal that growing companies rely more on external funding to maximize potential returns.

This result is also supported by the study of Miswanto et al. (2022), which found that sales growth significantly influences capital structure in property firms. As companies experience increased sales and cash inflow, creditors gain confidence in their ability to repay, making it easier to access loans for further development. Thus, sales growth not only strengthens the company's revenue base but also acts as a leverage enhancer in capital planning.

The Effect of Business Risk on Capital Structure

Business Risk, measured by Return on Total Assets (ROTA), has a significant negative effect on Capital Structure with a coefficient of -4.862 and a p-value of 0.000. This indicates that the higher the business risk (lower ROTA), the greater the use of debt. In one of the sampled companies, ROTA declined from 0.025 in 2022 to 0.017 in 2023, followed by an increase in DER from 0.235 to 0.475. This implies that firms with volatile earnings often resort to external borrowing to stabilize operational performance.

This finding supports the Trade-Off Theory, where firms assess the marginal benefits of debt against its marginal costs. Companies in high-risk environments may still take on debt but in a more calculated manner to maintain financial flexibility (Oktaviana and Taqwa, 2021). Notes from the financial statements of the sampled firms explain that some companies pledged their fixed assets and capitalized borrowing costs into construction-in-progress assets to gain long-term benefits from their liabilities.

Moreover, this result is consistent with the research of Nurhayadi et al. (2021) and Novita (2022), which concluded that high business risk negatively affects the company's ability to



raise debt efficiently. Although firms may require external funds to maintain liquidity amid volatility, they remain cautious to avoid financial distress costs.

The Effect of Asset Structure on Capital Structure

Asset Structure was found to have a significant negative effect on Capital Structure, as shown by a coefficient of -0.006 with a p-value of 0.022. This suggests that firms with a high proportion of fixed assets tend to rely less on debt financing. In the sample data, one company increased its asset structure ratio from 60.496% in 2022 to 67.579% in 2023, during which the DER decreased from 1.631 to 1.233.

The explanation behind this lies in the company's strategy to reduce reliance on external funding by maximizing internal resources. The notes in the financial statements show that the company paid off some of its short-term bank loans, shifted assets into investment properties, and reclassified development costs into fixed assets. These actions reflect a strategy to enhance asset quality and reduce leverage.

Although, theoretically, fixed assets can serve as collateral, this research supports the findings of Prastika and Candradewi (2019) and Rahmawati and Sapari (2021), who argue that companies with higher tangible assets often choose to finance their operations internally to avoid the burden of debt. Furthermore, Maryanti et al. (2023) suggest that in some property firms, not all assets qualify as acceptable collateral, which limits the usefulness of asset structure in accessing new debt.

CONCLUSION

Based on the results of the regression testing and analysis conducted in this study, the following conclusions are obtained:

1. Sales growth has a positive and significant effect on the capital structure of property and real estate companies in Indonesia. This indicates that companies with higher sales growth tend to use more debt in their capital structure.
2. Business risk has a negative and significant effect on capital structure. This shows that the higher the business risk (reflected by lower ROTA), the greater the company's debt usage.
3. Asset structure has a negative and significant effect on capital structure. This suggests that companies with higher fixed asset proportions tend to reduce their debt usage.



4. The independent variables—sales growth, business risk, and asset structure—jointly contribute 30.3% to variations in capital structure, while the remaining 69.7% is explained by other factors not included in this research model.

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