



The Effect of Capital Structure, Sales Growth, Firm Size, and Operational Efficiency on Financial Performance in Property and Real Estate Companies Listed on the Indonesia Stock Exchange for the Period 2021–2025

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Article History:

Received : 04-08-2026

Revised : 19-09-2026

Accepted : 23-09-2026

Keywords:

Capital Structure; Sales Growth; Firm Size; Operational Efficiency; Financial Performance; Property and Real Estate

Abstract: Financial distress is a condition that needs to be detected early because it can increase the risk of delisting and reduce investor confidence. This study aims to analyze the financial distress conditions of raw materials companies at risk of delisting on the Indonesia Stock Exchange and compare the accuracy levels of the Altman Z-Score, Zmijewski, and Springate methods. This study uses a quantitative approach with descriptive methods. The study population consisted of 13 raw materials companies with the potential for delisting, while the sample was determined using a purposive sampling technique, resulting in five companies for the 2020–2024 period. The research data consisted of secondary financial reports collected through documentation techniques and literature studies. Data analysis was performed using the Altman Z-Score, Zmijewski, and Springate models, along with calculations of accuracy and error type. The results show that the three methods produced different financial distress classifications. The average accuracy rates were 80% for Altman Z-Score, 76% for Zmijewski, and 60% for Springate, with corresponding average error rates of 20%, 24%, and 40%. These findings indicate differences in the classification results and accuracy levels among the three methods in assessing financial distress.

How to Cite: Rahayu, D., Andriyani, I., Mayasari, V., Zanariah, M. (2026). The Effect of Capital Structure, Sales Growth, Firm Size, and Operational Efficiency on Financial Performance in Property and Real Estate. Companies Listed on the Indonesia Stock Exchange for the Period 2021–2025. Escalate: Economics and Business Journal. 4(2). pp.1053-1061. <https://doi.org/10.61536/escalate.v4i02.634>



<https://doi.org/10.61536/escalate.v4i02.634>

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Introduction

As a business entity, property and real estate companies play an important role in the economy through their function of providing housing, commercial space, and infrastructure that support economic activity. In addition, this sector is closely linked to the construction, banking, and building-materials industries, so its performance is often used as an indicator of a country's overall economic condition.

Financial performance, commonly measured through Return on Assets (ROA), reflects a company's effectiveness in utilizing its assets to generate profit (Kasmir, 2021). A high ROA indicates that a company is able to manage its assets effectively to earn profit, whereas a decline in ROA indicates that asset management is less than optimal.

A number of financial ratios are thought to influence financial performance. One of them is Capital Structure, measured through the Debt to Equity Ratio (DER), which reflects the composition of a company's financing from debt and equity. A high DER increases interest expense and financial risk, which can suppress profitability (Winda Styawati & Rini Dwi Salsabila, 2026).

Sales Growth, measured through the Sales Growth Ratio (SGR), reflects a company's ability to increase revenue from its operating activities (Florenzia, 2023). Meanwhile, Firm Size, measured through the natural logarithm of total assets, reflects a company's operational scale and its capacity to utilize resources (Alifian & Susilo, 2024). Operational Efficiency, measured through the ratio of Operating Expenses to Operating Income (BOPO), reflects a company's ability to control operating costs relative to the income generated (Bhenu Artha, Bahri, & Ardhi Khairi, 2022).

Preliminary observation of the financial ratios of nine sample companies during the 2021–2025 period shows that ROA tends to be unstable and fluctuates from year to year, and does not always move in line with DER, SGR, SIZE, and BOPO, indicating a partial gap between the empirical phenomenon and existing theory and prior research.

Referring to previous studies, a research gap remains regarding the effect of Capital Structure, Sales Growth, Firm Size, and Operational Efficiency on Financial Performance. Putri Rahmalia, Desy Arigawati, and Merlantan Berliana (2025) found that capital structure has a significant effect on profitability, whereas Tarisa Nopriani and Indah Rahayu Lestari (2024) found that capital structure has no significant effect. Differing results were also found for sales growth, firm size, and operational efficiency, indicating that the relationship between these financial ratios and financial performance remains inconsistent depending on the sector, period, and model used.

This study aims to fill that gap by empirically analyzing the effect of Capital Structure, Sales Growth, Firm Size, and Operational Efficiency, both simultaneously and partially, on Financial Performance in property and real estate companies listed on the IDX during the 2021–2025 period.

Literature Review

Pecking Order Theory

Pecking Order Theory explains that companies tend to prioritize internal funding before resorting to external financing such as debt or new equity issuance. A high level of debt reflects



greater reliance on external financing, which increases interest expense and financial risk that can suppress a company's financial performance.

Signalling Theory

Spence (1973) states that companies send signals to stakeholders through financial information. Sound financial ratios, such as an adequate firm size or efficient cost management, reflect positive performance and can therefore increase investor confidence.

Financial Performance (ROA)

Kasmir (2021) explains that financial performance is a description of a company's financial condition analyzed using financial analysis tools, so that the condition reflecting the company's achievements in a given period can be determined. In this study, financial performance is measured using Return on Assets (ROA).

Capital Structure (DER)

Winda Styawati and Rini Dwi Salsabila (2026) explain that capital structure is the composition of a company's financing derived from debt and equity used to finance operational and investment activities. In this study, capital structure is measured using the Debt to Equity Ratio (DER).

Sales Growth (SGR)

Florencia (2023) explains that sales growth is the increase in a company's sales compared to the previous year. In this study, sales growth is measured using the Sales Growth Ratio (SGR).

Firm Size (SIZE)

Alifian and Susilo (2024) explain that firm size is an indicator showing the scale of a company, which can be seen from total assets, sales, or market value. In this study, firm size is measured using the natural logarithm of total assets.

Operational Efficiency (BOPO)

Bhenu Artha, Bahri, and Ardhi Khairi (2022) explain that operational efficiency reflects a company's ability to control operating expenses relative to operating income. In this study, operational efficiency is measured using the ratio of Operating Expenses to Operating Income (BOPO).

Research Methods

This study applies a quantitative approach with an associative research design to examine the effect of Capital Structure (X1), Sales Growth (X2), Firm Size (X3), and Operational Efficiency (X4) on Financial Performance (Y). The data analyzed are secondary data in the form of the annual financial statements of property and real estate companies obtained from the official publications of the Indonesia Stock Exchange (IDX) during the 2021–2025 period.



The study population comprises 92 property and real estate companies listed on the Indonesia Stock Exchange. The sample was determined using purposive sampling based on several criteria, namely companies that did not conduct an Initial Public Offering (IPO) after 2020, published complete annual financial statements, were not delisted during the study period, and did not have negative values on the research variables. Based on these criteria, 9 companies were obtained as the research sample. With an observation period of five years, the total data analyzed amounted to 45 observations.

Data were collected through the documentation method, namely by compiling annual financial statements published on the official IDX website. The research variables were measured using financial ratios: DER is calculated from total debt to total equity, SGR from the change in sales relative to the previous year, SIZE from the natural logarithm of total assets, BOPO from operating expenses to operating income, while ROA is measured using the ratio of net profit to total assets.

Data analysis was carried out using multiple linear regression with the help of SPSS version 27. Prior to hypothesis testing, classical assumption tests were performed, comprising a normality test (Kolmogorov-Smirnov), a multicollinearity test (Tolerance and Variance Inflation Factor/VIF), a heteroscedasticity test (Glejser and scatterplot), and an autocorrelation test (Durbin-Watson). The regression equation used is as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

where Y is Financial Performance, a is the constant, b₁–b₄ are the regression coefficients, X₁ = Capital Structure, X₂ = Sales Growth, X₃ = Firm Size, X₄ = Operational Efficiency, and e is the residual error. Hypotheses were tested using the F test and t test at a significance level of 0.05. In addition, the correlation coefficient and coefficient of determination (R²) were used to measure the strength of the relationship between variables and the model's ability to explain the variation in Financial Performance.

Result and Discussion

Description of Research Data

Descriptive statistical analysis aims to describe the condition of each variable studied, namely DER, SGR, SIZE, BOPO, and ROA, in property and real estate companies listed on the Indonesia Stock Exchange for the 2021–2025 period. The results are presented in the following table:

Table 1. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
DER	45	0.01	2.90	0.7007	0.54229
SGR	45	1.30	273.68	35.9209	51.17307
SIZE	45	15.98	32.00	25.6449	5.55320
BOPO	45	1.51	92.30	25.1044	20.41213
ROA	45	0.31	11.86	4.0827	2.79194



Based on Table 1, the distribution of the research data can be characterized as follows: DER has an average of 0.70, indicating a moderate level of debt usage relative to equity; SGR recorded an average value of 35.92%, illustrating considerable variation in sales growth among sample companies; SIZE of 25.64 reflects the average asset scale of the sample companies; BOPO has an average of 25.10%, indicating a fairly efficient level of operating cost management; and ROA obtained an average value of 4.08%, indicating that the sample companies were able to generate profit from their assets during the observation period.

Classical Assumption Test

Normality Test. The normality test was carried out using the One-Sample Kolmogorov-Smirnov Test. The Asymp. Sig. (2-tailed) value obtained is 0.200 (> 0.05), so the residuals meet the normality assumption. This result is consistent with the Normal P-P Plot graph, which shows that the distribution of points follows the diagonal line, as shown in Figure 1.

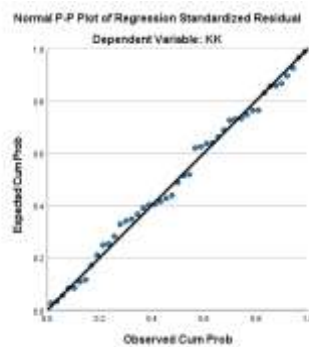


Figure 1. Probability Plot Test Results (Gambar 4.1)

Source: Author's Thesis, Data processed with SPSS 27 (2026)

Multicollinearity Test. The multicollinearity test is used to ensure there is no strong correlation among the independent variables, using the criteria of a Tolerance value > 0.10 and a VIF < 10.00 .

Table 2. Multicollinearity Test Results

Variable	Tolerance	VIF
DER	0.844	1.184
SGR	0.971	1.030
SIZE	0.957	1.044
BOPO	0.834	1.199

(Source: Data processed with SPSS 27, 2026)

Table 2 shows that all variables have a Tolerance value above 0.10 and a VIF below 10. Therefore, the regression model is declared free of multicollinearity and is suitable for further analysis.

Heteroscedasticity Test. The heteroscedasticity test using the Glejser method shows that all significance values of the independent variables on the absolute residual are above 0.05. This is

confirmed by the scatterplot below, in which the points are distributed randomly and do not form a clear pattern, as shown in Figure 2.

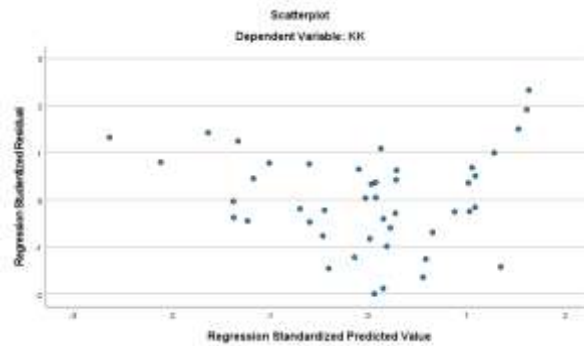


Figure 2. Heteroscedasticity Test Results (Gambar 4.2)

Source: Author's Thesis, Data processed with SPSS 27 (2026)

Thus, the regression model is declared free of heteroscedasticity.

Autocorrelation Test. Autocorrelation was tested using the Durbin-Watson (DW) method. The DW value obtained is 1.976, which lies between dU (1.7200) and 4-dU (2.2800). Therefore, the regression model is declared free of autocorrelation.

Multiple Linear Regression Test

Multiple linear regression analysis was applied to analyze the extent to which DER, SGR, SIZE, and BOPO affect ROA, both individually and jointly. The following regression equation is obtained:

$$ROA = 8.004 - 2.569X_1 - 0.013X_2 + 0.020X_3 - 0.086X_4 + e$$

Table 3. Regression Coefficients, Tolerance, and VIF

Model	B	Std. Error	t	Sig.	Tolerance	VIF
(Constant)	8.004	0.295	27.102	0.001	-	-
DER	-2.569	0.103	-24.915	0.001	0.844	1.184
SGR	-0.013	0.001	-12.315	0.001	0.971	1.030
SIZE	0.020	0.009	2.062	0.046	0.957	1.044
BOPO	-0.086	0.003	-31.362	0.001	0.834	1.199

(Source: Data processed with SPSS 27, 2026)

1. The constant of 8.004 means that the value of ROA is 8.004 when all independent variables are held constant or equal to zero.
2. The DER coefficient of -2.569 indicates a negative relationship, meaning that an increase in DER can decrease ROA by 2.569 units.
3. The SGR coefficient of -0.013 indicates that an increase in SGR is followed by a decrease in ROA of 0.013 units.
4. The SIZE coefficient of 0.020 indicates a positive effect, where an increase in SIZE can increase ROA by 0.020 units.

5. The BOPO coefficient of -0.086 indicates that an increase in BOPO can decrease ROA by 0.086 units, the largest effect among the four variables.

Correlation Coefficient and Coefficient of Determination Test

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.905 ^a	0.819	0.801	1.00253

(Source: Data processed with SPSS 27, 2026)

The R value of 0.905 falls into the very strong category, indicating that DER, SGR, SIZE, and BOPO jointly have a very strong relationship in explaining changes in ROA. The Adjusted R Square value of 0.801 means that the variables DER, SGR, SIZE, and BOPO contribute 80.1% to changes in ROA in property and real estate companies listed on the IDX during the 2021–2025 period. The remaining 19.9% of the variation in ROA is influenced by variables outside the study.

Statistical Hypothesis Testing

F Test (Simultaneous Significance). The F test was conducted to determine the joint effect of DER, SGR, SIZE, and BOPO on ROA.

Table 5. F Test (ANOVA) Results

Model	F	Sig.
Regression	45.312	0.000 ^b

(Source: Data processed with SPSS 27, 2026)

Based on the ANOVA test results, an F-value of 45.312 was obtained with a significance value of $0.000 < 0.05$. This result indicates that H_0 is rejected and H_1 is accepted, so DER, SGR, SIZE, and BOPO jointly have a significant effect on ROA in property and real estate companies listed on the IDX during the 2021–2025 period.

t Test (Partial Significance). Referring back to the t and Sig. values in Table 3, the following results were obtained for each independent variable:

1. DER has a t-value of -24.915 and a significance of $0.001 < 0.05$, so DER has a negative and significant effect on ROA.
2. SGR has a t-value of -12.315 and a significance of $0.001 < 0.05$, so SGR has a negative and significant effect on ROA.
3. SIZE has a t-value of 2.062 and a significance of $0.046 < 0.05$, so SIZE has a positive and significant effect on ROA.
4. BOPO has a t-value of -31.362 and a significance of $0.001 < 0.05$, so BOPO has a negative and significant effect on ROA.



Discussion

The SPSS analysis results show that the regression model meets the classical assumptions and can be used for hypothesis testing. Simultaneously, DER, SGR, SIZE, and BOPO have a significant effect on ROA, with an explanatory power of 80.1%, while the remaining 19.9% is influenced by other factors outside the model.

The Effect of Capital Structure on Financial Performance. Capital Structure (DER) has a negative and significant effect on ROA ($t = -24.915$, $\text{sig} = 0.001$). This means that the higher the DER, the lower the ROA, because a higher level of debt increases interest expense and financial risk. This finding is consistent with Pecking Order Theory and is in line with Yulia Ratna Sari and Setyaningsih (2023).

The Effect of Sales Growth on Financial Performance. Sales Growth (SGR) has a negative and significant effect on ROA ($t = -12.315$, $\text{sig} = 0.001$). This indicates that an increase in sales in the property sector is generally followed by an increase in operating costs, project costs, and asset expansion that grows faster than net profit. This result is in line with Jamaliyatus Soliha and R. Gatot Heru Pranjoto (2024).

The Effect of Firm Size on Financial Performance. Firm Size (SIZE) has a positive and significant effect on ROA ($t = 2.062$, $\text{sig} = 0.046$). Based on Signalling Theory, a larger firm size can serve as positive information for investors regarding a company's capacity and access to funding. This result is in line with Ikna, Samsinar, and Afiah (2025).

The Effect of Operational Efficiency on Financial Performance. Operational Efficiency (BOPO) has the strongest effect among the four variables, with a negative and significant relationship to ROA ($t = -31.362$, $\text{sig} = 0.001$). A higher BOPO indicates a heavier operating cost burden relative to income, which suppresses net profit. This result is in line with Gusmiarni, Nursina, and Hanjani (2025).

Conclusion and Recommendation

Conclusion

The results of this study on the effect of Capital Structure, Sales Growth, Firm Size, and Operational Efficiency on Financial Performance in property and real estate companies listed on the IDX during the 2021–2025 period produce the following conclusions:

1. Capital Structure has a negative and significant effect on Financial Performance in property and real estate companies listed on the Indonesia Stock Exchange during the 2021–2025 period.
2. Sales Growth has a negative and significant effect on Financial Performance in property and real estate companies listed on the Indonesia Stock Exchange during the 2021–2025 period.
3. Firm Size has a positive and significant effect on Financial Performance in property and real estate companies listed on the Indonesia Stock Exchange during the 2021–2025 period.
4. Operational Efficiency has a negative and significant effect on Financial Performance in property and real estate companies listed on the Indonesia Stock Exchange during the 2021–2025 period.



5. Simultaneously, Capital Structure, Sales Growth, Firm Size, and Operational Efficiency have a significant effect on Financial Performance in property and real estate companies listed on the Indonesia Stock Exchange during the 2021–2025 period.

Recommendation

Based on the research findings and conclusions described above, the researchers propose several recommendations as follows:

1. For Investors: Investors are advised to pay attention to capital structure, sales growth, firm size, and operational efficiency as considerations in assessing a company's financial condition and profitability before making investment decisions.
2. For Property and Real Estate Companies: Companies are expected to manage capital structure conservatively, control operating costs sustainably, and optimize the use of asset scale to support an increase in financial performance.
3. For Future Researchers: Future researchers are advised to develop this research by including additional variables, extending the observation period, and broadening the research objects and sample in order to obtain more comprehensive results.

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