

*Research Article*

## The Effects of Profitability, Leverage, Activity, and Company Size on Financial Distress

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**Abstract:** This research investigates how profitability, leverage, activity levels, and company scale impact financial distress in property and real estate firms traded on the Indonesia Stock Exchange. The selection of this sector stems from its high exposure to economic ups and downs, leaving its businesses particularly prone to financial troubles. Independent factors in the analysis include profitability, leverage, activity, and firm size, with financial distress serving as the outcome variable. Samples were drawn via purposive sampling from property and real estate entities listed on the Indonesia Stock Exchange over the 2022–2024 timeframe. Adopting a quantitative design, the study applies multiple linear regression as its core analytical tool. STATA version 17 handled the data analysis. Results show that, taken together, the independent variables exert a significant impact on financial distress. Ultimately, firms should optimize their financial metrics and pursue business growth to mitigate financial distress risks.

**Keywords:** Activity; Company Size; Financial Distress; Leverage; Profitability.

### 1. Introduction

National economic slowdowns, coupled with global crisis disruptions, have notably hampered company operations, evident in Indonesia's 2024 growth rate of just 5.03% the weakest over the previous three years (BPS). The property and real estate industry has suffered among the most severe blows, evidenced by sharp ups and downs in residential sales from 2022 to 2024, driven by erratic demand stemming from diminished consumer buying capacity. These challenges impose heavy financial strains on businesses, especially ones saddled with hefty debts and sluggish asset cycles, leaving them exposed to distress if cash from operations fails to cover commitments (Ikpesu et al., 2019). Employing the Altman Z-Score model for financial distress evaluation proves essential for spotting bankruptcy signals early on (Rachmandhika & Prabowo, 2024).

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**Table 1.** Financial Distress in Property and Real Estate Companies.

| No  | Company                       | Code | Year    |         |         |
|-----|-------------------------------|------|---------|---------|---------|
|     |                               |      | 2022    | 2023    | 2024    |
| 1.  | Adhi Commuter Properti Tbk    | ADCP | 0.704   | 1.775   | 1.929   |
| 2.  | Bukit Darmo Property Tbk      | BKDP | -1.328  | -2.026  | -2.627  |
| 3.  | Diamond Citra Propertindo Tbk | DADA | 4.212   | 0.378   | 0.301   |
| 4.  | Duta Anggada Realty Tbk       | DART | -0.389  | -0.453  | -1.173  |
| 5.  | Modernland Realty Tbk         | MDLN | 0.811   | 0.807   | -0.929  |
| 6.  | Maha Properti Indonesia Tbk   | MPRO | 1.940   | 1.335   | 0.930   |
| 7.  | Metro Realty Tbk              | MTSM | 1.820   | 0.687   | 1.224   |
| 8.  | Bliss Properti Indonesia Tbk  | POSA | -10.486 | -13.918 | -16.040 |
| 9.  | PP Properti Tbk               | PPRO | 2.182   | 0.506   | 0.567   |
| 10. | Kota Satu Properti Tbk        | SATU | 1.380   | 0.906   | 0.208   |
| 11. | Perintis Trinita Properti Tbk | TRIN | 0.796   | 0.681   | -0.425  |

Source: Financial reports and processed by the author (2026)

Information:

Blue: Distress zone

Grey: Grey zone

White: Safe zone

In 2022, seven Indonesian property and real estate companies experienced financial difficulties. This number increased to eight in 2023, although some companies managed to emerge from the situation. This trend continued in 2024, with the number of companies increasing to ten. This situation indicates that financial difficulties are no longer an individual issue but are beginning to manifest as a broader systemic problem that requires serious attention.

Profitability captures a business's capacity to earn profits from its sales, assets, and invested capital within a specific timeframe (Oktaviani & Lisiantara, 2022). Experts gauge this through Return on Assets (ROA), a favored metric in finance studies for its objectivity—it remains unaffected by capital structure choices and truly mirrors how well managers deploy company resources (Singh et al., 2023). Over the 2022–2024 stretch, ROA in the property and real estate field showed notably volatile shifts: it registered 1.7% in 2022, dipped to 1.4% the following year in 2023, and rebounded to 1.7% by 2024. That uptick in the final year signals a rebound from pandemic effects, with the sector gaining ground in resource optimization. Even so, while the profitability trajectory leans optimistic, bolstering the consistency of financial results remains critical, since these swings depend not just on asset-handling prowess but also on the financing strategies backing daily operations and growth initiatives. Here, leverage emerges as a pivotal element shaping broader financial outcomes.

Leverage gauges how effectively a firm can handle its long-term debts, highlighting its dependence on outside funding sources (Oktaviani & Lisiantara, 2022). The Debt-to-Asset Ratio (DAR) acts as a key proxy, clearly depicting what portion of total assets stems from borrowed funds (Drakos & Tsouknidis, 2024). Between 2022 and 2024, DAR in the property and real estate arena climbed steadily from 36.6% to 37.4%, revealing heightened debt dependency. This upward pattern calls for vigilance, especially considering the sector's vulnerability to interest rate swings. Absent gains in asset productivity and cash generation, such a funding approach could heighten future financial distress risks substantially.

Total Asset Turnover (TATO) represents a key ratio assessing a firm's skill in leveraging its entire asset pool to produce sales revenue (Utami & Hatiyanti, 2019). It outshines other activity measures by capturing holistic operational performance rather than isolated asset elements (Nurlaela et al., 2019). Across the 2022–2024 timeframe, TATO in property and real estate displayed notably volatile patterns: hitting 14.7% in 2022, it fell to 13.5% in 2023 amid slumping sales and inefficient asset use, before climbing back to 15.6% in 2024, signaling better asset handling though stability lagged. These swings highlight how asset management

prowess stays exposed to broader economic and market forces, positioning TATO as a vital metric for probing financial distress vulnerabilities.

Firm size serves as a metric capturing the scale of a company's assets, commonly derived by taking the natural log of total assets (Theodorus & Artini, 2018). Total assets make an ideal stand-in since they reveal a business's resource depth and steadiness, with larger holdings often pointing to brighter outlooks and greater trust from investors and lenders (Meiryani et al., 2020). From 2022 through 2024, company size in the property and real estate field edged upward progressively: starting at 28,414 in 2022, ticking to 28,416 in 2023, and peaking at 28,436 in 2024. This steady rise mirrors post-pandemic asset buildup hinting at expansion opportunities alongside bolstered capacity for resource allocation and investments. As a cornerstone element affecting fiscal health and defenses against distress, firm size merits close attention alongside core indicators like profitability, leverage, and activity when scrutinizing overall financial strength.

This research draws on data covering the 2022–2024 timeframe, capturing the financial status of property and real estate firms listed on the Indonesia Stock Exchange (IDX) amid the post-pandemic rebound period a time when Bank Indonesia reports highlight dropping property sales volumes alongside mounting operational strains in the industry. Zeroing in on this particular sector holds substantial value, given its role as a cornerstone of Indonesia's economic expansion, even as it ranks among the hardest-hit areas by lingering post-COVID disruptions; consequently, the insights gained here offer a sharper, more precise view of the latent financial risks these businesses confront.

Previous research has yielded mixed results regarding the factors influencing financial distress. Letiana & Hartono (2021) found that profitability has a effect on financial distress, while Cahyani & Hartono (2024) reported no significant effect. Regarding the leverage variable, Cyntara & Apriwandi (2025) found a effect on financial distress, whereas Sitorus et al. (2022) stated that there was no significant effect. For the activity variable, Putri & Aminah (2019) demonstrated a effect on financial distress, while Sumani (2020) found no effect. Regarding firm size, according to Gaos & Mudjiyanti (2021), it has a effect on financial distress, but Sitorus et al. (2022) reported the opposite. This inconsistency in results indicates a research gap, so further research is needed to deepen our understanding of the effects of profitability, leverage, activity, and firm size on financial distress.

## 2. Literature Review

### Agency Theory

Agency theory, according to Jensen & Meckling (1976), explained how agency theory describes the relationship between owners (principals) and managers (agents) in corporate governance as involving contractual relinquishments. Diverse interests give rise to agency conflicts, where shareholders demand decisions that maximize the firm's value, while managers prioritize their own interests. The inconsistency can compromise control measures and heighten the risk of financial instability.

### Financial Distress

Financial distress is a condition in which a company's financial performance weakens, leading to a decline in its ability to meet obligations such as debt and short-term liabilities (Jonnardi et al., 2023). This condition is typically characterized by a decline in revenue and profit, as well as an imbalance between cash inflows and expenses, making it an early stage preceding bankruptcy (Ikpesu et al., 2019).

### Profitability

The profitability ratio is a measure of determining whether/ how profitability company generates profits (Kasmir, 2019:198). Management's ability to utilize resources efficiently for maximum returns is referred specifically to the concept of profit. The profitability of a company from its total assets is measured by Return on Assets (ROA), which is one of the most important indicators. A better management of assets by the company is linked to an increase in ROA value.

### Leverage

A company's debt to its assets ratio is determined by the leverage ratio, also known as the DAR. The debt-financed assets of a company are quantified by this ratio. A high DAR indicates a heavy dependence on debt, which increases financial risk, while lowering it denotes healthier financing structures (Kasmir, 2019:158). Businesses with low debt levels typically have a higher ability to meet their financial obligations and are more likely to be able to obtain additional funding.

### Activity

A company's ability to convert its assets into sales is gauged by its activity ratios (Kasmir, 2019:174). TATO is an indicator of how well the company can utilize its total assets to support its operational activities. A high turnover on assets indicates that the business is efficient in generating revenue, while a low turnover indicates poor use of assets (Sembiring, 2021).

### Company Size

A firm's ability to manage its resources is determined by its size, which in turn affects the level of financial risk. Large enterprises typically enjoy more extensive financing options, secure management, and greater resilience against market fluctuations. The most representative way to assess a company's scale is by using total assets measures (Dang & Li, 2015). In addition, corporations with significant assets are more likely to have higher profits and less financial distress risk because of economies of scale and better diversification capabilities (Rahman & Yilun, 2021).

## 3. Proposed Method

This research adopts a quantitative methodology rooted in positivist principles to analyze data, targeting a defined population or sample, gathering information through quantifiable tools, and performing statistical tests on the stated hypotheses (Sugiyono, 2023:16). The collected data undergoes quantitative examination via descriptive statistics to assess the hypotheses' accuracy.

The target population includes yearly financial reports released between 2022 and 2024 by property and real estate sector companies. As Sugiyono (2023:126) defines it, a population encompasses all objects or subjects sharing defined traits, which the researcher has identified here to support broad generalizations and key insights from the study. Purposive sampling determined the sample from property and real estate firms listed on the Indonesia Stock Exchange (IDX).

Financial distress serves as the independent variable here, determined via a revised z-score calculation. The dependent variables comprise profitability (via Return on Assets or ROA), leverage (via Debt-to-Asset Ratio or DAR), activity (via Total Asset Turnover or TATO), and firm size. STATA 17 software facilitated the analysis through a multiple linear regression model, structured by this equation:

$$FD = \alpha + \beta_1 ROA + \beta_2 DAR + \beta_3 TATO + \beta_4 FZ + e$$

Information:

FD : Financial distress

$\alpha$  : Constant

$\beta_1 \beta_2 \beta_3 \beta_4$ : Regression coefficients for each independent variable

ROA : Return on Asset

DAR : Debt to Asset Ratio

TATO : Total Asset Turnover

FZ : Firm Size

e : Error term

## 4. Results and Discussion

STATA version 17, known as Statistical Software for Data Analysis, served as the primary tool driving the data processing and examination throughout this investigation. All data came from secondary origins, namely the comprehensive financial statements and annual reports issued by property and real estate companies during the 2022–2024 period, which were carefully sourced directly from the official website of the Indonesia Stock Exchange (IDX). The analytical methods utilized included a full suite of descriptive statistical measures, rigorous evaluations of classical assumption validity, multiple linear regression modeling, comprehensive F-tests for overall significance, individual t-tests for variable impacts, and calculations of the coefficient of determination to gauge explanatory power.

**Table 2.** Descriptive Statistics Results.

| Variabel | N   | Mean     | Std. Dev. | Min    | Max    |
|----------|-----|----------|-----------|--------|--------|
| FD       | 140 | 3.496214 | 3.662307  | -16.04 | 9.945  |
| ROA      | 140 | .13025   | .3075653  | -1.472 | .894   |
| DAR      | 140 | .1468    | .394271   | -1.748 | .819   |
| TATO     | 140 | .0627143 | .1337534  | -.14   | .96    |
| FZ       | 140 | 28.6266  | 1.875957  | 24.389 | 31.962 |

Source: STATA v.17, researcher's analysis (2026)

Table 2 reveals that the FD variable carries an average value of 3.496, spanning a broad spectrum from -16.04 up to 9.945, which underscores considerable diversity in the levels of financial distress across the dataset. An ROA mean of 0.13025 highlights the typical profitability generated from assets in these firms. With a DAR average of 0.1468, it becomes clear that roughly 14.68% of the companies' assets rely on debt financing. The TATO average stands at 0.0627, signaling somewhat subdued efficiency in turning over assets. Meanwhile, the FZ metric averages 28.6266, fluctuating between 24.389 and 31.962, offering a clear picture of the varying scales among the sampled companies.

**Table 3.** Panel Data Test Results.

| Test    | Test Criteria | Result | Conclusion      |
|---------|---------------|--------|-----------------|
| Chow    | Prob F        | 0.0000 | Best FEM Models |
| Hausman | Prob Chi Sq   | 0.0188 | Best FEM Models |

Source: STATA v.17, researcher's analysis (2026)

As detailed in the table provided above, the outcomes from the two key model selection tests the Chow test and the Hausman test clearly demonstrate that the fixed effects model (FEM) stands out as the optimal and most appropriate analytical framework for this research among all the alternatives considered.

**Table 4.** Normality Test Results 1.

| Skewness and kurtosis tests |     |              |              |             |           |
|-----------------------------|-----|--------------|--------------|-------------|-----------|
| ----- Joint test -----      |     |              |              |             |           |
| Variabel                    | Obs | Pr(skewness) | Pr(kurtosis) | Adj chi2(2) | Prob>chi2 |
| Residual                    | 192 | 0.0000       | 0.0000       | 177.71      | 0.0000    |

Source: STATA v.17, researcher's analysis (2026)

Normality assessments via skewness and kurtosis revealed that residuals deviated from a normal distribution, confirmed by a Prob>chi2 reading of 0.000 below the 0.05 cutoff. In response, the researcher took corrective action by excising extreme data points, commonly referred to as outliers.

**Table 5.** Normality Test Results 2.

| Skewness and kurtosis tests |     |              |              |             |           |
|-----------------------------|-----|--------------|--------------|-------------|-----------|
| ----- Joint test -----      |     |              |              |             |           |
| Variabel                    | Obs | Pr(skewness) | Pr(kurtosis) | Adj chi2(2) | Prob>chi2 |
| Residual                    | 140 | 0.5227       | 0.0996       | 3.18        | 0.2043    |

Source: STATA v.17, researcher's analysis (2026)

Following the outlier elimination steps, the researcher removed certain data entries to achieve a more normal distribution pattern. As a result, the final analyzed sample shrank to 140 observations. Post-removal testing confirmed normality, evidenced by a Prob>chi2 statistic of 0.2043, exceeding the 0.05 threshold.

**Table 6.** Multicollinearity Test Results.

| Variabel | VIF  | 1/VIF    |
|----------|------|----------|
| ROA      | 1.31 | 0.765670 |
| DAR      | 1.83 | 0.545496 |
| TATO     | 1.24 | 0.803221 |
| FZ       | 1.40 | 0.713768 |
| Mean     | 1.45 |          |

Source: STATA v.17, researcher's analysis (2026)

To check for multicollinearity, the study relied on the Variance Inflation Factor (VIF) metric. Every variable showed VIF scores under 10, alongside 1/VIF (tolerance) figures surpassing 0.1. These outcomes confirm the absence of multicollinearity problems in the dataset used for the research.

**Table 7.** Heteroscedasticity Test Results.

| Breusch-Pagan/ Cook-Weisberg test for heteroskedasticity |               |                |         |             |
|----------------------------------------------------------|---------------|----------------|---------|-------------|
| Assumption                                               | Variables     | H <sub>0</sub> | chi2(1) | Prob > chi2 |
| Normal                                                   | Fitted values | Constant       | 5.08    | 0.0242      |
| error terms                                              | of FD         | variance       |         |             |

Source: STATA v.17, researcher's analysis (2026)

Researchers in this study applied the Breusch-Pagan test for heteroscedasticity, where a probability figure exceeding 0.05 signals no heteroscedasticity issues in the model. However, examining the unadjusted original data uncovered heteroscedasticity problems, which the team corrected by integrating the robust clustered standard error approach into the analysis. As Hoechle (2007) explains, this technique effectively tackles both heteroscedasticity and autocorrelation, building on White's (1980) robust standard errors framework. Furthermore, Hoechle (2007) emphasizes that these robust standard errors maintain the accuracy and dependability of statistical inferences even when core regression assumptions fall short.

**Table 8.** Autocorrelation Test Results.

| Wooldridge test for autocorrelation in panel data |          |                                |
|---------------------------------------------------|----------|--------------------------------|
| F( 1, 42)                                         | Prob > F | H <sub>0</sub>                 |
| 8.012                                             | 0.0071   | No first order autocorrelation |

Source: STATA v.17, researcher's analysis (2026)

The autocorrelation test is designed to determine if residual values exhibit any interconnectedness or correlation with one another over time. In this analysis, we evaluated autocorrelation by employing the Wooldridge test method. When applied to the raw dataset, the test results clearly revealed the existence of autocorrelation within the study's model. To resolve this violation effectively, the research team incorporated the robust clustered standard error adjustment directly into the regression framework, ensuring more reliable statistical inferences.

**Table 9.** Robustness Test Results.

| Linear Regression |           |                  | OBS       |       | =                    | 140       |
|-------------------|-----------|------------------|-----------|-------|----------------------|-----------|
|                   |           |                  | F(4, 135) |       | =                    | 706.51    |
|                   |           |                  | Prob > F  |       | =                    | 0.0000    |
|                   |           |                  | R-squared |       | =                    | 0.9082    |
|                   |           |                  | Root MSE  |       | =                    | 1.1259    |
| Robust FD         | Coeff     | Robust std. err. | T         | P> t  | [95% conf. interval] |           |
| <b>ROA</b>        | 6.674037  | .316484          | 21.09     | 0.000 | 6.048129             | 7.299945  |
| <b>DAR</b>        | 4.805312  | .3761364         | 12.78     | 0.000 | 4.06143              | 5.549194  |
| <b>TATO</b>       | 5.892588  | .9829513         | 5.99      | 0.000 | 3.948613             | 7.836564  |
| <b>FZ</b>         | -.1849075 | .0546961         | -3.38     | 0.001 | -.2930796            | -.0767355 |
| <b>_cons</b>      | 6.845225  | 1.595237         | 4.29      | 0.000 | 3.690338             | 10.00011  |

Source: STATA v.17, researcher's analysis (2026)

The results of the analysis led to a regression equation explaining how dependent variables affect financial distress. When there is a constant 6.845225, financial distress occurs when the return on assets (ROA), debt-to-assets ratio (DAR), total asset turnover ratio (TATO), and company size are all zero. Financial distress is positively correlated with the profitability variable (ROA), with a coefficient of 6.674037 and an overall significance level equal to 0.000. A significant positive effect is evident on the leverage variable (DAR), which has a coefficient of 4.805312 and sensitivity of 0.000. The significance level of 0.000 and a coefficient of 5.892588 indicate significant positive effects in the activity variable (TATO). Conversely, the size of a company, with -0.1849075 and 0.0001 indicates negative impact on financial distress. The significance level (Sig.) of the simultaneous test is less than 0.05, as shown in Table 9. This result is 0.000. A cumulative effect is observed on the dependent variable used by the independent variables. With a corrected R<sup>2</sup> value of 0.9082, the impact of the independent variables on the dependent variable is 90.82%. In contrast, other factors are considered when the remaining 9.18% is not accounted for in this study.

#### **The Impact of Profitability on Financial Distress**

Partial test results show that profitability tracked via return on assets (ROA) positively and significantly affects financial distress, as its p-value of 0.000 is less than 0.05. This matches findings from (Sitorus et al., 2022) and (Prayuningsih et al., 2021), who observed a positive tie between profitability and financial distress. Such a positive impact suggests rising profitability boosts the firm's financial health metrics, cutting bankruptcy odds. ROA gauges how well a company turns assets into earnings (Septyanto et al., 2022). High-ROA businesses produce hefty profits, lifting key Altman Z-Score factors like retained earnings and pre-interest, pre-tax income, which elevate the overall Z-score, signaling stronger finances and reduced distress risk (Khoirinnisa & Lestiningsih, 2021).

#### **The Impact of Leverage on Financial Distress**

Partial test outcomes confirm that leverage gauged by the debt-to-asset ratio (DAR) exerts a positive and significant influence on financial distress, with a p-value of 0.000 below 0.05. Research from (Cyntara & Apriwandi, 2025) and (Nilasari, 2021) reinforces this, showing leverage's positive link to financial distress. The positive relationship means higher debt loads heighten distress risks for companies. Firms burdened with substantial leverage grapple with intensified demands to service debts, particularly if borrowings surpass assets. Such scenarios breed upcoming repayment issues and signal poor capital structure oversight (Malau et al., 2023). Data from this analysis reveal a steady yearly rise in DAR, pointing to growing debt reliance; without matching profit gains, this escalating liability weight amplifies financial distress vulnerability.

#### **The Impact of Activity on Financial Distress**

Partial test results indicate that activity measured by total asset turnover (TATO) positively and significantly influences financial distress, given a p-value of 0.000 under 0.05. Studies by (Mulyani et al., 2025) and (Handayani & Iswara, 2020) back this up, noting that rising activity ratios correlate with better financial health scores and lower distress probabilities. This positive connection shows that superior management of total assets for revenue creation leads to higher Z-scores. Effective asset use is vital for steady cash flows

and boosting operational edge. Elevated TATO boosts operating profits, enhancing the profitability element in bankruptcy models and elevating overall financial strength (Karyadi & Julindrastuti, 2025).

### The Impact of Company Size on Financial Distress

Partial test outcomes reveal that firm size negatively and significantly impacts financial distress, as the p-value of 0.001 falls below 0.05. This aligns with studies by (Gaos & Mudjiyanti, 2021) and (Putri & Mulyani, 2019), both confirming firm size's negative relationship with financial distress. Such a negative link means bigger companies encounter less risk of financial trouble. The reason lies in their typically larger asset bases, diverse funding channels, and superior capital market access (Mettana et al., 2021), allowing them to fulfill obligations more reliably and sustain operations smoothly. Evidence from the data points to steady year-on-year growth in company scale, signaling ongoing expansion that bolsters their ability to weather fiscal challenges.

## 5. Conclusions

From the multiple linear regression results, profitability, leverage, and activity significantly boost financial distress in property and real estate firms, whereas firm size significantly reduces it. These outcomes reveal that profitability, leverage, and activity exert positive impacts implying they can enhance fiscal stability and shield businesses from bankruptcy threats when handled effectively while firm size has a negative impact, showing that bigger companies generally cope better with financial strains than their smaller counterparts.

Taken together, these results highlight how a firm's fiscal status hinges on the combined dynamics of profitability, leverage, activity, and scale. Strong profitability paired with efficient operations forms the foundation of sound finances, yet both demand vigilant oversight to prevent growth or sales surges from eroding enduring viability. Elevated leverage calls for cautious management to avoid heightening distress risks, so leaders must strike a balance between funding setups and debt-servicing capacity. Moreover, firm size provides a buffer, as larger entities draw on vast resources and funding options for greater durability, whereas smaller ones should methodically expand activities and fortify their capital base to endure economic pressures.

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