
ASSESSING THE EFFECT OF CORPORATE GOVERNANCE, LEVERAGE, AND FINANCIAL DIFFICULTY

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ABSTRACT

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This study investigates how corporate governance mechanisms affect financial distress, with leverage as a moderating factor, in transportation and logistics firms listed on the Indonesia Stock Exchange from 2018 to 2023. The mechanisms considered include managerial and institutional ownership, the board of commissioners, the board of directors, and the audit committee. Financial distress is assessed using the Altman Z-score, where higher values reflect better financial health. The results show that managerial ownership, institutional ownership, the board of commissioners, and the board of directors are associated with stronger financial conditions. At the same time, the audit committee does not have a notable effect. Leverage does not moderate managerial ownership's role but strengthens other governance mechanisms' influence on financial health. These outcomes underline that governance effectiveness in preventing distress depends on ownership structure, board quality, and leverage. The study adds value to the literature by presenting evidence from Indonesia's transportation and logistics firms and suggests practical steps such as enhancing governance independence and managing debt prudently.

Keywords: Corporate Governance, Financial Distress, Leverage, Moderation.

INTRODUCTION

Bankruptcy is a serious condition that many companies fear because it indicates an inability to cope with financial pressures, whether due to weak risk management or drastic economic changes. (Archanskaia et al., 2023; Tron et al., 2023). Before bankruptcy, firms typically experience financial distress, where obligations surpass available resources, creating difficulties in fulfilling debt payments and sustaining operational activities. This condition is generally characterized by declining financial performance, liquidity problems, and weakening stakeholder confidence. Research on financial distress is important because many companies that initially grew rapidly fail due to their inability to maintain financial stability. (Kuzey et al., 2023; Mondayri & Tresnajaya, 2022; Ramadhanti & Subagy, 2022).

A company's financial health is a primary concern for stakeholders, including shareholders, creditors, auditors, and regulators. Early indications of financial distress typically trigger adverse market reactions, such as falling stock prices, declining investor confidence, and even increased bankruptcy risk (Chatterjee et al., 2023; Judijanto et al., 2024). Therefore, identifying the factors influencing financial distress is crucial for maintaining business continuity and economic stability.

Implementing Good Corporate Governance (GCG) principles is an important strategy to prevent financial distress. Good governance increases transparency, strengthens oversight mechanisms, and aligns the interests of management and company owners (Ningsih & Bagana, 2022; Prasetya, 2023). Thus, GCG is essential for preserving financial stability. Empirical studies suggest that ownership structure, board oversight, and audit committees influence a company's exposure to financial distress. (Apriliake et al., 2024; Lestari & Wahyudin, 2021) .

External conditions, in addition to internal factors, contribute to firm vulnerability. The transportation and logistics sector's weaknesses became evident during the Coronavirus Disease-2019 (COVID-19) pandemic, which is highly dependent on economic cycles. Declining demand, mobility restrictions, and the burden of operational costs have placed most companies in this sector under financial pressure. The cyclical nature of this sector makes it more vulnerable than non-cyclical sectors such as utilities and consumer goods. Therefore, examining the role of governance in the transportation and logistics sector is relevant, particularly during the 2018–2023 period, which is characterized by economic uncertainty (Khoja et al., 2019; Wirawan & Pangestuti, 2022).

This research gap arises because most previous studies only assess the direct relationship between governance and financial distress (Geng et al., 2025; Kusdimanto & Nurmatias, 2023) or treat leverage as a control variable. Unlike prior studies, this work introduces leverage as a moderating variable to explore whether the presence of debt reinforces or reduces governance's effect on financial distress. Furthermore, the focus on the transportation and logistics sector, which is relatively under-researched despite its strategic and cyclical nature, provides a novel contribution to the literature on governance and financial distress.

This study is grounded in two primary theoretical perspectives: agency theory and signaling theory. According to signaling theory, effective governance is a reliable indicator of a firm's financial health to investors. However, external factors often influence governance, one of which is leverage, which can increase the risk of financial distress when used excessively (Al-Zaqeba & Al-Rashdan, 2020; Prasetya, 2023; Sudaryanti & Dinar, 2019). In contrast, agency theory highlights the role of governance in reducing conflicts of interest between principals and agents. Nevertheless, the effectiveness of governance in relation to financial distress is frequently shaped by external conditions such as leverage. When debt levels are excessive, they may intensify governance shortcomings and heighten the likelihood of financial distress. (Fiorelli et al., 2025; Kalbuana et al., 2023).

Agency theory holds that when managers own more shares, they are more likely to prioritize shareholder interests, which curbs opportunism and decreases the chance of financial distress. (Begum et al., 2023; Fathya & Kristanti, 2023) . Several studies (Lesmana & Damayanti, 2021; Yuliani & Rahmatiasari, 2021) support a negative relationship between managerial ownership and financial distress, although several other studies (Puspaningsih et al., 2024; Sadaa et al., 2023) report insignificant results. This inconsistency opens up room for further testing in cyclical sectors.

H₁ : Managerial Ownership Harms Financial Distress

Institutional investors typically possess stronger analytical skills and oversight capabilities than individual investors. Within the agency theory framework, institutional ownership is an external monitoring mechanism that mitigates managerial opportunistic behavior (Ardiansyah & Wahidahwati, 2020; Puspaningsih et al., 2024). Study (Nugraha & Wirajaya, 2024; Sumiyana et al., 2023) showed a significant effect, but other studies (Maryam & Yuyetta, 2019) did not find a consistent effect.

H₂ : Institutional Ownership Harms Financial Distress

The board of commissioners oversees company operations to ensure they align with shareholder interests. In agency theory, adequate supervision lessens conflicts of interest and minimizes the likelihood of decisions that could trigger financial distress. Meanwhile, an active board of commissioners signifies transparency and good governance (Manzaneque et al., 2016; Ramachandran et al., 2020; Soesetio, 2023). Previous studies (Wiley & Kurniasih, 2021) have shown mixed results. The study reconsiders how the board of commissioners operates in the transportation and logistics industry, a field vulnerable to economic instability.

H₃ : The Board of Commissioners is in Financial Distress

The board of directors handles routine operations as well as long-term planning. In line with agency theory, a well-functioning board can improve efficiency and reduce financial distress risk. (Dell'Atti et al., 2017; Nurbaiti et al., 2021). However, empirical evidence is not entirely consistent research conducted by Farooq & Noor (2021). Research results vary, with specific studies confirming the board of directors' impact on performance and financial distress, while others found no significant evidence.

H₄ : The Board of Directors has a Negative Influence on Financial Distress

By overseeing financial disclosures, the audit committee helps maintain the clarity of reports and the credibility of the reporting process. Within the agency theory framework, the audit committee reduces the opportunity for management to manipulate information (Budiningsih et al., 2022; Kartika & Hasanudin, 2019). Several studies have proven its effectiveness, but other results show variability (Putra & Wirawati, 2024; Wiley & Kurniasih, 2021). With previous studies showing the Audit Committee's influence on financial distress, this study formulates the fifth hypothesis.

H₅ : The Audit Committee Negatively Influences Financial Distress

Agency theory suggests that managerial ownership helps align managers' goals with those of shareholders, decreasing the likelihood of financial difficulties. (Hariyani & Kartika, 2021; Taufik, 2022). However, high leverage encourages managers to take excessive risks to cover debt obligations. This weakens the effectiveness of managerial ownership in mitigating distress (Indrawan, 2023; Younas et al., 2021). Accordingly, high leverage may undermine the role of managerial ownership in preventing financial distress.

H₆ : Leverage Weakens The Negative Relationship between Managerial Ownership and Financial Distress

Institutional ownership serves as an external monitoring mechanism (agency theory) and signals a company's credibility to investors (signaling theory) (Asmarani & Purbawati, 2020; Sari & Rohman, 2023). High leverage can pose greater financial risks if not managed effectively, ultimately increasing the potential for financial distress.

Hence, leverage is viewed as a factor that may reinforce the negative association between institutional ownership and financial distress, primarily due to the added risks accompanying debt utilization. Several previous studies have examined how institutional ownership and leverage relate to corporate financial distress (Afriyani & Nurhayati, 2023; Nugraha & Wirajaya, 2024), thus formulating the seventh hypothesis as follows:

H₇ : Leverage Strengthens The Negative Relationship between Institutional Ownership and Financial Distress

Oversight of company operations is a crucial task carried out by the Board of Commissioners, which participates in strategic decision-making processes that can shape a company's vulnerability to financial distress. An effective board of commissioners can mitigate agency conflicts and signal good governance to the market (Abdullah et al., 2021; Afriyani & Nurhayati, 2023). When leverage levels are excessive, close supervision from the board of commissioners may still fall short in preventing the growing likelihood of financial distress. Thus, leverage weakens the role of the board of commissioners. Research by Wulandari & Amaniyah (2023) and Andreini & Safrida (2023) suggests that both the proportion of independent commissioners and the degree of leverage play a critical role in shaping financial distress. Therefore, the eighth hypothesis is formulated:

H₈ : Leverage Weakens The Negative Relationship between The Board of Commissioners and Financial Distress

In corporate governance, the Board of Directors' leadership significantly influences how strategic decisions are formulated, which makes important decisions that directly impact the company's financial health and operational continuity. Signaling theory emphasizes that a strong board of directors reflects strong managerial capacity (Andiani et al., 2022; Maronrong et al., 2022). However, high leverage makes inappropriate decisions more likely, increasing distress risk. Consequently, leverage diminishes the board of directors' effectiveness in alleviating financial distress. Research conducted by (Nurbaiti et al., 2021; Shahwan & Habib, 2020). Evidence suggests that the impact of the Board of Directors on financial distress is shaped by leverage. Therefore, the ninth hypothesis is presented:

H₉ : Leverage Weakens The Negative Relationship between The Board of Directors and Financial Distress

As explained by agency theory, an audit committee enhances the openness of financial information and helps mitigate the potential for financial distress. Moreover, providing a positive signal to investors (signaling theory) (Agatha, 2022). The audit committee ensures transparency in financial reporting and prevents management manipulation. Previous research (Lestari & Wahyudin, 2021; Tron et al., 2023) shows that the Audit Committee is actively involved in evaluating financial statements and that the committee's size can influence its oversight effectiveness, particularly in detecting and preventing potential manipulation by management. However, in highly leveraged companies, the financial risks of substantial debt can obscure the committee's oversight function. Substantial leverage may reinforce how the audit committee impacts financial distress. Hence, the tenth hypothesis is expressed as:

H₁₀ : Leverage Weakens The Negative Relationship Between The Audit Committee and Financial Distress

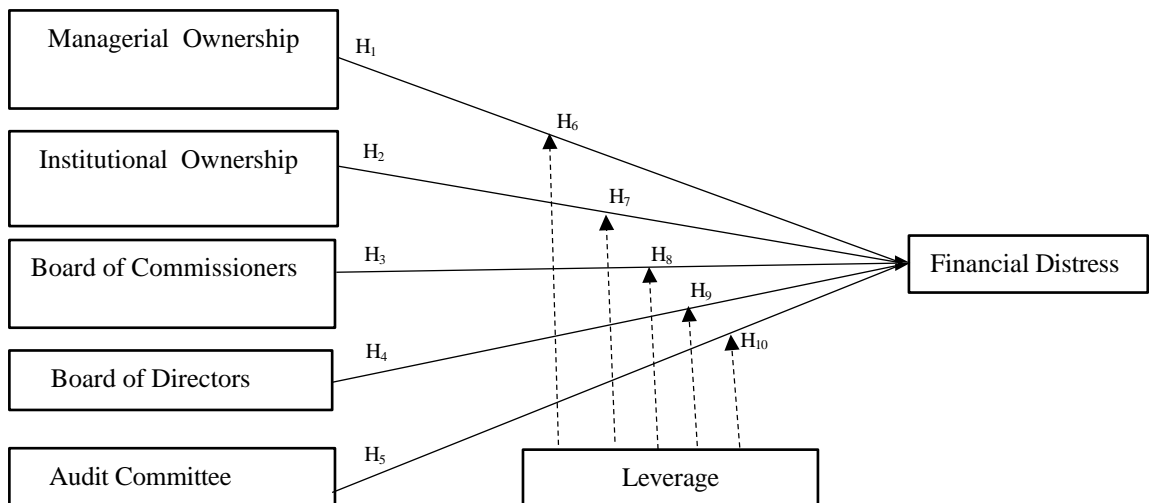


Figure 1. Framework of thinking
Source: Data processed

RESEARCH METHODS

This study uses a quantitative approach with multiple linear regression and a moderation test. This design was chosen to analyze the influence of corporate governance mechanisms on financial distress and to test the role of leverage as a moderating variable.

All transportation firms listed on the IDX between 2018 and 2023 serve as the population of this study. From this population, samples were drawn through purposive sampling, applying selection criteria relevant to the research purpose. The criteria used in the sampling process include: (1) Enterprises operating in the transportation sector and registered on the IDX within the 2018–2023 study period; (2) Entities that during the observation period have consistency in publishing annual reports with a fiscal year end date of December 31; (3) Entities that ensure the completeness of all variable data for five consecutive years of the research period; and (4) Enterprises that prepare financial statements and perform transactions using Rupiah as the reporting currency.

This study presents operational definitions for each variable used to ensure clarity and consistency in empirical testing. This study employs managerial ownership, institutional ownership, the board of commissioners, the board of directors, and the audit committee as independent variables. Financial distress, measured using the modified Altman Z-Score model, is the dependent variable, while leverage, proxied by the debt-to-equity ratio (DER), acts as the moderating variable. A summary of the definitions, indicators, and measurements for each variable is presented in Table 1 below.

Table 1.1. Variable Indicators

Variables	Definition	Indicators/ Measurements	Formula/Scale
Managerial Ownership (KM)	The ratio of shares held by the company's managers or directors to the total number of shares outstanding.	Percentage of management share ownership.	$KM = \frac{\text{Number of Management Shares}}{\text{Total Share Outstanding}} \times 100\%$ Scale: Ratio

Table 1.2. Variable Indicators (Continuation)

Variables	Definition	Indicators/ Measurements	Formula/Scale
Institutional Ownership (IP)	The percentage of total outstanding shares owned by institutions (e.g., companies, banks, pension funds, insurers).	Percentage of institutional share ownership.	$\frac{KI = \text{Number of Institutional Shares}}{\text{Total Share Outstanding}} \times 100\%$ Scale: Ratio
Board of Commissioners (DK)	The company organ tasked with carrying out supervisory functions.	Number of members of the board of commissioners in the company.	Number of Members (People) Scale: Ratio
Board of Directors (DD)	The company organ responsible for carrying out management and operational functions.	Measured by the total membership of the company's board of directors.	Number of Members (People) Scale: Ratio
Audit Committee (AC)	This committee is tasked with supporting transparency and oversight of financial reporting.	Audit Committee	Number of Members (People) Scale: Ratio
Leverage (DER) - Moderating Variable	The extent to which a company utilizes debt relative to its equity position.	Debt to Equity Ratio	$\frac{DER = \text{Total Liabilities}}{\text{Total Equity}}$ Scale: Ratio
Financial Distress (FD) - Dependent Variable	The firm's condition of financial strain.	Altman Z-Score (non-manufacturing modification)	$Z'' = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$ with: $X_1 = WC/TA$, $X_2 = RE/TAX_2 = RE/TAX_2 = RE/TA$, $X_3 = EBIT/TAX_3 = EBIT/TAX_3 = EBIT/TA$

Source: Data processed

Within the scope of this study, Good Corporate Governance (GCG) practices are analyzed does not use a comprehensive instrument such as the Association of Southeast Asian Nations (ASEAN) Corporate Governance Scorecard, but rather is proxied by governance mechanisms commonly used in previous empirical research, Consisting of managerial ownership, institutional ownership, board of commissioners, board of directors, and audit committee. The proxies are chosen considering the secondary data obtained from the annual reports of transportation and logistics companies and their relevance in representing GCG principles such as accountability, transparency, and independence. Therefore, although the full scorecard has not been implemented, this measurement remains consistent with the theoretical framework of corporate governance discussed in the literature review.

This study considers leverage as the moderating factor, measured by the proportion of debt in the firm's financing. As a moderating element, leverage has the potential to either strengthen or weaken the effect of independent variables on the dependent variable, influenced by the level of financial risk stemming from debt. The degree of leverage may shape or moderate the connection between Good Corporate Governance (GCG) and financial distress. Proper implementation of GCG is expected to mitigate the risks associated with debt use, thereby helping companies avoid severe financial distress.

A quantitative method was applied, with multiple linear regression conducted in SPSS 26, and Moderated Regression Analysis (MRA) used to test the effect of

independent variables on financial distress. Although financial difficulties can be viewed as a categorical variable (difficulty vs. non-difficulty) so that a logistic model can be used, this study follows the practice of several previous studies that use score values (Altman Z-Score) in continuous form as a proxy for financial difficulties. Thus, linear regression remains relevant in measuring the relationship between variables, although a logistic approach can be considered in future research.

This study did not include endogeneity testing or robustness checks. It could weaken the causality of the results. Therefore, future research is recommended to test the model using a more comprehensive econometric approach. It may include adopting estimation techniques such as GMM or 2SLS and testing robustness with alternative financial distress indicators, such as the Ohlson O-Score or the Springate Model.

This study finds that corporate governance aspects, such as managerial and institutional ownership and the structure of the boards of commissioners and directors, are key determinants affecting the risk of financial distress in the transportation and logistics sector. The analysis reveals that governance-related factors contribute positively to a firm's financial vulnerability, suggesting that weak managerial control and ineffective oversight can increase the risk of bankruptcy. Diagnostic checks validate that the model meets classical assumptions, with no signs of multicollinearity, heteroscedasticity, or autocorrelation, ensuring reliable and valid results. Leverage is shown to moderate the relationship between governance practices and financial distress, suggesting that excessive debt can exacerbate the effects of ineffective governance on a company's financial condition. Overall, the evidence emphasizes that strong governance and effective risk management are crucial in minimizing a company's exposure to financial distress.

RESULTS AND DISCUSSION

Table 2. Test Autocorrelation

Model Summary ^b						
No	Model	R Square	Customized R Square	Standard Error from Estimate	Durbin-Watson	
1		.975	.951	.947	64.518	1.462

Source: Data processed

The autocorrelation test produced a Durbin–Watson value of 1.462. Because the value is close to 2 (in the range of 1.5-2.5), there is no indication of autocorrelation.

Table 3. Simultaneous Significance Test

Analysis of Variance						
No	Model	Number of boxes	Df	Mean Square	F	Signature
1	Regression	5,689,240.183	5	1,137,848.037	273.352	.000 ^b
	Remainder	295,542.280	71	4,162.567		
	Total	5,984,782.463	76			

Source: Data processed

Analysis through the F-test shows that the independent variables, tested simultaneously, significantly affect the dependent variable, with an F-value of 273.352 and a significance of 0.000 (<0.050). It confirms that the combined influence of

independent and moderating variables is meaningful in determining financial distress based on the Altman Z-Score. The following is the regression equation for model 1:

Table 4. Test Coefficient Determination (R²)

Model Summary ^b				
Model	R	R Square	Adjusted n R Square	Standard Error of Estimate
1	.975	.951	.947	64.518

Source: Data processed

The model's Adjusted R² of 0.947 shows that 94.700% of the Z-score variation is explained by corporate governance, and 5.30% is due to other factors beyond the model.

Table 5. T- Test

Coefficient ^a						
No	Model	Unstandardized Coefficients		Standardized Beta Coefficient	T	Signature
		B	Standard Error			
1	(Constant)	394.010	36.646		10.752	.000
	KM	72.302	26.450	3.649	2.734	.008
	KI	14.370	5.506	.729	2.610	.001
	DK	40.341	15.924	4.071	2.533	.014
	DD	35.099	6.474	1.779	5.422	.000
	KA	5.040	6.842	.509	.737	.464

Source: Data processed

The regression equation for Model 1 is obtained from the outcomes of the coefficient tests shown in the regression table, and is presented as follows:

$$Z = 394.010 + 72.302 \text{ KM} + 14.370 \text{ KI} + 40.341 \text{ DK} + 35.099 \text{ DD} + 5.040 \text{ KA} + e$$

Managerial Ownership (KM): A significant positive coefficient (B = 72.302; Sig. 0.008). It indicates that an increase in managerial ownership corresponds to a higher Z-score, reducing the probability of financial distress. Consequently, hypothesis H₁ is accepted.

Institutional Ownership (KI): A significant positive coefficient (B = 14.370; Sig. 0.011). It indicates that institutional ownership is associated with a higher Z-score, reflecting a lower distress risk. Therefore, hypothesis H₂ is accepted.

Board of Commissioners (DK): A significant positive coefficient (B = 40.341; Sig. 0.014). This means a larger board of commissioners is associated with a higher Z score and healthier financial conditions. Thus, hypothesis H₃ is accepted.

Board of Directors (DD): A significant positive coefficient (B = 35.099; Sig. 0.000). This finding indicates that the role of the board of directors contributes to increasing the Z score and reducing the risk of distress. Based on this result, H₄ is accepted.

Audit Committee (AC): Not significant (B = 5.040; Sig. 0.464). An audit committee does not affect the Z-score or the distress risk. H₅ is rejected. The regression equation for Model 2 is as follows:

Table 6. Test Coefficient Determination (R²)

Model Summary ^b				
Model	R	R Square	Adjusted n R Square	Standard Error of Estimate
1	.980	.960	.954	60.414

Source: Data processed

The second model’s Adjusted R² of 0.954 shows that 95.40% of the variance in the dependent variable is explained by the independent and moderating variables in the model. It also indicates an increase in the analytical power of the model after leverage is included as a moderating variable.

Table 7. T-Test

Coefficient ^a						
No	Model	Unstandardized Coefficients		Standardized Beta Coefficient	T	Signature
		B	Standard Error			
1	(Constant)	404.114	39.164		10.319	.000
	KM	79.669	26.821	4.020	2.970	.004
	KI	9.854	7.147	.500	1.379	.173
	DK	43.994	15.863	4.440	2.773	.007
	DD	40.231	6.334	2.039	6.352	.000
	KA	9.937	6.761	1.004	1.470	.146
	RL	1.724	.864	.356	1.996	.050
	KM*RL	.493	.336	1.563	1.469	.147
	KI*RL	.555	.209	1.787	2.661	.010
	DK*RL	.040	.014	.831	2.934	.005
	DD*RL	.104	.036	.551	2.904	.005
	KA*RL	3.789	1.494	3.113	2.537	.014

Source: Data processed

According to the regression table’s coefficient analysis, the regression equation can be expressed as Model 2, which includes leverage as a moderating variable, and is formulated as follows:

$$Z = 404.114 + 0.493KM + 0.555 KI + 0.040DK + 0.104DD + 3.789KA + 1.724RL + e$$

The interaction coefficient between managerial ownership and leverage is insignificant (Sig. 0.147). Findings reveal that the level of leverage does not alter the association between managerial ownership and the Z-score. Thus, the role of managerial ownership in suppressing distress remains the same for both low- and high-leverage companies. Therefore, hypothesis H₆ is not supported.

The results indicate a significant positive coefficient (p = 0.010), suggesting that leverage enhances the effect of institutional ownership on the Z-score. In companies with high debt, the presence of institutional investors is more effective in monitoring, resulting in healthier financial conditions and a lower risk of distress. Thus, hypothesis H₇ is supported.

The interaction coefficient is significantly positive (Sig. 0.005). Findings reveal that higher leverage strengthens the contribution of the board of commissioners toward

increasing the Z-score. Debt pressure encourages commissioners to conduct stricter supervision, reducing potential distress. Thus, hypothesis H₈ is supported.

The interaction coefficient is also significantly positive (Sig. 0.005). It shows that leverage increases the impact of the board of directors on the Z-score. In highly indebted companies, the strategic role of the board of directors increasingly determines the company's ability to maintain financial stability. Thus, hypothesis H₉ is supported.

The audit committee and leverage interaction is significantly positive (Sig. 0.014). It shows that leverage increases the impact of the audit committee on the Z-score. Under high leverage conditions, the audit committee functions more optimally in ensuring the transparency of financial reports, thereby reducing the risk of distress. Therefore, hypothesis H₁₀ is supported.

From a theoretical perspective, corporate governance mechanisms are anticipated to reduce the likelihood of financial distress by enhancing oversight, as posited by agency theory, and by sending credible signals to the market, which aligns with signaling theory. However, the results of this study reveal several findings that contradict theoretical expectations and previous literature. These inconsistencies should be interpreted within the framework of corporate governance practices in Indonesia, particularly in the transportation and logistics sector, which experiences high business cycles and is vulnerable to external pressures.

Testing the managerial ownership (KM) variable yields a positive coefficient of 72.302, accompanied by a t-statistic of 2.734 and a significance of 0.008. Higher managerial ownership increases the Z-score and lowers financial distress risk. It is consistent with agency theory, which states that managers with more shares are more motivated to act in the company's best interest. (Fiorelli et al., 2025; Nugraha & Wirajaya, 2024; Putra & Serly, 2020) . This result is consistent with Sadaa et al. (2023), who observed a negative association between managerial ownership and financial distress. However, it differs from Puspaningsih et al. (2024), who stated that the effect was insignificant. In the context of the transportation-logistics sector, even though managerial ownership is relatively small, the existing incentives are still sufficient to reduce distress.

The institutional ownership (KI) coefficient is 14.370, and the t-value is 2.610, which is significant. 0.011 indicates a significant positive effect on the Z score. This means the higher the institutional ownership, the higher the Z score, thus decreasing distress. This result is consistent with agency theory, where institutional investors act as external monitors (Ardiansyah & Wahidahwati, 2020; Sumiyana et al., 2023). However, this finding also contradicts research by Putra & Serly (2020) and Sadaa et al. (2023), who observed that institutional investors in Indonesia prioritize short-term returns, a phenomenon influenced by the nature of the transportation-logistics sector. Economic pressures make institutional investors more cautious, resulting in a more effective monitoring function.

The board of commissioners (BOC) variable shows a positive coefficient of 40.341, t-value 2.551, and significance 0.014. The findings suggest that expanding the size of the board of commissioners improves the Z-score, which in turn diminishes financial distress risk. These results support agency theory, which emphasizes the role of commissioners in overseeing management and preventing detrimental decisions to shareholders (Abdullah et al., 2021; Manzanque et al., 2016; Ramachandran et al., 2020). This finding aligns with research by Wilevy & Kurniasih (2021), who observed that a board of commissioners mitigates financial distress. However, various other studies (Lesmana & Damayanti, 2021; Soesetio, 2023) indicate that the effectiveness of the board of

commissioners may be limited by low independence and high coordination costs. This difference in results can be explained by the context of the transportation-logistics sector, which is highly vulnerable to economic turmoil; under such conditions, board oversight becomes even more crucial and can significantly reduce distress.

The board of directors (DD) variable exhibits a positive coefficient of 35.099, with a t-value of 4.129 and a significance level of 0.000, indicating a significant positive association with the Z-score. A stronger board of directors suggests that a stronger board of directors contributes to better financial health and reduces the likelihood of financial distress. It supports agency theory, showing that directors are in charge of long-term planning and operational efficiency (Dell'Atti et al., 2017; Maryam & Yuyetta, 2019). This result is consistent with Farooq & Noor (2021), who concluded that the board of directors enhances performance and mitigates distress. In contrast, other research, such as Alafiah et al. (2022), highlighted that huge board sizes increase company vulnerability due to high coordination costs. This difference can be explained by the Indonesian context, where the relatively small and more focused number of directors still makes coordination effective, so its impact on reducing distress is more pronounced.

The audit committee has a coefficient of 5.040, t-value 0.735, and significance 0.464, showing that it does not significantly affect the Z-score or risk of distress. In theory, an audit committee should strengthen the transparency of financial reports and reduce the opportunity for management manipulation (Lestari & Wahyudin, 2021; Wilevy & Kurniasih, 2021). Nonetheless, the findings of this study are consistent with those of Lestari & Wahyudin (2021) and Wilevy & Kurniasih (2021), who stated that the effectiveness of audit committees in Indonesia remains weak due to limited independence and a more formal oversight function. Conversely, these findings differ from those of Budiningsih et al. (2022) and Putra & Wirawati (2024), who found audit committees effective in reducing distress. This contradiction can be explained by the conditions in the transportation-logistics sector, where operational complexity is high. However, the quality of audit committees is inadequate for carrying out substantive oversight functions.

The interaction test results show a positive coefficient of 0.493 with a t-value of 1.465 and a sig. 0.147 (>0.050). It means that leverage does not moderate the relationship between managerial ownership and the Z-score. This finding contradicts agency theory and previous research (Nugraha & Wirajaya, 2024; Taufik, 2022; Yuliani & Rahmatiasari, 2021) which found that leverage strengthens management's monitoring function. This condition can be explained by the low portion of managerial share ownership in transportation-logistics companies. Hence, the effect of internal monitoring remains weak both at low and high leverage. Thus, debt pressure is insufficient to change the impact of managerial ownership on financial distress.

The interaction of institutional ownership and leverage has a coefficient of 0.555 ($t = 2.622$, sig. 0.010), showing that leverage reinforces the influence of institutional ownership on the Z-score. This finding indicates that in companies with high leverage, institutional investors are more active in monitoring so that the company can maintain a healthier financial condition. This result supports Sari & Rohman (2023) and Asmarani & Purbawati (2020), who emphasize the strategic role of institutions in reducing distress. However, it differs from Nugraha & Wirajaya (2024) and Afriyani & Nurhayati (2023), who found that institutional monitoring is weak when leverage is high. This difference can be explained by the variation in the characteristics of institutional investors: some are passive and speculative, but others exercise stricter control when the company has large debts.

The interaction of the board of commissioners and leverage has a coefficient of 0.040, t-value 2.856, and significance 0.005, showing a significant relationship. It means that leverage strengthens the relationship between the board of commissioners and the Z-score. In other words, when leverage is high, the supervisory function of commissioners is more effective in reducing distress. This finding is consistent with (Mahera & Hartono, 2022; Maronrong et al., 2022; Wulandari & Amaniyah, 2023). showing that leverage, in combination with the board of commissioners, plays a role in influencing financial distress. However, this result also contradicts the literature that suggests that the board of commissioners in Indonesia is often just a formality (Soesetio, 2023). This apparent contradiction suggests that higher debt levels in the transportation and logistics sector motivate commissioners to enhance their supervisory role, preventing the company from experiencing more severe financial distress.

The interaction between the board of directors and leverage produces a positive coefficient of 0.104, with a t-value of 2.841 and a significance level of 0.005 (<0.050), indicating that leverage enhances the effect of the board of directors on the Z-score and consequently lowers financial distress. This result is consistent with agency theory, as under financial stress, the capacity of the board of directors becomes increasingly important for maintaining corporate sustainability (Farooq & Noor, 2021). The outcome also aligns with the evidence presented by Nurbaiti et al. (2021) and Shahwan & Habib (2020), who found that capital structure can influence board effectiveness. However, other literature (Lesmana & Damayanti, 2021; Utami et al., 2020) suggests that a large board can potentially increase vulnerability due to poor coordination. This difference indicates that in the transportation-logistics sector, the board of directors' effectiveness appears to increase under conditions of higher debt pressure as the crisis demands make them more responsive in decision-making.

The interaction between the audit committee and leverage yields a coefficient of 3.789, with a t-value of 2.517 and a significance of 0.014 (<0.050), indicating that leverage enhances the effect of the audit committee on the Z-score. In firms with high leverage, the audit committee plays a stronger role in overseeing financial reports, which helps prevent distress. This result is consistent with Agatha (2022) and Santoso & Nugrahanti (2022), who emphasize the audit committee's role in maintaining the integrity of financial reporting. However, it contradicts Lestari & Wahyudin (2021) and Budiningsih et al. (2022), who assess the effectiveness of audit committees in Indonesia as still weak. This contradiction can be explained by observing that leverage pressures encourage audit committees to work more actively, so their effectiveness only becomes significant in stressful financial conditions.

In summary, the insignificant moderating effect of leverage across all five governance mechanisms provides a substantial theoretical contribution. This study challenges the standard view that leverage universally strengthens the impact of governance. Instead, it demonstrates that leverage is a context-dependent moderator, whose effects vary by industry, internal governance capacity, and potentially also the regulatory environment. By offering a nuanced and integrative perspective, this study adds depth to the literature. It opens up opportunities for further investigation into the conditional effectiveness of governance mechanisms across different financial structures.

These results highlight the importance of companies in enhancing the effectiveness and independence of their governance mechanisms, rather than merely adhering to regulatory requirements. Institutional investors should be encouraged to adopt long-term ownership strategies that foster greater stability. Regulators are important in strengthening the supervisory framework, for example, by encouraging the active role of

independent commissioners, tightening audit committee regulations, and promoting transparency in debt management.

CONCLUSION

The study demonstrates that the influence of corporate governance on financial distress varies across transportation and logistics companies in Indonesia over the 2018-2023 period. Studies reveal that institutional ownership can increase the likelihood of financial distress, contrary to agency theory, which posits that it should strengthen oversight. It can be explained by the short-term orientation of institutional investors and the sector's high sensitivity to economic cycles. Conversely, managerial ownership significantly impacts the Z-score, indicating that greater managerial shareholding reduces the probability of financial distress. While these results support agency theory, the influence of managerial ownership is restricted due to its modest proportion in Indonesian companies. The findings suggest that the board of commissioners and audit committee do not substantially mitigate financial distress, highlighting a weak monitoring function in practice. The findings indicate that a larger board of directors enhances financial stability, with this effect amplified under conditions of increased debt. Leverage strengthens the link between governance and financial distress, indicating that high debt can weaken the ability of governance mechanisms to maintain financial stability.

While expanding knowledge on governance and financial distress in cyclical sectors, this research has some constraints. Firstly, governance measurements are limited to structural factors like ownership, board composition, and audit committee presence, overlooking these mechanisms' actual performance and quality. Second, the analysis only uses linear regression and moderation, while alternative models such as logistic regression or dynamic panel data could provide more robust results. The study concentrates on Indonesian transportation and logistics companies, so its results should be generalized to other industries with care. Fourthly, linear regression is utilized in this study to analyze the variables affecting financial distress. However, given that financial distress can be categorized into two conditions (distress vs. non-distress), logistic regression or probit methods can provide more precise results. Therefore, future research is recommended to use a logistic regression approach or other classification methods as robustness checks to strengthen the validity of the results.

Future research could use more comprehensive governance measures, such as the ASEAN Corporate Governance Scorecard or more detailed board independence indicators. Future research should also consider endogeneity issues and employ robustness tests to enhance empirical credibility. Examining non-cyclical industries or conducting cross-sector comparisons may offer deeper insights into how governance practices affect corporate financial resilience.

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