



The Risks of Financial Distress: Investigating the Effects of Liquidity, Leverage, and Profitability on the Transportation and Logistics Industry in Indonesia

Helmi Muhammad^{1*}, Indra Kurniawan², Kartika Hendra Titisari³, Umu Khourah⁴, Ida Nuryana⁵

¹Faculty of Economics and Business, Universitas Islam Raden Rahmat, Malang, Indonesia

²Institute of Technology and Business PGRI Dewantara, Jombang, Indonesia

³Faculty of Economics, Universitas Islam Batik, Surakarta, Indonesia

⁴Faculty of Economics and Business, Universitas Merdeka, Malang, Indonesia

⁵Institut Teknologi dan Bisnis Asia, Malang, Indonesia

Abstract

This study aims to analyze the impact of liquidity and leverage on profitability and the risk of financial distress, specifically evaluating profitability as a mediating variable within Indonesian transportation and logistics (T&L) companies. Using data from 28 T&L companies listed on the Indonesia Stock Exchange, the research employed pooled panel regression with clustered standard errors, robustness testing, and Sobel mediation tests. The results reveal that while liquidity positively impacts profitability and reduces the risk of financial distress, leverage increases the risk of financial distress without significantly affecting profitability. Furthermore, profitability successfully mediates the relationship between liquidity and financial distress, but fails to mediate the impact of leverage on financial distress. By identifying two distinct pathways for financial risk formation the liquidity-profitability pathway and the leverage-financial distress pathway these findings theoretically clarify how internal financial conditions dictate corporate health. Practically, the study implies that to avoid financial distress, T&L companies must proactively manage their liquidity, enhance asset efficiency, and strictly control their debt structures rather than relying on profitability to offset high leverage.

Keywords: *Financial Distress, Liquidity, Leverage, Profitability, Transportation, Logistics.*

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*Correspondence:

Helmi Muhammad

helmimuhammad@uniramalang.ac.id

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1. INTRODUCTION

The transportation and logistics (T&L) industry plays a strategic role in driving human mobility, goods distribution, supply chains, and cross-sector economic growth. Globally, the sector's importance is evident in the increase in public mobility and the recovery in transportation demand. For example, global air passenger traffic growth is projected to reach more than 36% in 2023 compared to the previous year (Kuzey, Fritz, Uyar, & Karaman, 2022; Statista, 2023). This role is also evident in Indonesia, where the gross domestic product (GDP) contribution from land, sea, air, rail, and transportation equipment production shows a significant trend in supporting national economic activity (Lucas, 2024). Therefore, the T&L sector not only functions as a connector for the flow of goods and people but also determines distribution efficiency, industrial competitiveness, and economic resilience. Therefore, the financial performance of companies in this sector requires a serious review before assessing the potential for financial distress.

However, T&L industry activities in Indonesia confront significant constraints, including unequal geographical and infrastructural (Santoso, Nurhidayat, Mahmud, & Arijuddin, 2021). High logistics costs have created substantial concerns to supply chains in all economic sectors, particularly efforts to boost export capacity and fully participate in global markets. Furthermore, there is a demand for responsiveness and competitiveness in the face of global competition in a dynamic market to increase profitability and improve company performance levels such as time to market, flexibility, short lead times, customer-oriented order fulfillment, minimizing order returns (accuracy), and cost optimization (Bäckstrand & Fredriksson, 2022; Salehzadeh, Tabaeian, & Esteki, 2020). Today, the T&L industry must adapt to new challenges and become more resilient as customer expectations change (e.g., package tracking, transparency, fast delivery), new technologies emerge (e.g., Internet of Things, drones), and new players enter the market (e.g., e-commerce) (Aljanabi & Ghafour, 2020). Even globalization plays an essential role in the T&L system, with its effects seen in numerous stages of the logistics process.

Several internal and external struggles will undoubtedly have an impact on the performance of T&L enterprises. T&L companies should maintain long-term financial performance to boost profitability and prevent financial distress. Financial distress will have a detrimental impact on stakeholders including banks, shareholders, investors, suppliers, and the community (Nafisa, Muhammad, & Sari, 2022). In this context, financial distress analysis is essential through the identification of several economic and financial performance variables to mitigate risks such as reduced profits, decreased cash flow, increased debt, and deteriorating asset quality (Buzgurescu & Elena, 2020; Habib, Costa, Huang, Bhuiyan, & Sun, 2020; Liang, Tsai, Lu, & Chang, 2020). Research suggests that organizations in financial distress may deceive stakeholders regarding their performance.

Although financial distress has been extensively studied through financial ratios, however, important gaps persist within the Indonesian T&L sector. Most previous studies have identified liquidity, leverage, and profitability as common predictors of financial distress (Abdullah et al., 2023; Barboza & Altman, 2024; Gelashvili, Segovia-Vargas, & Camacho-Miñano, 2022). However, few have explained how these three ratios operate in the T&L industry, which is asset-intensive, dependent on long-term financing, and vulnerable to changes in operating costs and market demand (Saidi, Mani, Mefteh, Shahbaz, & Akhtar, 2020). These characteristics, however, make the impact of liquidity and leverage on financial health not always linear, especially when profitability acts as a channel connecting the ability to meet short-term obligations, debt structure, and the risk of financial distress. Recent literature also shows that the relationship between leverage and financial distress can vary depending on the industry context, level of competition, and the company's financing structure (Ugur, Solomon, & Zeynalov, 2022). While changes in leasing standards in the transportation industry have been shown to impact liquidity, leverage, profitability, and company valuation (Slater, Greenfield, Godfrey, & Policastro, 2024), this study bridges the empirical gap by investigating the effect of liquidity and leverage on financial distress in T&L companies in Indonesia. This study also positions profitability as a mediating mechanism explaining how internal financial ratios can strengthen or weaken a company's financial health.

Unlike previous studies, which generally examine financial factors as direct predictors of financial distress, this study positions profitability as a connecting mechanism between liquidity conditions, financing structures, and a company's financial

health. With this approach, the theoretical contribution of this research is to broaden the understanding of financial distress beyond mere prediction models to explaining internal financial mechanisms. Liquidity is understood as operational capacity that can support profit generation, while leverage represents financing pressure that can impact financial health without necessarily passing through profitability. Therefore, this study distinguishes between the liquidity, profitability, and financial distress channels and the leverage and financial distress channels in explaining financial risk in the Indonesian transportation and logistics sector.

Specifically, this study investigates how liquidity and leverage affect profitability, as well as their impact on financial distress. It will assist stakeholders in analyzing and making the best decisions. Furthermore, firm management will receive early notice regarding the company's situation, allowing them to adapt their strategy and activities. This goal will assist stakeholders in analyzing and making the best decisions. Furthermore, firm management will receive early warning of the company's state, allowing them to adapt their strategies and activities. Following the previous suggestion, , we intentionally chose the T&L business because of its fast-rising contribution and importance to macroeconomic development (Saidi et al., 2020), which has piqued the interest of scholars. Additionally, the availability of transportation and logistics infrastructure has a significant impact on a company's choice of site and scope of operations. Furthermore, greater efficiency in T&L operations encourages international trade by lowering production time and costs, enhancing manufacturing processes, and harmonizing information flows. In this paper, we include the T&L sector because they are both gathered in the same category established by the database, and we acknowledge the variances in terminology.

2. LITERATURE REVIEW

This study conceptualizes financial distress as the result of an imbalance between meeting short-term obligations (liquidity), financing structure (leverage), and profit-generating ability (profitability). These three aspects are interrelated in shaping a company's financial health. Therefore, this study positions profitability as the explanatory link between liquidity and leverage and financial distress.

2.1 Financial Distress

There is no universally accepted definition for the word financial distress, as many specialists interpret it differently. This is feasible because to the complexity and variety of elements or events that trigger a company's financial difficulty (Kebede, Tesfaye, & Erana, 2024). Financial distress is a serious issue that depicts financial challenges caused by a lack of liquidity, profitability, efficiency, and solvency. Financial distress can be caused by a lack of profitability and financial independence. Whatever the definition, financial distress has a negative connotation and depicts a company's financial state, such as a lack of cash and difficulties in satisfying financial obligations (Isayas, 2021).

Financial distress may result from both internal and external factors (Habib et al., 2020). Internal factors include bad financial management, weak corporate strategy, and insufficient capital structures. External factors include economic downturns, greater competition, and regulatory changes. Although financial distress does not always end in corporate failure, a sustained fall in a company's financial health can lead to bankruptcy. This position raises financial concerns for investors and creditors, who may suffer considerable losses (Andreou, Andreou, & Lambertides, 2021). On a bigger scale, if a significant company or a group of enterprises in the same industry experiences financial difficulties, the macroeconomic environment will suffer. To protect stakeholders, it is critical to be aware of potential signs of imminent trouble. Companies in financial distress frequently exhibit indicators such as diminishing earnings, decreasing cash flow, rising debt, and poor asset quality. Furthermore, there may be frequent changes in corporate management or business structure to remedy the situation (Liang et al., 2020).

2.2 Factors Effecting Financial Distress and Hypothesis Development

Financial distress can be influenced by both internal and external factors. This study focuses on internal factors such as corporate success as measured by financial ratios, which are important in business management. According to previous study,

financial parameters like as liquidity, profitability, efficiency, and solvency improve corporate performance and reduce financial distress (Isayas, 2021).

2.3 Profitability

The profitability ratio measures a company's financial performance and ability to create profits (Patrocínio, Madaleno, & Nogueira, 2024). It is also stated that profitability is a very complex concept because it is determined by investment decisions, production plans, and the anticipating of numerous barriers. Profitability is recognized by researchers as a measure of achieving organizational financial goals and profit maximization. In studies, different metrics of profitability are mentioned, such as internal firm features. Some studies define return on assets (ROA) as a company's net profit from all total resources, and it is typically used to assess management efficiency based on asset utilization (Amponsah-Kwatiah & Asiamah, 2021; Lim & Rokhim, 2021).

Considering the company's asset-based structure, this study employs ROA as a profitability indicator. Return on assets (net income/total assets) is a prominent indicator of profitability and reflects actual profitability. According to recent data, there is a negative association between profitability and financial trouble (Rejimon & Usha, 2024). This means that if profitability is negative, the company is very likely to experience financial distress and liquidation. Similarly, if profitability is very high, the likelihood of financial distress is reduced, indicating that the organization is healthier. Support for this fact is growing with the same conclusion (Plumley, Serbera, & Wilson, 2021), which states that high profit margins explain management efficiency and lower the probability of financial distress. High profitability indicates a company's ability to generate profits from its assets. The higher a company's profitability, the greater its ability to maintain cash flow, meet obligations, and maintain business continuity. Accordingly, higher profitability is expected to mitigate the risk of financial distress.

H1: Profitability has a negative effect on financial distress.

2.4 Liquidity

Liquidity is a company's capacity to fulfill its immediate financial commitments. In this application, liquidity refers to a company's ability to transform current assets into cash to pay its obligations. Various studies show that corporate liquidity improves profitability (EL-Chaarani, EL-Abiad, & Jafar, 2023; Slater et al., 2024). This shows that the company's profits are sufficient to meet the cost difference and short-term obligations. Liquidity plays an essential role in the development of international bankruptcy theory. Companies experiencing financial challenges take longer to convert inventory into sales and earn cash profits (Mohamed, 2020).

Although there are several liquidity ratios that can be used to assess a company's liquidity, the current ratio is the most widely utilized (Gelashvili et al., 2022; Maside-Sanfiz, López-Penabad, Iglesias-Casal, & Torrelles Manent, 2024). Several studies have shown that liquidity has a positive correlation with profitability. For example, using the current ratio as a proxy for liquidity improves profitability (Gelashvili et al., 2022). Meanwhile, high-risk liquidity lowers the company's return on assets and equity (Abdelaziz, Rim, & Helmi, 2022; Chen, Shen, Kao, & Yeh, 2018). Previous studies have demonstrated that efficient assets boost liquidity and reduce the ratio of non-performing loans, consequently enhancing financial performance (Hassan & Giouvris, 2020), resulting in the avoidance of financial distress. Adequate liquidity indicates a company's ability to meet short-term obligations without disrupting operational activities. This condition can support profit generation because the company has sufficient funds to run its operations smoothly. Furthermore, healthy liquidity can reduce the risk of financial distress because the company has a better capacity to deal with cash pressures and maturing obligations. Therefore, the effect of liquidity on financial distress can occur directly or indirectly through profitability.

H2: Liquidity has a positive effect on profitability

H3: Liquidity has a negative effect on financial distress

H4. Profitability mediates the negative effect of liquidity on financial distress

2.5 Leverage

Leverage is one of the company's financial components that contribute to its capital structure. Typically, organizations

must choose between debt and equity, resulting in a trade-off between business and financial risk. The debt-to-equity ratio is a widely used measurement of leverage (Slater et al., 2024). Poor debt-to-equity ratio decisions can cause a company to experience financial distress and, finally, insolvency. Several studies have found a negative association between leverage and profitability (Alarussi & Gao, 2023; Das, Chowdhury, & Islam, 2022). This is because leverage indicates the amount to which a corporation uses borrowed funds for operational purposes. Other consequences may occur, such as trouble finding new lenders in the future. As a result, companies that use huge loans take on greater risk, whilst companies that employ more internal equity run more conservatively.

Financial leverage can have a positive impact on a company's performance since it can be utilized to discipline its management (Isayas, 2022). Leverage can be used as a disciplinary tool to assist a company's management avoid wasting resources. According to earlier studies, liquidity, efficiency, and leverage all have a beneficial impact on corporate profitability (Jolly Cyril & Singla, 2020). It indicates that big leverage combined with efficient operational operations will increase profitability and reduce the likelihood of financial distress. However, many organizations with less centralized management find it impossible to meet this need. Following the suggestions of earlier studies, leverage appears to have a higher negative impact on the performance of high-profitability and larger organizations (Ghardallou, 2023). Leverage reflects the use of debt-based financing in a company's capital structure. On the one hand, debt can help fund assets and business expansion. However, increased leverage also increases fixed costs, interest payment pressure, and the risk of default. If additional debt is not accompanied by adequate profit growth, leverage can reduce profitability and increase the risk of financial distress.

H5. Leverage has a negative effect on profitability

H6. Leverage has a positive effect on financial distress

H7. Profitability mediates the positive effect of leverage on the risk of financial distress.

3. RESEARCH METHOD

A quantitative analytic technique was used to explore the elements that influence profitability and their impact on financial distress. This study employed empirical deductive reasoning, first developing hypotheses based on relevant literature and then evaluating the hypotheses to ensure their dependability. To meet the research aims and answer the questions, an exploratory, descriptive, and inferential study were employed. Panel data analysis, statistical correlation, and regression models were among the approaches employed.

3.1 Data

The data used in this study was panel data based on financial reports from Indonesia's T&L business. The Indonesia Stock Exchange currently listed 35 public businesses. Following data mapping, 28 enterprises were identified as available from 2023 to 2025. Companies that had incomplete variable records were deleted. This number was relatively limited, but it represented publicly traded T&L companies and should not be generalized to all T&L companies in Indonesia. The research results provided empirical evidence in the context of public companies with relatively uniform financial reporting obligations. Panel data was chosen because of its capacity to monitor the same individuals across time, allowing for the investigation of dynamic reactions while controlling for unobserved heterogeneity in cross-sectional and time series data. Some of the benefits of using panel data included increased variability, less collinearity between variables, more degrees of freedom, higher efficiency, and control for individual heterogeneity, resulting in more meaningful data.

3.2 Variable Description

Return on asset is a profitability ratio that assesses a company's ability to earn profits (Patrocínio et al., 2024). This ratio, computed from earnings after taxes/total assets, is a prominent profitability indicator (Maside-Sanfiz et al., 2024). It also reflects the company's true profitability situation (Lim & Rokhim, 2021). The current ratio, as a proxy for liquidity, refers to a company's ability to transform current assets into cash to satisfy its obligations. Several studies show that corporate liquidity improves profitability (EL-Chaarani et al., 2023; Slater et al., 2024). The most widely used liquidity ratio is the current ratio, which is

determined as current assets divided by current liabilities (Batrancea, 2021; Gelashvili et al., 2022; Maside-Sanfiz et al., 2024). In several literatures, the debt-to-equity ratio is employed as a measure of leverage, specifically as a component of capital structure that demonstrates the trade-off between business risk and financial risk computed from debt-to-equity (Slater et al., 2024). This ratio indicates the extent to which a corporation uses borrowed capital for operations. The selection of the current ratio, debt to equity ratio, and return on assets is based on their suitability with the financial distress framework for the T&L sector which has relatively large operational asset requirements. This study not only examines the direct influence of independent factors (current ratio and debt to equity ratio) on financial distress, but also expands on past research by investigating whether this impact might be mediated by profitability variables (return on assets).

3.3 Financial Distress

Based on prior studies, this study uses the Z score to assess a company's financial distress (Lord, Landry, Savage, & Weech-Maldonado, 2020) because it is more suitable for service companies. The Z score is a comprehensive risk score generated by assigning varying weights to a set of the company's financial measures. Following the previous argument, the use of this Z-Score is most appropriate for the service business (Lord et al., 2020), with the following calculation formula:

$$Z = 6.56(X_1) + 3.26(X_2) + 6.72(X_3) + 1.05(X_4)$$

Where:

X_1 = Working capital/Total assets;

X_2 = Retained earnings/Total assets;

X_3 = Earnings before interest and taxes / total assets;

X_4 = Equity (book value) / total liabilities;

Z = Over All Index.

Although this study used the term "financial distress," the empirical measurement is conducted using the Altman Z-Score. The higher the Z-score, the better the company's financial condition and the lower the risk of financial distress. A Z-score greater than 2.60 indicates a low probability of financial distress; a score between 1.10 and 2.60 indicates a need for caution; and a score less than 1.10 indicates a very high probability of financial distress (Altman & Hotchkiss, 2006). Furthermore, the relationship between the explanatory variables and the Z-Score was a relationship between financial health indicators that are closely related in accounting, not a relationship that was completely independent of the ratio construction.

3.4 Analysis

This study employed path analysis, a statistical approach in structural equation modeling, to analyze probable causal links between variables, both direct and indirect. This technique identified the paths by which variables influence financial distress. Given that correlations between variables were frequently multivariate rather than bivariate, a thorough multivariate analysis is required to determine the underlying nature of these associations. We analyzed this panel data using the Eviews 12 statistical tool and two structural models (Aljandali & Tatahi, 2018). The first structural model includes a regression of CR and DER variables against ROA variables. The second structural model was constructed by regressing CR, DER, and ROA variables on Z-Score. While conducting mediation testing, we used the Sobel Test (Sobel, 1986).

$$ROA = \beta_0 + \beta_1 CR_{it} + \beta_2 DER_{it} + \varepsilon_{it} \text{ (Model 1)}$$

$$Z\text{-Score} = \beta_0 + \beta_1 CR_{it} + \beta_2 DER_{it} + \beta_3 ROA_{it} + \varepsilon_{it} \text{ (Model 2)}$$

As a robustness test, this study created a financial distress dummy variable based on the Z-Score value. The Z-Score-based dummy was chosen because this measure is consistent with the study's primary indicators and allows for sensitivity testing when financial distress is treated as a risk status, rather than a continuous score (Braunsberger & Aschauer, 2025). Companies are categorized as experiencing financial distress if their Z-Score is less than 1.10 and are coded 1, while companies with a Z-Score equal to or greater than 1.10 are coded 0.

$\text{Distress}_{it} = 1$ if $\text{Z-Score}_{it} < 1.10$

$\text{Distress}_{it} = 0$ if $\text{Z-Score}_{it} \geq 1.10$

This test was conducted to assess whether the direction of the relationship between CR, DER, and ROA remains consistent when financial distress is no longer treated as a continuous score but as a risk status. The robustness test model is formulated as follows:

$$\text{Pr}(\text{Distress}_{it} = 1) = f(\alpha + \beta_1 \text{CR}_{it} + \beta_2 \text{DER}_{it} + \beta_3 \text{ROA}_{it} + \varepsilon_{it})$$

Before testing the direct and indirect effects, this study first determined the most appropriate panel estimation model. Three estimation approaches were used: the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM). Model selection was carried out in stages. First, the Chow Test was used to compare CEM and FEM. If the Chow Test probability value is less than 0.05, then FEM is more appropriate than CEM. Second, the Hausman Test was used to compare FEM and REM. If the Hausman Test probability value is greater than 0.05, then REM is more appropriate because there is no systematic difference between the FEM and REM estimators. Third, the Lagrange Multiplier (LM) Test was used to compare CEM and REM. If the LM Test probability value is less than 0.05, then REM is more appropriate than CEM. After the best panel model was selected, this study conducted diagnostic tests to ensure the feasibility of the estimation. Multicollinearity was tested through the correlation matrix. Heteroscedasticity was tested using the White Test. If test results indicate heteroscedasticity, estimates are reported using robust standard errors to ensure greater reliability of coefficient significance. Thus, research conclusions are based not only on the panel model selection but also on estimation results corrected for potential error variance interference. Choosing between CEM, FEM, and REM offers the advantage of avoiding heterogeneity issues when analyzing long-term data (Issa, Yousef, Bakry, Hanaysha, & Sahyouni, 2021).

4. RESULTS AND DISCUSSION

4.1 RESULTS

Path analysis was used to assess the strength and importance of links between variables. We investigate direct and indirect impacts to get insight into our hypothesized model's intricate interrelationships. Unstandardized path coefficients and significance levels were used to analyze hypothesized paths. Before testing, we determined the most appropriate panel estimation model as shown in Table 1.

Table 1 | Panel Estimation Model

Model	Chow p-value	Hausman p-value	LM p-value	Selected models
Model 1: $\text{ROA} = f(\text{CR}, \text{DER})$	0.9497	0.9038	0.1096	CEM / Pooled OLS
Model 2: $\text{Z-Score} = f(\text{CR}, \text{DER}, \text{ROA})$	0.0967	0.9133	0.2485	CEM / Pooled OLS

Source: Data Processed (2026)

The panel model selection results indicate that the Common Effect Model is the most appropriate model for both equations. The Chow, Hausman, and Lagrange multiplier tests do not provide sufficient evidence to select either fixed effects or random effects at the 5% significance level. Several experiments were carried out to validate the model's and results' dependability. One such test is multicollinearity, which looks for direct correlations between independent variables (Yu et al., 2022). If the model represents multicollinearity, the regression coefficients will not represent the genuine *ceteris paribus*, implying that the variables are interconnected. In such instances, the model is unable to adequately represent the underlying influence on the dependent variable. Table 2 displays the correlation matrix for equations 1 and 2, indicating that no correlations more than 0.7 were identified between the variables.

Table 2 | Correlation Matrix of Models 1 and 2

	CR	DER	ROA
<i>Model 1</i>			
CR	1	0.0475	
DER	0.0475	1	
<i>Model 2</i>			
CR	1	0.0475	0.4427
DER	0.0475	1	0.0461
ROA	0.4427	0.0461	1

Source: Data Processed (2026)

After selecting a panel model, regression was performed to test the relationships between variables. Diagnostic results indicated heteroscedasticity (White's test <0.05), so clustered standard errors were used for estimation by company. This correction was used to increase the reliability of the coefficient significance values.

Table 3 | Regression with Clustered Standard Errors

Variabel	Coefficient	Clustered SE	t-Statistic/z	Prob.
<i>Common Effect Model 1 (Dependent Variable: ROA)</i>				
C	-0.1041	0.0446	-2.3348	0.0272
CR	0.0712	0.0300	2.3734	0.0250
DER	-0.0002	0.0005	-0.4010	0.6916
Adjusted R-squared	0.16250			
Prob (F-statistic)	0.00000			
Prob (White Test)	0.00001			
<i>Common Effect Model 2 (Dependent Variable: Z-Score)</i>				
C	-1.5198	0.7455	-2.0385	0.0527
CR	1.1866	0.3512	3.3790	0.0025
DER	-0.1367	0.0163	-8.3867	0.0000
ROA	10.6751	1.9198	5.5604	0.0000
Adjusted R-squared	0.59950			
Prob (F-statistic)	0.00000			
Prob (White Test)	0.00000			

Source: Data Processed (2026)

Robustness testing was performed by converting the Z-Score into a financial distress dummy variable using pooled logit and pooled probit using clustered standard errors by company. Overall, the robustness testing confirmed that liquidity and leverage are important factors in explaining the risk of financial distress, as shown in Table 4.

Table 4 | Robustness Test with Financial Distress Dummy

Model	Variabel	Koefisien	Clustered SE	z-value	p-value
Pooled Logit	Constant	3.0088	1.1769	2.5565	0.0106
	CR	-2.1534	1.1363	-1.8950	0.0581
	DER	0.0310	0.0095	3.2609	0.0011
	ROA	-3.2975	2.4999	-1.3191	0.1872
Pooled Probit	Constant	1.7132	0.5346	3.2045	0.0014
	CR	-1.1896	0.4816	-2.4702	0.0135
	DER	0.0167	0.0039	4.2326	0.0000
	ROA	-2.0851	1.5033	-1.3870	0.1655

The Sobel Test application was used to examine whether ROA may mediate the effect of CR or DER on Z-Score.

Source: Data Processed (2026)

TABLE 5 | Indirect Effect

Mediation Path	Coefficient a	Coefficient b	Indirect Effect	Sobel SE	z-value	p-value	Decision
CR → ROA → Z-Score	0.0738	10.6751	0.7880	0.3546	2.2219	0.0263	Mediation
DER → ROA → Z-Score	-0.0004	10.6751	-0.0045	0.0044	-1.0258	0.3050	No mediation

Source: Data Processed (2026)

4.2 DISCUSSION

This discussion is structured around the fact that financial distress is measured using the Z-Score. Therefore, a positive coefficient on the Z-Score indicates improved financial health or a decreased risk of financial distress, while a negative coefficient indicates an increased risk of financial distress. This research model positions liquidity, leverage, and profitability as internal factors shaping the financial condition of T&L companies in Indonesia.

The research findings support H1, namely that profitability negatively influences the risk of financial distress. A higher ROA indicates a company's ability to convert assets into profits. This indicates a better capacity to meet obligations, maintain cash flow, and maintain business sustainability. These results align with the findings of several previous studies (Platt & Platt, 2002; Plumley et al., 2021; Rejimon & Usha, 2024), which emphasize that profitability is a crucial buffer against financial distress. In the context of Indonesian T&L, these findings are particularly significant because this sector is asset-intensive and requires significant operational costs. Management cannot simply add assets or expand services; they must ensure that their fleet, warehouses, distribution networks, and operational assets are truly profitable.

The findings also support H2 and H3. Liquidity has a positive effect on profitability and reduces the risk of financial distress. This suggests that the current ratio is not simply an indicator of the ability to pay short-term liabilities but also reflects the smoothness of operations. T&L companies require adequate cash and current assets to pay for fuel, maintenance, labor, suppliers, and other operational obligations. These results are consistent with several previous studies that found that liquidity can strengthen financial performance (Batrancea, 2021; EL-Chaarani et al., 2023; Gelashvili et al., 2022; Slater et al., 2024). However, these results differ from other findings that suggest that excess liquidity can depress profitability (Abdelaziz et al., 2022; Chen et al., 2018). This difference confirms that in the Indonesian T&L sector, liquidity appears to still function as operational capacity, rather than idle assets.

Support for H4 indicates that profitability mediates the effect of liquidity on financial distress. This means that liquidity reduces the risk of distress not only directly but also through increased profits. This finding broadens the understanding that liquidity, profitability, efficiency, and solvency are crucial elements in financial distress (Isayas, 2021). Managerially, these results emphasize that liquidity policies should be directed toward productive activities. Companies need to expedite receivables collection, maintain minimum operating cash, manage current liability maturities, and ensure current assets support smooth service delivery. Healthy liquidity will be more effective in reducing financial distress if it can increase profitability.

Conversely, H5 was not supported because leverage had no significant effect on profitability as seen in table 3. In the table, the p-value of DER > 0.05. This finding suggests that increasing debt does not automatically increase or decrease the profits of T&L companies. Empirically, T&L companies in Indonesia allocate a significant portion of their debt to finance fixed asset investments such as fleets, warehouses, and distribution infrastructure, which generate long-term economic benefits. Therefore, additional debt in the current period does not necessarily immediately increase profitability, as profits are more determined by asset utilization rates, operational efficiency, delivery volumes, and cost control than by the amount of debt financing. This is further compounded by the aggregate effects of supply chain disruptions, which increase delivery times, raise prices, and lead to inventory shortages, significantly slowing the economy (Alessandria, Khan, Khederlarian, Mix, & Ruhl, 2023). This result differs from several studies that found an effect of leverage on profitability (Alarussi & Alhaderi, 2018; Alarussi & Gao, 2023; Das et al., 2022). This difference may be explained by the nature of T&L, which requires substantial financing for long-term assets, so the impact of debt on profits is not always apparent in the short term. In this context, debt can increase operating capacity, but its benefits depend on the efficiency of asset use, utilization rates, and the company's ability to generate income from these investments.

The results support H6, which states that leverage increases the risk of financial distress. A higher DER lowers the Z-Score, thereby increasing financial distress. This fact aligns with findings that leverage can increase the risk of financial distress through interest expense, default risk, and financing pressure (Ugur et al., 2022). These results also reinforce the notion that leverage can have a detrimental impact when not accompanied by improved performance (Ghardallou, 2023). In the context of

Indonesia's T&L, debt becomes riskier because companies face high fixed costs, significant asset requirements, and uncertain demand. Therefore, management needs to review its debt structure, refinance if interest costs are too high, extend the tenor of obligations, and dispose of unproductive assets.

H7 was not supported because profitability did not mediate the effect of leverage on financial distress. This suggests that leverage operates through the financing pressure channel, not through profitability. In other words, debt can directly weaken financial health through interest obligations, maturities, and liquidity risk, even though profits have not yet declined significantly. This finding aligns with the Trade-Off Theory, which states that debt usage exceeding the optimal level will increase the costs of financial distress, such as interest expense, default risk, and refinancing pressure, leading to financial difficulties despite still being able to generate profits (Myers, 1984). Empirically, this condition is relevant to the capital-intensive nature of the transportation and logistics industry in Indonesia, where investments in fleets, warehousing, and distribution infrastructure are largely financed through debt, which creates fixed payment obligations. As a result, cash flow pressures to cover interest and principal can emerge more quickly than declining profitability, thus directly impacting financial distress with leverage. These results clarify the distinction between liquidity and leverage. Liquidity reduces distress through the operational and profitability channels, while leverage increases distress through the burden on the capital structure. These findings also suggest that the debt discipline function is insufficiently strong in the context of Indonesian T&L companies.

Overall, this study identifies two main pathways leading to financial distress. First, the liquidity–profitability channel, where healthy liquidity supports profits and strengthens financial health. Second, the leverage–distress channel, where high debt directly increases financial distress. The managerial implications are clear: T&L companies need to manage liquidity productively, improve asset efficiency, and control leverage through measured debt restructuring. Thus, preventing financial distress is not solely achieved through increasing profits, but also through strengthening operational cash flow and more prudently managing financing structures.

5. CONCLUSION

The findings of this research indicate that liquidity plays a crucial role in strengthening profitability and reducing the risk of financial distress in T&L companies in Indonesia. Profitability has also been shown to be a factor in strengthening a company's financial health. Conversely, leverage has not been shown to increase profitability, but rather increases the risk of financial distress. These findings suggest that a company's ability to maintain current assets and generate profits is a greater determinant of financial resilience than simply using debt financing. Furthermore, profitability mediates the relationship between liquidity and financial distress, but not between leverage and financial distress. Thus, liquidity operates through operational channels and profits, while leverage operates more directly through structural financing pressures.

6. LIMITATION AND IMPLICATION

This study highlights the benefit of using financial performance analysis can assist T&L management and firms in general in adjusting. They can concentrate on liquidity performance, capital structure, and profitability because these factors can influence financial productivity and distress. This study has consequences for Indonesian corporate leaders, investors, and policymakers in terms of cash flow, transition costs, and profit targets because of changes in T&L company financing decisions. Companies can utilize the findings of this study to determine liquidity, capital structure, and profitability. Given the importance of the variables on which investors base their judgments, this study will assist investors in making decisions not just by focusing on liquidity and leverage, but also by considering the other determinants stated. Furthermore, government organizations can implement laws based on their leverage structure to protect T&L companies from financial distress.

Future research could further investigate core businesses other than T&L, such as energy, consumer, healthcare, finance, property and real estate, technology, infrastructure, and so on, which are critical to a country's development. In this study, we conducted research using the company's internal factors. Future study can incorporate external variables (such as interest rates, GDP, and inflation) to provide a more comprehensive macro view. Due the ever-changing economic conditions, future research

might examine the impact of economic uncertainty on leverage, capital structure, and financial distress across businesses and sectors in many nations. Furthermore, various human resource components, such as intellectual capital and corporate social responsibility (CSR), can be considered because both are strongly tied to corporate capital and have a substantial impact on corporate performance.

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