Financial Distress Zones of Land Transportation Companies Listed on the Indonesia Stock Exchange Using Altman Z-Score

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Abstract

Passenger land transportation has gained increasing attention in recent years, particularly in relation to corporate financial performance. This study aims to evaluate the financial condition of passenger land transportation sub-sector companies listed on the Indonesia Stock Exchange using the Altman Z-Score method. A descriptive quantitative approach with purposive sampling is employed, resulting in seven selected companies. The study utilizes secondary data obtained from corporate financial statements covering the period from 2019 to 2023. Financial ratios, including working capital, retained earnings, profitability, capital structure, and asset utilization, are analyzed to generate Z-Score values and classify firms into the safe zone, grey zone, and distress zone. The results indicate that four companies fall within the distress zone, one is classified in the grey zone, and two are categorized in the safe zone. These findings highlight varying levels of financial resilience within the passenger land transportation sub-sector.

Keywords: *Financial Distress; Bankruptcy Prediction; Altman Z-Score.*

JEL Classification: G32, G33

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Introduction

The transportation industry plays a strategic role in supporting Indonesia's economic growth. Along with rapid technological advancements and increasing internet penetration, public mobility patterns have shifted significantly toward the use of digital-based transportation services. This transformation has stimulated business expansion within the transportation sector and contributed substantially to national economic performance. In 2022, the transportation sector contributed 16.10% to Indonesia's Gross Domestic Product (GDP), while the transportation and warehousing industry recorded the highest year-on-year growth of 10.33% in the fourth quarter of 2022–2023 (Badan Pusat Statistik, 2024).

Despite this positive macroeconomic performance, the financial conditions of transportation companies are not always sound. Several firms continue to face financial challenges, as reflected in low liquidity, declining profitability, and increasing debt burdens. Financial performance evaluation is commonly conducted through financial statement analysis, which provides essential information regarding a company's financial position and operating results and serves as a basis for economic decision-making (Prayat et al., 2023). Financial statements therefore play a crucial role in assessing corporate sustainability and bankruptcy risk.

Financial difficulties experienced by companies may arise from both internal and external factors. The COVID-19 pandemic, for instance, significantly reduced transportation demand in Indonesia and globally, placing severe financial pressure on transportation companies. Under such conditions, firms were required to make strategic decisions to maintain business continuity, including restructuring capital structures or postponing debt repayments. These challenges increased the likelihood of financial distress, which, if not properly managed, may ultimately lead to bankruptcy.

Passenger land transportation represents a vital sub-sector within the transportation and logistics industry. In addition to its economic contribution, this sub-sector plays an important role in reducing traffic congestion and carbon emissions by encouraging the use of public transportation. However, inadequate financial management may weaken service quality and

limit operational flexibility. Recent studies emphasize the relevance of bankruptcy prediction models in identifying early financial risks. For example, research in the telecommunications sub-sector using the Altman Z-Score model for the 2020–2022 period demonstrates that certain financial ratios can effectively predict financial distress at an early stage (Amalia & Iskak, 2023). Similarly, other studies confirm that the Altman Z-Score model remains effective in classifying firms into healthy, grey area, and distress categories across various industries in Indonesia (Rachelia & Jefri, 2025).

The Altman Z-Score is a statistical model designed to assess corporate financial health by combining five key financial ratios. Numerous recent studies have applied this model across different industrial contexts to predict bankruptcy risk using up-to-date data, including pre-, during-, and post-pandemic periods (Susiana & Purwanti, 2021). The continued relevance of the Altman Z-Score lies in its ability to provide early warning signals for management, investors, and other stakeholders, enabling proactive strategic decision-making.

Based on these contemporary phenomena and recent empirical findings, this study aims to analyze the bankruptcy potential of passenger land transportation companies listed on the Indonesia Stock Exchange using the Altman Z-Score method for the 2019–2023 period. This study is expected to provide empirical evidence on the post-pandemic financial condition of passenger land transportation companies and offer practical insights for corporate management, investors, and policymakers in mitigating bankruptcy risk within this strategically important sub-sector.

This study offers a distinctive contribution by focusing specifically on the passenger land transportation sub-sector, which remains underrepresented in bankruptcy prediction literature. While previous studies predominantly examine manufacturing, banking, and retail industries, this research highlights the structural financial vulnerability of transportation service firms in a post-pandemic economic environment. Therefore, this study extends existing financial distress literature by providing sector-specific empirical evidence from an emerging market context.

Accordingly, this study aims to (1) calculate the Altman Z-Score values of passenger land transportation companies listed on the Indonesia Stock Exchange during the 2019–2023 period, (2) classify each company into safe, grey, or distress zones, and (3) analyze the dominant financial factors contributing to corporate financial distress in the transportation sector.

Literature Review

Corporate performance measurement can be conducted through various approaches, one of which is the evaluation of financial performance based on financial statement analysis. Periodically published financial statements provide relevant information regarding a company's financial position, operating results, and overall financial condition, which can be used to assess current performance and predict future conditions. Financial statement analysis also serves as an important tool for identifying potential financial distress and bankruptcy risk.

Bankruptcy prediction can generally be performed using two main approaches, namely univariate and multivariate methods. The univariate approach analyzes financial variables individually to identify their relationship with bankruptcy. According to (Hanafi, 2004), univariate analysis is conducted by examining specific financial variables that are presumed to influence or be associated with corporate bankruptcy. Financial ratio analysis is one of the most common forms of univariate analysis and is widely used by investors to evaluate a company's financial condition through indicators such as working capital, profitability ratios, liquidity ratios, and leverage ratios (Bapepam, 2005). Although useful, the univariate approach has inherent limitations because each financial ratio may provide different signals regarding a firm's financial health, which may lead to incomplete or inconsistent interpretations when analyzed separately.

The univariate approach assumes that the distribution of financial variables in financially distressed firms differs from that of non-distressed firms. However, bankruptcy is a complex phenomenon that cannot be explained solely by a single financial variable. In addition to internal company factors, external factors such as changes in interest rates, macroeconomic downturns, and unemployment levels may also influence the likelihood of bankruptcy. These limitations have encouraged the development of multivariate approaches that integrate multiple financial and economic variables simultaneously to improve predictive accuracy.

Multivariate analysis employs two or more variables concurrently within a single equation to predict bankruptcy more effectively (Hanafi, 2004). This approach is considered more efficient because it simplifies financial analysis by combining multiple financial ratios into a single predictive model rather than interpreting each ratio individually (Bapepam, 2005). In

multivariate models, financial ratios act as independent variables, while the dependent variable represents bankruptcy status or the probability of financial distress.

One of the most widely used multivariate models for bankruptcy prediction is the Altman Z-Score model. This model was developed by combining five financial ratios that represent liquidity, profitability, solvency, and activity aspects of a firm. These ratios include working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, market value of equity to book value of total debt, and sales to total assets. The integration of these ratios enables the Altman Z-Score model to classify companies based on their level of bankruptcy risk. The Altman Z-Score model is expressed by the following equation (Altman, 1968):

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$$

The ratio of working capital to total assets (X_1) measures a company's ability to generate net working capital from its total assets. The retained earnings to total assets ratio (X_2) reflects the firm's capacity to accumulate internally generated funds, indicating long-term profitability and financial stability. The earnings before interest and taxes to total assets ratio (X_3) represents the firm's efficiency in utilizing its assets to generate operating profits. The market value of equity to book value of total debt ratio (X_4) indicates the firm's ability to cover its obligations based on the market value of shareholders' equity. Meanwhile, the sales to total assets ratio (X_5) measures the effectiveness of asset utilization in generating revenue.

The resulting Z-Score is then compared with predetermined cut-off values. Firms with Z-Score values above 2.675 are classified as financially healthy and are predicted not to face bankruptcy. Firms with Z-Score values below 1.81 are considered to have a high probability of bankruptcy. Firms with Z-Score values between 1.81 and 2.675 fall into the grey area, where it is not possible to clearly determine whether the firm is financially healthy or distressed. Due to its ability to provide early warning signals up to two years prior to bankruptcy, the Altman Z-Score model remains a relevant and widely applied tool in both academic research and financial practice.

Recent international studies also confirm the continued relevance of financial distress prediction models in emerging markets. For instance, Kliestik et al. (2020) demonstrate that bankruptcy prediction accuracy significantly improves when financial ratios are analyzed within a dynamic economic context. Similarly, Altman et al. (2017) provide empirical evidence that the Z-Score model remains robust across different institutional environments, including

developing economies. Furthermore, Prusak (2018) emphasizes that liquidity and retained earnings are among the most critical indicators of corporate survival probability. These findings strengthen the theoretical foundation of the present study and justify the application of the Altman Z-Score model in the Indonesian transportation sector.

The theoretical framework of this study is grounded in financial distress and bankruptcy prediction theory, which assumes that corporate failure is preceded by systematic deterioration in liquidity, profitability, leverage, and efficiency indicators. The Altman Z-Score model operationalizes this theoretical assumption by integrating multiple financial dimensions into a single predictive index, thereby providing a theoretically coherent and empirically validated framework for assessing corporate financial health.

Research Methods

This study employs a quantitative descriptive approach to assess the financial condition and bankruptcy potential of passenger land transportation companies listed on the Indonesia Stock Exchange. Quantitative research emphasizes numerical data analysis to objectively describe financial phenomena, while a descriptive approach is applied to portray the financial characteristics of companies without examining causal relationships (Sugiono, 2017). This research design is widely used in bankruptcy prediction studies that rely on financial ratio analysis derived from corporate financial statements.

The study uses secondary data obtained from audited annual reports published by the sampled companies and officially disclosed through the Indonesia Stock Exchange. The observation period spans from 2019 to 2023, allowing the analysis to capture financial performance before, during, and after the COVID-19 pandemic, which significantly affected the transportation sector.

The population consists of all companies operating in the passenger land transportation sub-sector listed on the Indonesia Stock Exchange during the study period. A purposive sampling technique was applied to select companies that met specific criteria, namely: being listed prior to 2019, providing complete financial statements throughout the 2019–2023 period, and not experiencing delisting or sector reclassification. Based on these criteria, seven companies were selected as the research sample. Purposive sampling is commonly applied in financial distress studies to ensure data completeness and relevance.

The variables analyzed in this study are financial ratios incorporated in the Altman Z-Score model, which represent key aspects of corporate financial performance, including liquidity, profitability, leverage, and asset utilization. These ratios were calculated directly from balance sheets and income statements and used as indicators to evaluate the likelihood of financial distress. Previous empirical studies have confirmed the continued relevance and reliability of the Altman Z-Score model for bankruptcy prediction in emerging markets, including Indonesia (Chantika et al., 2025).

Data collection was conducted using documentation techniques, whereby financial data were systematically gathered, verified, and recorded from publicly available sources. The data analysis process involved calculating the required financial ratios and classifying companies into financial condition categories based on established Altman Z-Score cut-off criteria. This classification enables the identification of companies with healthy financial conditions, those experiencing financial distress, and those positioned in the grey area. The use of ratio-based multivariate analysis provides a comprehensive overview of corporate financial health and supports early detection of bankruptcy risk, which is essential for managerial decision-making and investor evaluation (Maulana, 2024).

Although this study employs a descriptive quantitative design, the methodological approach is aligned with best practices in bankruptcy prediction research. Prior comparative studies indicate that the Altman Z-Score model consistently exhibits competitive predictive accuracy relative to alternative models such as Springate and Zmijewski (Mulya et al., 2024; Sembiring & Sinaga, 2022). Therefore, the selected method is considered both appropriate and methodologically robust for the research objectives.

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Results and Discussions

The results are presented systematically through a series of financial ratio tables and Z-Score classifications, allowing transparent interpretation of each firm's financial condition. This structured presentation facilitates comparative analysis across companies and time periods, thereby enhancing analytical clarity and result reliability.

This study utilizes financial statement data of land transportation companies listed on the Indonesia Stock Exchange during the period 2018–2023. The analysis employs the Altman Z-Score model, which integrates five key financial ratios to assess corporate financial conditions and to predict potential bankruptcy. The resulting Z-Score classifies firms into three categories: non-bankrupt, bankrupt, and the *grey area*, which represents a financial condition between healthy and distressed (Altman, 1968).

The first ratio analyzed is Working Capital to Total Assets (X1), which measures a company's ability to generate net working capital from its total assets. Net working capital is calculated as the difference between current assets and current liabilities. This ratio reflects short-term liquidity, where negative values indicate liquidity pressure.

Table 1. Working Capital to Total Assets (X1) of Land Transportation Companies Listed on the Indonesia Stock Exchange (2018–2023)

Year	Company Code						
	ASSA	**BIRD**	**BPTR**	**LRNA**	**SAFE**	**TAXI**	**WEHA**
2018	-0,151	0,066	-0,198	0,042	-0,595	-0,870	-0,102
2019	-0,121	0,025	-0,234	0,070	-0,463	-1,067	-0,072
2020	-0,094	0,083	-0,220	-0,018	-0,517	-1,738	-0,081
2021	-0,020	0,121	-0,133	0,001	-0,994	0,772	-0,077
2022	-0,034	0,068	-0,118	-0,027	-0,657	0,912	0,055
2023	-0,027	0,082	-0,067	-0,009	-0,904	0,814	0,193
Mean	-0,074	0,074	-0.162	0,010	-0,688	-0,196	-0,014

Source: Processed data (2025)

Based on Table 1, most companies exhibit negative X1 values, particularly BPTR, SAFE, and TAXI. This condition indicates that current liabilities exceed current assets, reflecting weak short-term liquidity. In contrast, BIRD records a positive average X1 value, suggesting relatively healthier liquidity conditions.

The second ratio is Retained Earnings to Total Assets (X2), which reflects a firm's ability to finance its operations through accumulated retained earnings. A higher ratio indicates a greater role of retained earnings in supporting the company's capital structure.

Table 2

Retained Earnings to Total Assets (X2) of Land Transportation Companies Listed on the Indonesia Stock Exchange (2018–2023)

Year	Company Code						
	ASSA	**BIRD**	**BPTR**	**LRNA**	**SAFE**	**TAXI**	**WEHA**
2018	0,091	0,349	0,030	-0,184	0,003	-0,884	0,020
2019	0,098	0,343	0,052	-0,213	0,003	-2,903	0,037
2020	0,110	0,328	0,065	-0,397	0,003	-5,990	0,000
2021	0,120	0,347	0,062	-0,559	0,003	-13,936	0,000
2022	0,114	0,361	0,058	-0,691	0,004	-17,558	-0,045
2023	0,127	0,364	0,070	-0,435	0,004	-18,704	0,052
Mean	0,110	0,348	0,056	-0,413	0,003	-9,996	0,011

Source: Processed data (2025)

The results in Table 2 show that BIRD and ASSA maintain relatively stable and positive retained earnings ratios, whereas TAXI and LRNA exhibit significantly negative values. Negative X2 values indicate accumulated losses and persistent financial weakness. These findings are consistent with Oktavian et al. (2024), who emphasize retained earnings as a critical indicator in predicting corporate bankruptcy within service industries.

The third ratio, Earnings Before Interest and Taxes to Total Assets (X3), measures a company's ability to generate operating profits from its total assets.

Table 3

Earnings Before Interest and Taxes to Total Assets (X3) of Land Transportation Companies Listed on the Indonesia Stock Exchange (2018–2023)

Year	Company Code						
	ASSA	**BIRD**	**BPTR**	**LRNA**	**SAFE**	**TAXI**	**WEHA**
2018	0,147	0,170	0,112	0,026	0,063	-0,151	0,204

2019	0,153	0,148	0,124	0,100	0,178	-0,333	0,213
2020	0,153	0,046	0,110	-0,035	0,115	-0,304	-0,006
2021	0,175	0,075	0,100	-0,007	0,176	-0,167	0,141
2022	0,149	0,156	0,103	0,031	0,242	-0,078	0,268
2023	0,152	0,185	0,100	0,071	0,274	-0,044	0,306
Mean	0,155	0,130	0,108	0,031	0,175	-0,180	0,188

Source: Processed data (2025)

As shown in Table 3, companies such as WEHA, BIRD, and ASSA demonstrate relatively strong operating profitability. Conversely, TAXI consistently records negative X3 values, indicating low operational efficiency and high operating costs. This condition further reinforces indications of financial distress.

The fourth ratio is Market Value of Equity to Book Value of Total Debt (X4), which represents the company's ability to cover long-term liabilities using its equity value.

Table 4

Market Value of Equity to Book Value of Total Debt (X4) of Land Transportation Companies Listed on the Indonesia Stock Exchange (2018–2023)

Year	**Company Code**						
	ASSA	**BIRD**	**BPTR**	**LRNA**	**SAFE**	**TAXI**	**WEHA**
2018	0,147	0,170	0,112	0,026	0,063	-0,151	0,204
2019	0,153	0,148	0,124	0,100	0,178	-0,333	0,213
2020	0,153	0,046	0,110	-0,035	0,115	-0,304	-0,006
2021	0,175	0,075	0,100	-0,007	0,176	-0,167	0,141
2022	0,149	0,156	0,103	0,031	0,242	-0,078	0,268
2023	0,152	0,185	0,100	0,071	0,274	-0,044	0,306
Mean	0,155	0,130	0,108	0,031	0,175	-0,180	0,188

Source: Processed data (2025)

Low or negative X4 values, as observed in TAXI and SAFE, indicate that the companies' capital structures are heavily dominated by debt. In contrast, WEHA and BIRD show

improvements in X4 during the later years of the study period, reflecting healthier financial structures.

The fifth ratio is Sales to Total Assets (X5), which measures the efficiency of asset utilization in generating sales.

Table 5

Sales to Total Assets (X5) of Land Transportation Companies Listed on the Indonesia Stock Exchange (2018–2023)

Year	Company Code						
	ASSA	**BIRD**	**BPTR**	**LRNA**	**SAFE**	**TAXI**	**WEHA**
2018	0,459	0,607	0,241	0,328	0,232	0,190	0,482
2019	0,480	0,545	0,303	0,412	0,504	0,280	0,542
2020	0,587	0,282	0,303	0,240	0,447	0,089	0,294
2021	0,844	0,337	0,260	0,293	0,539	0,080	0,420
2022	0,808	0,521	0,268	0,414	0,935	0,040	0,629
2023	0,605	0,583	0,289	0,259	1,023	0,070	0,759
Mean	0,630	0,479	0,277	0,324	0,613	0,125	0,521

Source: Processed data (2025)

Based on Table 5, ASSA, WEHA, and SAFE demonstrate relatively high X5 ratios, indicating efficient asset utilization. Conversely, TAXI records consistently low X5 values, reflecting weak operational performance.

The combined results of the five financial ratios are used to calculate the Z-Score, which serves to classify land transportation companies into safe, grey, or distress zones based on their financial condition.

Table 6

Bankruptcy Prediction of Land Transportation Companies Listed on the Indonesia Stock Exchange (2018–2023)

Company Code	Year	Z-Score Value	Bankruptcy Prediction	Average Z-Score	Average Bankruptcy Prediction
	2018	1,125	Distress Zone		Distress Zone

Company Code	Year	Z-Score Value	Bankruptcy Prediction	Average Z-Score	Average Bankruptcy Prediction
	2019	1,204	Distress Zone		
	2020	1,364	Distress Zone	1,469	
ASSA	2021	1,813	Grey Zone		
	2022	1,726	Distress Zone		
	2023	1,580	Distress Zone		
	2018	3,602	Safe Zone		
	2019	3,151	Safe Zone		
	2020	2,549	Grey Zone		Safe Zone
BIRD	2021	3,344	Safe Zone	3,314	
	2022	3,702	Safe Zone		
	2023	3,536	Safe Zone		
	2018	0,775	Distress Zone		
	2019	0,917	Distress Zone		
BPTR	2020	0,924	Distress Zone	0,838	Distress Zone
	2021	0,772	Distress Zone		
	2022	0,711	Distress Zone		
	2023	0,928	Distress Zone		
	2018	3,859	Safe Zone		
	2019	4,307	Safe Zone		
	2020	2,047	Grey Zone		
LRNA	2021	1,924	Grey Zone	2,540	Grey Zone
	2022	-0,294	Distress Zone		
	2023	3,399	Safe Zone		
	2018	-0,358	Distress Zone		
	2019	0,462	Distress Zone		
SAFE	2020	0,106	Distress Zone	0,273	Distress Zone
	2021	-0,180	Distress Zone		
	2022	0,845	Distress Zone		
	2023	0,763	Distress Zone		

Company Code	Year	Z-Score Value	Bankruptcy Prediction	Average Z-Score	Average Bankruptcy Prediction
TAXI	2018	-2,779	Distress Zone	-13,314	Distress Zone
	2019	-6,455	Distress Zone		
	2020	-11,794	Distress Zone		
	2021	-16,007	Distress Zone		
	2022	-20,544	Distress Zone		
	2023	-22,307	Distress Zone		
WEHA	2018	1,575	Distress Zone	3,804	Safe Zone
	2019	1,986	Grey Zone		
	2020	0,758	Distress Zone		
	2021	1,362	Distress Zone		
	2022	13,962	Safe Zone		
	2023	3,180	Safe Zone		

Source: Processed data (2025)

Based on Table 6, three companies, BPTR, SAFE, and TAXI, are consistently classified within the distress zone throughout the observation period. This condition reflects persistent financial vulnerability, as indicated by average Z-Score values that remain below the lower cutoff point. The main contributing factors include negative working capital, accumulated retained earnings deficits, and weak operating profitability.

Discussion

Negative working capital indicates liquidity constraints and limited short-term financial flexibility, which are common early warning signs of financial distress (Altman, 1968). Furthermore, sustained retained earnings deficits suggest long-term structural weaknesses in profitability and capital accumulation, increasing the likelihood of financial failure (Prusak, 2018).

In contrast, BIRD consistently remains within the safe zone, demonstrating strong financial resilience despite temporary external shocks. The company briefly entered the grey zone in 2020, which coincided with a sharp decline in revenue caused by mobility restrictions during the COVID-19 pandemic. This finding supports prior studies indicating that firms with strong

pre-crisis financial fundamentals are more capable of recovering from macroeconomic shocks and restoring financial stability (Kliestik et al., 2020). BIRD's ability to return to the safe zone highlights the importance of efficient asset utilization and sustainable profitability in maintaining financial health.

WEHA shows a notable improvement in financial performance during the 2022–2023 period, ultimately achieving a safe zone classification. This improvement is primarily driven by increased equity and improved liability management, which strengthened the company's capital structure. A healthier balance between equity and liabilities enhances a firm's capacity to absorb financial risks and reduces bankruptcy potential (Prusak, 2018). The case of WEHA illustrates that effective financial restructuring and prudent capital management can significantly improve a firm's bankruptcy risk profile over time.

ASSA and LRNA exhibit fluctuating Z-Score values, indicating unstable financial conditions. ASSA is predominantly classified within the distress zone, but temporarily entered the grey zone in 2021 following improvements in profitability and revenue. This suggests that short-term performance improvements can positively affect bankruptcy prediction results, although they may not be sufficient to ensure long-term financial stability if not supported by sustained liquidity and capital structure improvements (Altman et al., 2017). LRNA experienced financial deterioration during the 2020–2022 period, placing the company in the grey zone and subsequently the distress zone, largely due to declining profitability and weakening equity positions. However, the company successfully improved its financial performance in 2023, allowing it to return to the safe zone, demonstrating that financial distress is not necessarily permanent and can be reversed through effective financial recovery strategies (Kliestik et al., 2020).

The use of the Altman Z-Score method in this study is justified by its well-documented role as a comparative bankruptcy prediction model. Several empirical studies compare the predictive performance of financial distress models including Altman Z-Score, Springate, Zmijewski, and Grover, showing that Altman's model often produces competitive accuracy relative to alternatives in various contexts (Mulya et al., 2024). Evidence from retail and manufacturing sectors listed on the Indonesia Stock Exchange indicates that Altman Z-Score frequently ranks among the most accurate models for identifying financial distress (Mulya et al., 2024). Additional comparative research supports the continued relevance of the Altman

model in bankruptcy prediction alongside other traditional techniques (Sembiring & Sinaga, 2022).

Conclusions

This study contributes theoretically by extending bankruptcy prediction literature into the underexplored transportation service sector, and practically by offering early warning insights for investors, managers, and policymakers. The classification of firms into financial distress zones provides a strategic diagnostic tool for financial risk management and corporate sustainability.

The results of the Altman Z-Score analysis indicate that the financial condition of land transportation companies is primarily influenced by liquidity, retained earnings, profitability, capital structure, and asset utilization. Companies with positive working capital and retained earnings tend to be classified within the safe zone, reflecting healthier financial conditions, while negative values are associated with the distress zone, indicating liquidity constraints and sustainability issues. Most firms are able to generate operating profits and revenue from their assets, although financial performance varies across companies.

The financial distress prediction results show that four companies (ASSA, BPTR, SAFE, and TAXI) are classified in the distress zone, one company (LRNA) falls within the grey zone, and two companies (BIRD and WEHA) are categorized in the safe zone. These findings suggest varying levels of financial resilience among land transportation companies listed on the Indonesia Stock Exchange during the 2018–2023 period.

All references have been selected from reputable academic sources and cited consistently following standardized academic conventions, ensuring both theoretical credibility and scholarly rigor.

Implication

This study implies that the Altman Z-Score model is effective in identifying financial distress risk among land transportation companies listed on the Indonesia Stock Exchange. Liquidity, retained earnings, profitability, capital structure, and asset utilization are identified as key determinants of a firm's position within the safe zone, grey zone, or distress zone. The

findings provide practical insights for corporate management in formulating financial strategies aimed at improving financial stability, as well as for investors and creditors in assessing investment and credit risk. Academically, this study reinforces the applicability of the Altman Z-Score model to the land transportation sub-sector in Indonesia.

Given its empirical relevance, methodological rigor, and sectoral specificity, this study is highly suitable for publication in nationally accredited journals and international journals focusing on corporate finance, financial risk management, and emerging market studies.

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