



Financial Distress Analysis of Industrial Companies Listed on the Indonesia Stock Exchange in 2024 Using the Altman Z-Score

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Abstract

This study aims to analyze the potential financial distress of industrial sector companies listed on the Indonesia Stock Exchange (IDX) in 2024 using the Altman Z-Score model. The study employed a quantitative approach with a purposive sampling method, resulting in 53 companies selected as samples from 67 industrial sector companies. The variables analyzed included working capital, total assets, retained earnings, EBIT, equity value, and total liabilities. The results indicate that 37 companies (69.81%) were categorized as financially healthy, 6 companies (11.32%) were in the grey area, and 10 companies (18.87%) were identified as being in financial distress, namely INDX, KOBX, VOKS, CAKK, CTHH, IBFN, INTA, KOIN, MDRN, and HOPE. These findings suggest that although the majority of industrial companies maintain adequate financial stability, several companies still face bankruptcy risks that require strategic attention from management.

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INTRODUCTION

The Covid-19 pandemic, which began in late 2019 and reached its peak impact between 2020 and 2021, caused substantial disruptions to global supply chains, reduced market demand, and operational restrictions across various industrial sectors. Many companies experienced significant declines in revenue due to activity restrictions that led to decreased consumer demand for goods and services. The sectors most affected included tourism, hospitality, and aviation (Pratiwi et al., 2021). In addition, according to Agung and Susilawati (2021), the sectors that suffered the most significant losses included tourism, construction, transportation, mining, finance, and automotive industries.

In accordance with Presidential Decree Number 17 of 2023, the Covid-19 pandemic was officially declared over and classified as an endemic disease in Indonesia. Nevertheless, the industrial sector continues to face external challenges such as global uncertainty, inflationary pressures, and increasing geopolitical tensions. In 2025, trade tensions between the United States and China intensified significantly following the implementation of new import tariff policies by the United States government, with tariffs reaching up to 145% on various Chinese products, which also affected Indonesia's international trade (Ministry of Defense of the Republic of Indonesia, 2025).

Indonesia's economic growth during 2020–2023 showed that contractions generally occurred in the first and fourth quarters, while positive growth occurred in the second and third quarters due to recovering economic activities and supporting factors such as religious holidays and school vacations. According to Statistics Indonesia (2024), Indonesia's economy experienced negative growth in the second quarter of 2020 due to the impact of the Covid-19 pandemic; however, the fourth quarters of 2022 and 2023 showed positive growth driven by the manufacturing, construction, transportation, and warehousing sectors.

The industrial sector plays a crucial role in the Indonesian economy, contributing approximately 50% to the Gross Domestic Product (GDP). The manufacturing subsector contributes the most significantly, including textiles, garments, leather, wood, metal, and machinery industries. In Indonesia, approximately 20% of total industrial production consists of finished goods, while the remainder comprises raw materials and semi-finished products (MNC Leasing, 2023).

Financial distress refers to a situation in which a company faces significant financial difficulties that prevent it from fulfilling its obligations to third parties, including creditors and bondholders. This condition may potentially lead to bankruptcy and is generally regarded as the initial phase before a business entity experiences bankruptcy (Hutabarat, 2020).

Various models have been developed to predict corporate bankruptcy, including the Grover, Altman Z-Score, Springate, and Zmijewski models. The Altman Z-Score model, introduced by Edward I. Altman, utilizes multiple discriminant analysis techniques by integrating liquidity, profitability, leverage, and activity ratios to predict corporate bankruptcy (Tida et al., 2024).

Based on the explanation above, this study aims to analyze industrial sector companies listed on the Indonesia Stock Exchange that have the potential to experience bankruptcy in 2024. The results of this study are expected to provide substantial contributions to industrial business management in making strategic decisions to prevent bankruptcy risk through the application of the Altman Z-Score analysis model.

METHOD

This study employed a quantitative approach based on the philosophy of positivism. According to Sugiyono (2023), quantitative methods can be defined as research approaches that emphasize the collection and analysis of numerical data to test hypotheses and explain the phenomena being studied. The Altman Z-Score model enables researchers to systematically and objectively measure a company's financial condition.

This study also applied a replication approach because it used indicators, variables, and analytical tools identical to those used in previous studies, although the research objects and periods differed (Batanghari et al., 2022). The Altman Z-Score model has frequently been utilized as an analytical instrument to assess the potential for corporate financial distress in various previous studies.

Research Location and Period This study focused on industrial sector companies listed on the Indonesia Stock Exchange (IDX) during 2024. The data used in this research were obtained from the official IDX website at <https://www.idx.co.id>.

Population and Sample The population in this study consisted of all industrial sector companies listed on the IDX in 2024, totaling 67 companies. The sampling method used was purposive sampling with the following criteria:

1. Companies operating in the industrial sector and listed on the Indonesia Stock Exchange in 2024.
2. Companies that published 2024 financial statements with comprehensive data corresponding to the variables studied, including working capital, total assets, retained earnings, EBIT, equity value, and total liabilities.

Based on these criteria, 53 companies were identified as meeting the established research requirements and were selected as the study sample.

Operational Definition of Variables The variables in this study consisted of four main financial ratios used in the Altman Z-Score model, namely: X1 (working capital/total assets), X2 (retained earnings/total assets), X3 (EBIT/total assets), and X4 (book value of equity/book value of total debt). These variables reflect the company's liquidity, profitability, and leverage aspects.

Data Analysis Method The data were analyzed using the revised Altman Z-Score model with the following formula:

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

The Z-Score values of each company were classified into three categories: healthy ($Z > 2.6$), grey area ($1.1 \leq Z \leq 2.6$), and distress ($Z < 1.1$).

RESULTS

Based on the analysis of 53 industrial sector companies listed on the Indonesia Stock Exchange (IDX) in 2024 using the Altman Z-Score model, the distribution of the companies' financial condition classifications is presented in Table 1.

Table 1. Altman Z-Score Classification Results of Industrial Sector Companies Listed on the IDX in 2024

Classification	Number of Companies	Percentage
Healthy ($Z > 2.6$)	37	69.81%
Grey Area ($1.1 \leq Z \leq 2.6$)	6	11.32%
Distress ($Z < 1.1$)	10	18.87%
Total	53	100%

Table 1 shows that most industrial sector companies were classified as financially healthy, accounting for 69.81% of the total sample. Meanwhile, 18.87% of companies were categorized as being in financial distress, and 11.32% were classified in the grey area.

The results indicate that the majority of industrial companies have maintained satisfactory financial performance despite the lingering impacts of post-pandemic economic uncertainty and global trade tensions. However, nearly one-fifth of the companies remain vulnerable to financial difficulties. Furthermore, ten companies were identified as experiencing financial distress because their Z-Score values were below 1.1. These companies are presented in Table 2.

Table 2. Industrial Sector Companies Categorized as Financial Distress

No	Company Code	Financial Status
1	INDX	Distress
2	KOBX	Distress
3	VOKS	Distress
4	CAKK	Distress
5	CTTH	Distress
6	IBFN	Distress
7	INTA	Distress
8	KOIN	Distress
9	MDRN	Distress
10	HOPE	Distress

These companies exhibited Z-Score values below the established threshold of 1.1, indicating a high probability of bankruptcy. Low working capital, declining retained earnings, reduced profitability, and high leverage ratios are among the factors that may contribute to this condition. In addition, six companies were classified in the grey area, indicating moderate financial vulnerability. Companies in this category require close monitoring because they are positioned between healthy and distressed conditions and may experience financial deterioration if corrective actions are not implemented. Overall, the findings reveal that although most industrial companies have successfully adapted to post-pandemic economic conditions, a considerable proportion still faces financial risks. Therefore, continuous financial monitoring and strategic management interventions are essential to maintain business sustainability and minimize bankruptcy risk.

The analysis results demonstrate that the financial conditions of industrial sector companies listed on the Indonesia Stock Exchange (IDX) in 2024 were relatively stable. Out of 53 companies analyzed, 37 companies (69.81%) were categorized as healthy, indicating that most companies possessed sufficient financial capacity to sustain operational activities and fulfill both short-term and long-term obligations. This finding suggests that the industrial sector has shown resilience and adaptability in facing post-pandemic economic challenges and global economic uncertainties. Meanwhile, six companies (11.32%) were classified in the grey area category. Companies within this category are considered to be in a transitional financial condition because their Z-Score values are neither sufficiently high to be considered financially healthy nor sufficiently low to be categorized as financially distressed. Therefore, these companies require continuous monitoring and preventive measures to improve their financial performance and

avoid further deterioration. Without appropriate strategic interventions, these companies may potentially shift into the financial distress category in subsequent periods.

Furthermore, ten companies (18.87%) were identified as experiencing financial distress, indicating a substantial risk of bankruptcy. The companies classified in this category were INDX, KOBX, VOKS, CAKK, CTTH, IBFN, INTA, KOIN, MDRN, and HOPE. Their Z-Score values were below the threshold value of 1.1, reflecting weak financial performance. Such conditions may be associated with insufficient working capital, declining retained earnings, low profitability, and excessive dependence on debt financing. These factors collectively reduce the companies' ability to maintain operational sustainability and meet their financial obligations.

The dominance of companies in the healthy category also indicates that the industrial sector has gradually recovered from the adverse impacts of the Covid-19 pandemic. Improvements in manufacturing activities, increasing domestic demand, and the normalization of economic activities have contributed positively to corporate financial performance. Nevertheless, external factors such as inflationary pressures, fluctuations in global commodity prices, and international trade tensions remain significant risks that could affect future financial stability.

From an investment perspective, these findings provide important information for investors and other stakeholders. Companies classified as healthy may be considered more attractive investment alternatives because they exhibit stronger financial fundamentals and lower bankruptcy risk. Conversely, companies categorized as financial distress require careful evaluation because they present higher investment risks and may face liquidity and solvency problems in the future.

Overall, the results indicate that although the majority of industrial sector companies maintain satisfactory financial conditions, a considerable proportion of companies still face financial vulnerabilities. Therefore, continuous financial monitoring, efficient asset management, optimization of capital structure, and strategic decision-making are essential to strengthen corporate resilience and reduce the probability of bankruptcy in the future.

DISCUSSION

The results of the study indicate that the majority of industrial sector companies listed on the Indonesia Stock Exchange (IDX) in 2024 demonstrated adequate financial stability, with 69.81% categorized as financially healthy. These findings suggest that despite the significant impacts of the Covid-19 pandemic and global economic pressures, most industrial companies have successfully maintained their financial health.

The existence of 10 companies (18.87%) in financial distress is a serious concern. These companies, namely INDX, KOBX, VOKS, CAKK, CTTH, IBFN, INTA, KOIN, MDRN, and HOPE, face a high risk of bankruptcy, as indicated by Z-Score values below 1.1. This condition may be caused by low working capital, accumulated losses that reduce retained earnings, low profitability, and high debt-to-equity ratios.

These findings are consistent with signaling theory (Spence, 1973, as cited in Nurhaliza & Azizah, 2023), which explains that a company's financial condition serves as a signal to investors and creditors. Companies experiencing financial distress tend to provide negative signals that may affect market confidence and hinder access to external financing.

A total of 6 companies (11.32%) were categorized in the grey area, indicating financial conditions at the threshold between healthy and distress. This condition requires special attention from management because, without appropriate corrective actions, these companies have the potential to fall into financial distress. The findings of this study are consistent with previous studies that applied the Altman Z-Score model to industrial sector companies in Indonesia.

CONCLUSION

This study analyzed the bankruptcy potential of industrial sector companies listed on the Indonesia Stock Exchange (IDX) in 2024 using the Altman Z-Score model. The findings revealed that most companies maintained satisfactory financial conditions, with 37 companies (69.81%) classified as financially healthy, indicating their ability to sustain operations and fulfill long-term financial obligations. In addition, six companies (11.32%) were categorized in the grey area, suggesting moderate financial vulnerability that requires close managerial attention and continuous monitoring. Furthermore, ten companies (18.87%), namely INDX, KOBX, VOKS, CAKK,

CTTH, IBFN, INTA, KOIN, MDRN, and HOPE, were identified as being in financial distress, as indicated by Z-Score values below 1.1, which reflects a high probability of bankruptcy. The results indicate that although the Indonesian industrial sector has generally demonstrated resilience and gradual recovery following the Covid-19 pandemic, a considerable proportion of companies still face financial risks due to internal weaknesses and external economic uncertainties. Factors such as inadequate working capital, declining profitability, accumulated losses, and high debt dependency may contribute to the deterioration of financial performance. In addition, global challenges, including inflationary pressures and international trade tensions, may further influence corporate financial sustainability in the future. The findings of this study provide practical implications for company management, investors, and policymakers. Company management should continuously monitor financial performance and implement strategic measures, such as improving operational efficiency, optimizing capital structure, and strengthening liquidity management, to minimize bankruptcy risk. For investors, the Altman Z-Score model can serve as an effective decision-support tool in evaluating investment feasibility and identifying potential financial risks associated with industrial sector companies. This study is limited to industrial sector companies listed on the Indonesia Stock Exchange in 2024 and relies solely on the Altman Z-Score model as the analytical instrument. Therefore, future studies are recommended to incorporate additional bankruptcy prediction models, such as the Grover, Springate, and Zmijewski models, as well as extend the observation period and include comparative analyses across multiple sectors to obtain a more comprehensive understanding of corporate financial distress in Indonesia.

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