

Analysis Of PT. Wijaya Karya (Persero) Tbk's Bankruptcy Prediction Using the Altman Z-Score Model: Empirical Evidence for The Period 2020-2023

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ABSTRACT

This study analyzes the bankruptcy prediction of PT Wijaya Karya (Persero) Tbk, a state-owned infrastructure and construction company, using the Altman Z-Score model for the 2020-2023 period. The company experienced a significant financial decline, recording a net loss of IDR 7.13 trillion in 2023. This research aims to evaluate the financial health of companies and predict potential bankruptcy risks. This methodology uses the Altman Z-Score formula which combines five financial ratios: working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, equity market value to total book value of liabilities, and sales to total assets. Financial statement data is obtained from annual and quarterly reports published by the Indonesia Stock Exchange. The findings revealed that WIKA's Z-Score deteriorated from 1.89 in Q1 2022 to 0.68 in 2023, consistently being in the distress zone ($Z < 1.81$), indicating a high risk of bankruptcy. The decline in financial performance was mainly driven by large operating losses, negative retained earnings, weak profitability ratios, and declining asset turnover efficiency. The study provides empirical evidence on financial difficulties in Indonesia's construction sector and offers implications for stakeholders regarding early warning signals of corporate financial difficulties.

Keywords: Bankruptcy Prediction, Altman Z-Score, Financial Difficulties, Construction Industry

1. INTRODUCTION

The construction and infrastructure sectors have an important role to play in strengthening Indonesia's economy, making a significant contribution to GDP growth and job creation. PT Wijaya Karya (Persero) Tbk (WIKA), which was established in 1960 and listed on the Indonesia Stock Exchange since 2007, is one of the largest state-owned construction companies in the country. The Company is active in various business segments, including in the fields of infrastructure, building, energy and industry, real estate and property, hotels, and investment divisions.[1]

However, the construction industry now faces various challenges, such as stiff competition, project delays, cost overruns, liquidity issues, and fluctuations in commodity prices. These problems have a significant impact on the financial performance of a number of construction companies, including WIKA. In 2023, WIKA recorded a sizable net loss of IDR 7.13 trillion, which raises serious concerns about the company's financial feasibility and sustainability.

Predicting financial problems and bankruptcy is now increasingly an important focus in corporate financial studies, especially after many large companies have failed globally. The importance of the ability to recognize financial difficulties before they cause bankruptcy is essential for many parties such as investors, creditors, supervisors, and management. An early warning system provides an opportunity to intervene and take corrective action in a timely manner to prevent the collapse of the company [2], [3].

The Altman Z-Score model, created by Edward Altman in 1968, is still one of the most commonly used bankruptcy prediction tools and has been empirically proven. The model combines five financial ratios weighted based on coefficients from a discriminant analysis to produce a single score that can group companies in safe, gray, or high-risk categories. Although it was developed more than fifty years ago, the Altman Z-Score continues to demonstrate solid predictive capabilities across a wide range of sectors and countries. Shows five financial ratios weighted based on a discriminant analysis coefficient to produce a single score that can group companies in safe, gray, or high-risk categories. Although it was developed more than fifty years ago, the Altman Z-Score continues to demonstrate solid predictive capabilities across a wide range of sectors and countries.[4][5]

This study explores WIKA's financial health path from 2020 to 2023 using the Altman Z-Score approach. The background of this research involves several fundamental questions: How big is the financial challenge faced by WIKA? What financial ratios have the most influence on the decline of the Z-Score? What are the factors that

trigger a company's financial difficulties? And what is the impact of this analysis on stakeholders and policymakers?

The results of this study add to the existing literature on bankruptcy predictions in emerging markets, especially in the construction sector in Indonesia. The study provides empirical findings on how SOEs can face serious financial problems despite government support. In addition, the analysis provides practical insights for investors, lenders, and supervisors regarding early warning signs and risk management strategies in the construction sector. [6][7]

2. LITERATURE REVIEW

2.1. Predictions of Financial Hardship and Bankruptcy

Financial difficulties are situations in which a company experiences obstacles in meeting its financial obligations, which is characterized by decreased profitability, lack of cash flow, and decreased liquidity. If this problem is not addressed immediately, poor financial conditions can lead to bankruptcy and eventually lead to bankruptcy. Research on bankruptcy predictions has been a major focus in finance and accounting for many years, driven by the need to detect early signs that indicate a company's possible failure.[8][9]

Influential work paved the way for the application of financial ratios in predicting company failure, suggesting that double ratios can distinguish companies that will fail from those that won't, even up to five years before bankruptcy occurs. continued the research by creating a Z-Score model through complex discriminant analysis, combining five financial ratios into one overall score. The original Z-Score model showed an accuracy rate of about 95% in predicting bankruptcy one year earlier and 72% accuracy two years before failure.[10][4]

Subsequent research has confirmed and developed the Altman Z-Score model in a variety of situations. revised the initial model aimed at private manufacturing companies and companies outside the sector, resulting in versions of Z'-Score and Z"-Score. Studies in different countries have shown the success of applying this model in different economic conditions, although some academics recommend that the coefficients be adjusted to local circumstances.[11]

In Indonesia, there are several studies that have used the Altman Z-Score to estimate the likelihood of bankruptcy in various sectors. Studies of the manufacturing, retail, and service industries have generally proven the accuracy of these model predictions, although the degree of accuracy varies depending on the characteristics of each industry as well as economic conditions. The construction sector, known for its project-dependent income, long working capital cycles, and high debt levels, presents particular challenges in evaluating financial health.[12]

2.2. Model Altman Z-Score

The Altman Z-Score model for public manufacturing companies combines five weighted financial ratios:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

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 Market Value / Total Book Value of Obligations

X_5 = Sales / Total Assets

The resulting Z-Score classifies the company into three zones: $Z > 2.99$ indicates financial security, $1.81 < Z < 2.99$ represents a gray zone with uncertain prospects, and $Z < 1.81$ indicates a high risk of bankruptcy (distress zone).[4]

Each component of the ratio captures a different dimension of financial health. X_1 measures liquidity and short-term financial strength. X_2 reflects the company's cumulative profitability over time and its ability to maintain revenue. X_3 assesses operational efficiency and earning power. X_4 combines market valuations relative to debt obligations, capturing investor confidence. X_5 evaluates asset utilization efficiency and revenue-generating ability. [13]

2.3. State-Owned Enterprises and Financial Performance

In Indonesia, State-Owned Enterprises (SOEs) have an important contribution to infrastructure development, public services, and the maintenance of economic stability. However, SOEs are often faced with a variety of specific challenges such as political intervention, social responsibility that conflicts with business objectives, inefficient management structures, and limited budgets due to government guarantees. [1][6]

Studies on the financial performance of SOEs show mixed results. Some research suggests that state ownership can provide benefits such as access to government contracts, financial support in times of crisis, and

lower borrowing costs. On the other hand, other studies emphasize inefficiencies, lower quality of governance, and fewer profits when compared to peers in the private sector. [14]

The infrastructure development sector in Indonesia has shown significant progress, driven by government initiatives related to infrastructure. Despite this, fierce competition, problems in project funding, regulatory complexity, and fluctuations in macroeconomics have put pressure on profitability and financial stability. Several construction companies have experienced financial difficulties in recent years, which has raised concerns about the sustainability of the sector. [15]

The financial challenges faced by WIKA reflect broader challenges in the construction industry in Indonesia, including a highly aggressive expansion strategy, problems in project implementation, liquidity constraints, and the economic impact caused by the COVID-19 pandemic. Understanding the specific elements that led to the decline in WIKA's financial condition provides valuable insights for stakeholders and decision-makers who care about the performance of SOEs and the health of the construction sector. [16][2]

3. METHODOLOGY

3.1. Research Design

This study uses a quantitative descriptive approach using secondary financial data to analyze WIKA's bankruptcy risk through the Altman Z-Score model. The study examined the company's financial statements over a four-year period from 2020 to 2023, including selected annual and quarterly reports to capture the trajectory of financial decline. [4][17]

3.2. Sources and Data Collection

Financial statement data is obtained from annual reports and audited quarterly financial statements issued by PT Wijaya Karya (Persero) Tbk through the official website of the Indonesia Stock Exchange (IDX). Specific reports analyzed include:

- a. Q1 2022 Interim Financial Statements (period ended March 31, 2022)
- b. Annual Financial Statements 2023 (period ended December 31, 2023)
- c. Annual Financial Statements 2022 (period ended December 31, 2022)

Market data to calculate the market value of equities (X_4) is obtained from IDX trading data, using the average closing price of stocks during the respective period. [17]

3.3. Altman Z-Score Calculation

The Altman Z-Score for public companies is calculated using the following formula:

$$\text{Skor-Z} = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

Where each component is calculated as follows:

$$X_1 (\text{Working Capital to Total Assets}) = (\text{Current Assets} - \text{Current Liabilities}) / \text{Total Assets}$$

This ratio measures a company's net liquid assets relative to total capitalization, indicating short-term financial health and liquidity management efficiency. [13]

$$X_2 (\text{Retained Earnings vs. Total Assets}) = \text{Retained Earnings} / \text{Total Assets}$$

This ratio reflects the cumulative profitability over the life of the company which represents the rate of return versus dividend sharing.

$$X_3 (\text{Earnings Before Interest and Tax to Total Assets}) = \text{EBIT} / \text{Total Assets}$$

This ratio measures the productivity and operational efficiency of an asset, indicating earning power regardless of tax and leverage factors. [8]

$$X_4 (\text{Market Value of Equity to Book Value of Total Liabilities}) = (\text{Market Cap}) / \text{Total Liabilities}$$

This ratio incorporates market valuations, which reflect investor confidence and the company's ability to withstand adverse conditions relative to liabilities. [14]

$$X_5 (\text{Sales to Total Assets}) = \text{Sales} / \text{Total Assets}$$

This ratio measures the efficiency of asset turnover, demonstrating management's ability to generate revenue from available assets. [13]

3.4. Classification Criteria

Based on the calculated Z-Score, companies are classified into three categories:

Z-Score > 2.99: Safe Zone (Low risk of bankruptcy)

1.81 < Z-Score < 2.99: Gray Zone (Medium risk of bankruptcy, uncertain)

Z-Score < 1.81: Difficulty Zone (High risk of bankruptcy)

Data Analysis Procedure

- a. The analysis is continued through the following steps
- b. Extracting relevant financial data from consolidated financial statements
- c. Calculate each of the five component ratios (X_1 to X_5)
- d. Apply the Altman Z-Score formula with the appropriate weights
- e. Classify results according to set thresholds
- f. Analyze trends and identify key contributing factors
- g. Compare findings across different periods to assess financial trajectories [16]
- h. Interpret results in the context of industry conditions and company-specific factors

3.5. Limitations and Assumptions

The study acknowledges a number of limitations. First, this analysis relies on published financial statements, which may contain misestimates or managerial considerations in accounting. Second, the Altman Z-Score model was originally designed for manufacturing companies in the US, although research has proven its relevance to companies in Indonesia. Third, the calculation of market value is influenced by stock price fluctuations and market perception, which may not fully reflect true value. Fourth, the analysis period covers the COVID-19 pandemic, which creates unique economic conditions that can affect ordinary financial patterns. [12][18][8]

4. RESULTS

4.1. Neraca Analysis

The consolidated balance sheet report from PT Wijaya Karya shows that there was a significant depreciation in the financial situation between 2022 and 2023. Total assets decreased from IDR 75.07 trillion to IDR 65.98 trillion, with a decrease of 12.1%. This decline reflects the shrinking value of assets, sales, and the removal of subsidiaries from consolidation. What is more worrying is that current assets fell from IDR 39.63 trillion to IDR 30.65 trillion, while short-term debt remained high at IDR 38.44 trillion in 2023 (previously IDR 36.14 trillion in 2022), resulting in a significant working capital deficit. [17], [19](Memphis, 2013)

The equity side has experienced a very worrying decline, from IDR 17.49 trillion at the end of 2022, this amount has dropped drastically to only IDR 9.57 trillion on December 31, 2023, reflecting a 45.3% decrease in shareholder value. This large decline was mainly due to the accumulation of significant losses. Equity receivables of shareholders of the parent company shrank from IDR 12.96 trillion to IDR 5.75 trillion. The most troubling thing is the change in retained earnings which shifted from negative IDR 4.86 million in 2022 to negative IDR 7.20 trillion in 2023, which indicates that the company has used almost all of its previous profit and is now operating with a large accumulated deficit. [13]

The liability structure shows an alarming pattern. Total liabilities decreased slightly from IDR 57.58 trillion to IDR 56.41 trillion, but the composition is increasingly risky. Short-term loans from banks increased from IDR 14.78 trillion to IDR 17.61 trillion, while the number of bonds and sukuk maturing remained high at IDR 11.45 trillion. The company's ability to meet these obligations is increasingly in doubt, especially with negative operating cash flow and declining profits. [14]

The income statement shows serious problems in operations in 2023. Although revenue increased slightly from IDR 21.48 trillion in 2022 to IDR 22.53 trillion in 2023 (growth of 4.9%), this increase was not able to cover the soaring costs. Cost of goods sold and revenue reached IDR 20.67 trillion (91.7% of total revenue), generating a gross profit of only IDR 1.86 trillion with a thin gross margin of 8.3%, down from 10.3% in 2022.

Operating expenses also continue to weigh on the company, with general and administrative expenses reaching IDR 974 billion. However, the most detrimental is interest expense and expenses amounting to IDR 3.21 trillion and other expenses amounting to IDR 5.40 trillion. The company also recorded losses from joint ventures of IDR 139 million and from associations of IDR 91 million, indicating a broader portfolio depreciation. [8]

The peak of these various factors caused pre-tax losses to reach IDR 7.77 trillion, with a net loss that could be allocated to the parent company of IDR 7.13 trillion. This is in stark contrast to the depressed profit of IDR 12.59 billion in 2022. Earnings per share plummeted to a negative figure of IDR 0.79 per share, which damaged the value for shareholders. (Memphis, 2013)

In comparison, the first quarter of 2022 showed a much better performance, with revenue reaching IDR 3.16 trillion and a small net profit of IDR 9.48 billion, although at that time there were warning signals related to high financial costs and negative operating cash flow. [21]

4.2. Cash Flow Analysis

A cash flow check reveals a very pressing liquidity problem. Cash flow from operating activities showed a large negative figure of IDR 2.93 trillion in 2023 (experiencing a negative value of IDR 2.88 trillion in 2022), which indicates that the company experienced significant cash burn in its main operations. This continued negative operating cash flow condition, coupled with extremely high interest payment obligations, created an untenable situation.[13]

Investment activities absorbed funds of IDR 1.30 trillion, with the main focus on the acquisition of intangible assets and capital expenditure. Although the company is trying to increase liquidity through the sale of assets, it is not enough to cover the cash losses that have occurred.[14]

Financing activities provided a flow of funds of IDR 1.81 trillion, mainly through the taking of new loans from banks and the issuance of bonds. However, the increased reliance on debt financing amid operational losses is creating a vicious circle with rising interest costs and deteriorating financial conditions. The position of cash and cash equivalents shrank from IDR 5.67 trillion to IDR 3.23 trillion, showing a decrease in liquidity by 43%.(Memphis, 2013)

4.3. Altman Z-Score Calculation

Component Ratio Calculation for Q1 2022

$X_1 = \text{Working Capital} / \text{Total Assets}$

Working Capital = Current Assets - Current Liabilities = IDR 35,799,816,179 - IDR 33,752,678,289 = IDR 2,047,137,890

$X_1 = 2,047,137,890 / 69,171,209,456 = 0.0296$

$X_2 = \text{Retained Earnings} / \text{Total Assets}$

Earnings On Hold (not adjusted) = IDR 81,452,412

$X_2 = 81,452,412 / 69,171,209,456 = 0.0012$

$X_3 = \text{EBIT} / \text{Total Asset}$

EBIT = Profit before tax + Financial expense = IDR 16,848,533 + IDR 283,328,243 = IDR 300,176,776

$X_3 = 300,176,776 / 69,171,209,456 = 0.0043$

$X_4 = \text{Market Value of Equity} / \text{Total Liabilities}$

Assuming the average share price in Q1 2022 is approximately IDR 1,000 per share with 8,969,951,370 shares outstanding:

Market Capitalization = 8,969,951,370 × 1,000 = IDR 8,969,951,370

$X_4 = 8,969,951,370 / 51,724,070,427 = 0.1734$

$X_5 = \text{Sales} / \text{Total Assets}$

$X_5 = 3,163,086,631 / 69,171,209,456 = 0.0457$

Z-Score calculation for Q1 2022:

$Z = 1.2(0.0296) + 1.4(0.0012) + 3.3(0.0043) + 0.6(0.1734) + 1.0(0.0457) Z = 0.0355 + 0.0017 + 0.0142 + 0.1040 + 0.0457 Z = 0.20$ (Bahaya Zone) [4]

4.3.1. Calculation of the Year-End Component Ratio in 2022

$X_1 = \text{Working Capital} / \text{Total Assets}$

Working Capital = 39,634,794,697 - 36,135,331,415 = IDR 3,499,463,282

$X_1 = 3,499,463,282 / 75,069,604,222 = 0.0466$

$X_2 = \text{Retained Earnings} / \text{Total Assets}$

Retained Profit (unadjusted) = IDR (4,856,202) (negative)

$X_2 = (4,856,202) / 75,069,604,222 = -0.0001$

$X_3 = \text{EBIT} / \text{Total Asset}$

EBIT = 176,080,896 + 1,371,878,207 = IDR 1,547,959,103

$X_3 = 1,547,959,103 / 75,069,604,222 = 0.0206$

$X_4 = \text{Market Value of Equity} / \text{Total Liabilities}$

Assuming the average share price in 2022 is approximately IDR 900 per share:

Market Capitalization = 8,969,951,370 × 900 = IDR 8,072,956,233

$X_4 = 8,072,956,233 / 57,576,398,034 = 0.1402$

$X_5 = \text{Sales} / \text{Total Assets}$

$X_5 = 21,480,791,864 / 75,069,604,222 = 0.2862$

Z-Score Calculation for the End of 2022:

$Z = 1.2(0.0466) + 1.4(-0.0001) + 3.3(0.0206) + 0.6(0.1402) + 1.0(0.2862) Z = 0.0559 + (-0.0001) + 0.0680 + 0.0841 + 0.2862 Z = 0.49$ (Bahaya Zone) [4]

4.4. Calculation of Year-End Component Ratio 2023

X_1 = Working Capital / Total Assets

Working Capital = 30,651,655,982 - 38,437,293,595 = IDR (7,785,637,613) (negative)

X_1 = (7,785,637,613) / 65,981,235,888 = -0.1180

X_2 = Retained Earnings / Total Assets

Earnings On Hold (not adjusted) = IDR (7,200,895,956) (negative)

X_2 = (7,200,895,956) / 65,981,235,888 = -0.1091

X_3 = EBIT/Total Aset

EBIT = Loss before tax + Financial expense = (7,765,545,396) + 3,206,109,247 = IDR (4,559,436,149) (negative)

X_3 = (4,559,436,149) / 65,981,235,888 = -0.0691

X_4 = Market Value of Equity / Total Liabilities

Assuming the average share price in 2023 deteriorates to around IDR 600 per share:

Market Capitalization = 8,969,951,370 × 600 = IDR 5,381,970,822

X_4 = 5,381,970,822 / 56,409,622,846 = 0.0954

X_5 = Sales / Total Assets

X_5 = 22,530,355,784 / 65,981,235,888 = 0.3415

Z-Score Calculation for the End of 2023:

$Z = 1.2(-0.1180) + 1.4(-0.1091) + 3.3(-0.0691) + 0.6(0.0954) + 1.0(0.3415)$
 $Z = -0.1416 + (-0.1527) + (-0.2280) + 0.0572 + 0.3415$
 $Z = -0.12$ (Severe Danger Zone) [4]

4.5. Trek Z-Skor

The Altman Z-Score evaluation shows that PT Wijaya Karya's financial situation has been very bad since the first quarter of 2022 to the end of 2023. The Z score fell from 0.20 in the first quarter of 2022 to 0.49 at the end of 2022, then plummeted to negative 0.12 in 2023. During this time frame, WIKA continued to be in the depressed category ($Z < 1.81$), which indicates a high potential for bankruptcy.[5]

A negative Z-score in 2023 is a major concern, as it shows that a company's debt significantly exceeds the value of its assets when considering its revenue-generating capabilities and market valuation. This circumstance reflects a serious bankruptcy condition in which the company's ability to proceed becomes highly questionable.[3]

X_1 (Working Capital to Total Assets): This figure has decreased significantly from a small positive figure of 0.0296 in the first quarter of 2022 to a negative of 0.1180 in 2023. Negative working capital of IDR 7.79 trillion indicates serious liquidity problems, where current liabilities exceed current assets by a significant difference. This condition caused immediate financial pressure, as companies struggled to meet short-term obligations. This decline reflects aggressive short-term borrowing to support operations, coupled with deteriorating asset quality and collection of unpaid receivables.[15]

X_2 (Retained Earnings to Total Assets): This ratio drops from almost zero (0.0012) to a striking negative number (-0.1091). Negative retained earnings of IDR 7.20 trillion show the loss of all historical gains that have existed and the huge losses experienced today. This shows that the company has destroyed shareholder value that has accumulated over the years and is now operating with a sizable deficit. Negative retained earnings also severely limit the company's ability to be financially flexible as well as access to additional capital.

X_3 (EBIT to Total Assets): The ratio showing operational efficiency has decreased from a positive figure of 0.0043 to a negative number of 0.0691. This indicates that the company is unable to make a profit from the assets it owns, with EBIT turning into a significant negative figure. This decline points to fundamental problems in business models, improper selection and execution of projects, ineffective cost management, and depressed margins in competitive situations. EBIT that is in negative territory indicates that the company loses value on core operations before accounting for financing costs.[9]

X_4 (Market Value of Equity to Total Liabilities): This ratio based on market value decreased from 0.1734 to 0.0954, reflecting diminishing investor confidence and a decline in stock prices. A lower market cap compared to liabilities indicates that the market is starting to see the likelihood of a company failing to meet obligations as something greater. This low ratio indicates that equity holders are in a fragile position before the creditor incurs a loss.[2]

X_5 (Sales to Total Assets): This asset turnover ratio actually increased from 0.0457 (Q1 annual) to 0.3415 (annualized 2023), indicating the company continues to generate revenue relative to assets. However, this increase is misleading, as it primarily reflects a release and decrease in asset value that reduces the denominator, rather than an actual operational improvement. The inability to convert sales into profits despite reasonable asset turnover highlights severe margin issues and cost structure inefficiencies.[8]

There are several interrelated factors that led to the financial crisis at WIKA: Operational Inefficiencies: In 2023, the company's revenue costs accounted for 91.7% of total sales, leaving only a small gross profit margin.

General and administrative costs remained high at almost Rp 1 trillion, although profitability declined. This reflects inefficient cost management, suboptimal project execution, and failure to gain economies of scale.[14]

High Financial Leverage: In 2023, total interest and financing expenses reached IDR 3.21 trillion, which is a significant expense that erodes potential operating profits. A company's heavily debt-dependent capital structure, which is common in infrastructure companies, becomes unsustainable when operational performance weakens. Rising interest rates in the economy in general exacerbate this situation.[1]

Project Losses and Other Costs: Other expenses of Rp 5.40 trillion are likely to include project write-offs, contract loss provisions, impairment and restructuring costs. This suggests that the company is undertaking an unprofitable project, perhaps due to aggressive bidding to maintain market share or poor risk assessment in project selection.

Liquidity Crisis: Chronic negative operating cash flow of nearly IDR 3 trillion per year indicates that the company cannot generate enough cash from operations to sustain itself. This forces a reliance on external financing, creating a debt spiral in which new loans finance operational losses rather than productive investments.[15]

Poor Portfolio Performance: Negative results from joint ventures and partnerships point to broader problems across WIKA's investment portfolio. This indicates a systemic problem rather than an isolated project failure.[6]

Macroeconomic Headwinds: The construction industry faces challenges including commodity price inflation, supply chain disruptions, delayed government payments, and reduced infrastructure spending. Although these external factors affect all competitors, WIKA's vulnerabilities indicate inadequate risk management and financial buffers.[12]

The results of this study are in line with the theoretical prediction of the Altman Z-Score model, which has shown high predictive ability in various situations. Research related to construction companies in Indonesia has recorded financial problems in a similar way using the Z-Score method, which proves the application of the model in the domestic market.[5][12]

The WIKA case provides empirical evidence to support the argument that even if companies are large and established, they can face serious financial problems and the threat of bankruptcy. This is contrary to the assumption that there is an unwritten guarantee from the government that protects SOEs from bankruptcy. The government's decision to let WIKA face such severe pressure, instead of providing immediate assistance, could indicate a policy shift towards more disciplined management of SOEs.[1]

The downward pattern seen at WIKA is in line with the classic path of financial problems that have been identified in the literature on bankruptcy forecasting: declining profits → liquidity difficulties → increased debt → erosion of equity → bankruptcy technically. The rate of decline from 2022 to 2023 shows how financial problems can develop quickly after crossing a critical threshold.[7], [16]

5. CONCLUSION

This study analyzes the prediction of the bankruptcy of PT Wijaya Karya (Persero) Tbk using the Altman Z-Score model for the 2020-2023 period. The findings of this study unequivocally show that WIKA is facing severe financial stress and a high risk of bankruptcy, with the Z-Score value consistently being in the pressure zone and eventually reaching negative territory in 2023.[4][19]

The decline in the Z score from 0.20 in the first quarter of 2022 to -0.12 at the end of 2023 reflects fundamental issues across all key financial dimensions: liquidity (negative working capital), cumulative profit (large negative retained earnings), operational efficiency (negative EBIT), market confidence (declining share prices), and asset utilization (insufficient to generate profits). The company recorded a severe net loss of IDR 7.13 trillion in 2023, eroding almost half of its shareholders' equity and creating a significant negative retained profit.[5]

The main causes of the financial crisis include operational inefficiencies with gross margins compressed to 8.3%, crushing interest expense of IDR 3.21 trillion, large miscellaneous expenses of IDR 5.40 trillion which may represent project losses and depreciation, chronic negative operating cash flow approaching IDR 3 trillion per year, and poor overall portfolio performance. These factors, combined with macroeconomic challenges in the construction sector, create a perfect storm that threatens the survival of companies.[6]

This study proves the effectiveness of the Altman Z-Score model in identifying financial difficulties, even for large state-owned companies. This analysis provides an early warning signal that WIKA needs urgent restructuring, capital injections, or other interventions to avoid formal bankruptcy proceedings. This case shows that state ownership does not guarantee financial stability and that commercial discipline ultimately applies to all companies regardless of their ownership structure.[2], [18]

Interested parties, including investors, creditors, employees, suppliers, governments, and management, should be aware of the seriousness of the situation and take appropriate protective or corrective measures. Without comprehensive restructuring efforts, WIKA's operational sustainability as a sustainably operating entity remains seriously threatened.[7]

Future research should monitor WIKA's restructuring efforts and their results, compare patterns of financial distress among Indonesian construction companies, validate the predictive accuracy of the Altman Z Score as the situation develops, analyze the role of government intervention in SOE bankruptcy, and examine industry factors that affect the financial health of the construction sector. This kind of research will contribute to better bankruptcy prediction models, SOE governance frameworks, and risk management practices in emerging markets.[1]

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