

Analysis of Financial Distress at PT bank NTT (period 2020-2023)

¹Fransiska Tri M. Ngganggus, ²Pius Bumi Kellen, ³Junita C. Nenabu, ⁴Sari A. Natonis

¹²³⁴Fakultas Ilmu Sosial dan Ilmu Politik, Universitas Nusa Cendana

fransiskatrimarta@gmail.com

Abstract- *Financial distress is a condition in which a company experiences financial difficulties that may lead ultimately lead to bankruptcy. For banks, such conditions require prompt and effective intervention to prevent further deterioration. This study aims to assess the financial distress of PT Bank NTT over the period 2020–2023 using the Altman Z-Score and Zmijewski models. The analysis using the Altman Z-Score model indicates that PT Bank NTT is in the grey area, suggesting a moderately unhealthy financial condition. In contrast, the Zmijewski model reveals that the bank is experiencing a more severe level of financial distress. A comparative analysis of the two models shows that, while the Altman Z-Score signals instability, the Zmijewski model provides a more conclusive indication that PT Bank NTT is at a high risk of bankruptcy. The findings of this study indicate that overall, PT Bank NTT is at high risk of financial distress and requires immediate strategic measures to ensure the sustainability of its operations.*

Keyword- *Zmijewski; Springate; Financial Distress.*

I. INTRODUCTION

Financial distress is a condition in which a company experiences serious financial difficulties that threaten the continuity of its operations. This situation is often characterized by the company's inability to meet its financial obligations, such as debt payments or other liabilities to creditors and suppliers. If not properly managed, financial distress has the potential to escalate into bankruptcy, which can harm all stakeholders. Therefore, it is crucial to understand the level of a company's financial distress in order to identify the extent of its risk and enable early preventive measures to be taken.

The Altman Z-Score and Zmijewski models are two commonly used approaches for assessing a company's financial health, including in the banking sector, by focusing on liquidity, profitability, leverage, and activity ratios. Although similar, these two methods differ in the components and focus of the ratios they employ.

PT Bank NTT, Tbk is a Regional Development Bank (BPD) in East Nusa Tenggara

Province that plays a strategic role in supporting regional economic development. As a regional bank, PT Bank NTT, Tbk faces financial risks similar to those of conventional banks, particularly in managing its credit portfolio. Based on Law No. 13 of 1962 concerning the Principles of Regional Development Banks, such banks also play an important role in supporting the local economy by providing easier access to finance and promoting financial inclusion. Financial data from PT Bank NTT, Tbk obtained from the financial statements for the 2020–2023 period shows fluctuations in several key indicators, such as total assets, total liabilities, equity, and net profit. Specifically, this financial data indicates a significant decline in net profit, an increase in debt obligations, and equity growth that is not proportional to the growth in assets. PT Bank NTT's net profit fell drastically from IDR 236 million in 2020 to IDR 110 million in 2023. This condition serves as an early indicator of potential financial distress that requires serious attention to ensure the company's operational sustainability.



II. LITERATURE REVIEW

2.1. Financial Statements

Financial statements are representations of a company's condition at a specific point in time (typically for a single accounting period) and provide an overview of the financial position achieved by the company during that period. Financial statements reflect the financial condition of an entity either at a specific moment or over a certain period. These documents are prepared for various purposes, including internal evaluation by management. For example, quarterly or semi-annual financial statements can be used to monitor the company's performance periodically. In addition, financial statements are required to meet external reporting needs, such as those of shareholders, tax authorities, or financial institutions [1].

2.2. Types Of Financial Ratios

Financial ratios are essential tools for assessing a company's financial condition and performance. Commonly used financial ratios are generally categorized into four main groups: profitability ratios, liquidity ratios, solvency ratios, and activity ratios. Profitability ratios are used to measure a company's ability to generate profits. Liquidity ratios assess a company's capacity to meet its short-term obligations. Solvency or leverage ratios evaluate the extent to which a company finances its assets through debt. Meanwhile, activity ratios aim to measure how efficiently a company utilizes its assets to generate revenue.

Each type of ratio consists of specific indicators. Profitability ratios include ROA (Return on Assets), ROE (Return on Equity), GPM (Gross Profit Margin), OPM (Operating Profit Margin), and NPM (Net Profit Margin), which reflect a company's ability to generate profits from its assets, equity, or sales. Liquidity ratios consist of

the Current Ratio, Quick Ratio, and Cash Ratio, which measure a company's ability to meet its short-term liabilities using current assets or cash. Solvency ratios include DAR (Debt to Assets Ratio), DER (Debt to Equity Ratio), Long-Term Debt to Equity, Time Interest Earned, and Operating Income to Liabilities, which indicate the proportion of debt to assets or capital, as well as the company's ability to pay interest and obligations. Finally, activity ratios such as accounts receivable turnover, inventory turnover, working capital turnover, fixed assets turnover, and total assets turnover assess how efficiently a company's assets are utilized in its operations [2] (Hery, 2020).

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2.4. Financial Distress

Financial distress refers to a situation in which a company faces financial difficulties that may potentially lead to bankruptcy. Without effective managerial intervention, financial distress can escalate into bankruptcy. Research on financial distress began with Altman (1984) in the 1980s, which provided empirical evidence on the ability to predict a company's future financial condition. Altman (1984) developed the Z-Score model as a tool to predict the risk of financial distress in companies, and this model continues to be widely used today [3].

Financial distress can be measured through a quantitative approach using financial ratio analysis, which aims to provide an overview of a company's financial health and the potential risk of bankruptcy. In this study, two widely recognized methods are employed to measure financial distress: the Altman Z-Score and the Zmijewski models. Although these two methods differ in their approaches, each offers significant insights into identifying potential financial failure, particularly in the context of PT Bank NTT. The following section explains these two methods in greater detail.

III. RESEARCH METHODS

The research approach employed in this study is a descriptive quantitative approach. This study was conducted at PT Bank NTT for the period 2020–2023. The data used in this research are secondary data obtained from the financial statements of PT Bank NTT for the 2020–2023 period. These data were sourced from the official financial reports published on PT Bank NTT's official website [4]. The data collection technique utilized in this study was literature review. The data collected in this research required further analysis in order to draw accurate conclusions. Therefore, the data were analyzed using financial distress analysis techniques through the application of the Modified Altman Z-Score and Zmijewski models.

IV. RESULT AND DISCUSSION

4.1. Financial Ratio Analysis

Table 1. Financial Ratio Analysis

BANK NTT FINANCIAL DATA FROM BALANCE SHEET AND PROFIT AND LOSS REPORTS				
Ket	Year			
	2020	2021	2022	2023
T.Assets	14,720,356	15,666,743	17,032,120	17,352,444
T.Liabilities	12,654,343	13,328,535	14,463,177	14,777,275
T.Equity	2,066,013	2,308,208	2,568,943	2,548,169
Current Asset	14,258,063	14,999,451	16,355,960	16,963,802
Current	11,677,7	12,577,3	12,852,6	13,261,4



liabilities	63	07	42	82
Retained Earning	515,793	537,308	651,405	561,941
Net Profit	236,289	228,268	228,931	110,151
EBIT	323,943	302,512	305,353	148,545
Sale	928,431	924,055	1,061,950	1,040,043
Debt Ratio	0.860	0.851	0.849	0.852

Over the past four years, Bank NTT's assets have grown from IDR 14.72 trillion to IDR 17.35 trillion, indicating positive financial expansion. Liabilities have also increased but remain within reasonable limits, reflecting relatively sound risk management. However, net profit has continued to decline, reaching only IDR 110.15 billion in 2023, signaling profitability pressure. Although revenue has remained stable, improvements in financial management effectiveness are necessary. The high debt ratio indicates a reliance on external financing, which should be closely monitored.

4.2. Financial Distress Analysis Using the Altman Z-Score Method

Table 2. Financial Distress Analysis Using the Altman Z-Score Method

Year	2020	2021	2022	2023
6.56(XI)	1.15	1.01	1.35	1.40

3.26(X2)	0.114	0.112	0.125	0.106
6.72(X3)	0.148	0.130	0.120	0.058
1.05(X4)	0.171	0.182	0.187	0.181
Z-Score	1.58	1.44	1.78	1.74
Category	Grey Area	Grey Area	Grey Area	Grey Area

During the period of 2020–2023, Bank NTT's Z-Score consistently remained within the grey area, indicating a financially unstable condition. The scores fluctuated between 1.44 and 1.78, influenced by suboptimal performance in working capital ratios, retained earnings, and profitability.

Based on the calculation using the Altman Z-Score method, PT Bank NTT Tbk recorded Z-Score values ranging from 1.44 to 1.78 throughout 2020–2023, placing the bank within the Grey Area category. This zone suggests that the financial condition is not entirely secure, although it does not yet indicate distress. The year-to-year fluctuations in the Z-Score highlight financial instability, especially due to declines in 2021 and 2023. Key contributing factors to this instability include working capital to total assets, retained earnings, EBIT, and equity to total liabilities ratios.

Furthermore, both retained earnings and EBIT showed signs of decline and volatility, indicating pressure on the bank's profitability and capital resilience. This instability is likely driven by increased operating expenses, declining net interest income, or deteriorating credit quality. To move out of the grey area, Bank NTT must



enhance its operating income, strengthen credit risk management, and grow its retained earnings. These findings align with the studies of Indah Ariffianti (2022) and [5], which highlight that firms in the grey area require strategic improvements to avoid falling into financial distress. A comprehensive evaluation of the bank's financial structure is a crucial step toward maintaining long-term financial stability [6].

4.3. Financial Distress Analysis using the Zmijewski Method

Table 3. Financial Distress Analysis Using the Zmijewski Method

Year	2020	2021	2022	2023
4.5 (X1)	(0.072)	(0.066)	(0.060)	(0.0290)
5.7 (X2)	4.900	4.849	4.840	4.854
0.004 (X3)	0.0049	0.0051	0.0054	0.0054
X-Score	4.83	4.79	4.79	4.83
Categ ory	Financi al Distres	Financi al Distres	Financi al Distres	Financia l Distres

During the period of 2020 to 2023, PT Bank NTT consistently recorded positive X-Score values above 4 based on the Zmijewski model, indicating a persistent state of financial distress. The absence of a downward trend toward zero further underscores the sustained financial risk. Despite minor fluctuations, the X-Score ranged from 4.79 to 4.83, which was not significant enough to shift the bank out of the distress zone, reflecting continued financial pressure throughout the period.

The fluctuations in X-Score were primarily influenced by liquidity, profitability, and leverage

ratios. The most critical factors exacerbating the bank's condition were the consistently negative return on assets (ROA) and a high leverage ratio, indicating a strong reliance on debt financing. To improve its financial position, Bank NTT must enhance its asset profitability, reduce debt burdens, and strengthen liquidity through operational efficiency and sound capital management strategies.

4.4. Comparison of Altman Z-Score and Zmijewski Methods

Table 4. Comparison of Altman Z-Score and Zmijewski Methods

Year	Z-Score	Category
2020	1.58	Grey Area
2021	1.44	Grey Area
2022	1.78	Grey Area
2023	1.74	Grey Area
Year	X-Score	Category
2020	4.83	Financial Distres
2021	4.79	Financial Distres
2022	4.79	Financial Distres
2023	4.83	Financial Distres

The analysis results from both the Altman Z-Score and Zmijewski models reveal differing assessments of PT Bank NTT's financial condition. The Altman method places the bank within the grey area (Z-Score range: 1.44–1.78), indicating a condition that is not yet safe but also not definitively in financial distress. In contrast, the Zmijewski method consistently indicates financial distress, as the X-Score values remained above 4.79 throughout the 2020–2023 period, signaling sustained financial risk. This divergence is attributed to the differing focus of financial ratios utilized by each method. While the Altman model emphasizes profitability and operational efficiency,



the Zmijewski model places greater weight on leverage and return on assets (ROA) [7].

The Altman Z-Score analysis suggests that the bank is in a vulnerable position and requires improved asset utilization and operating income to move out of the grey zone. Meanwhile, the Zmijewski model highlights a more urgent financial concern, underscoring the need for a comprehensive evaluation of profitability, solvency, and liquidity.

These contrasting outcomes stem from the distinct analytical frameworks of the two models. The Altman Z-Score incorporates a broader range of indicators, including liquidity, profitability, and asset efficiency, resulting in more variable outcomes. In contrast, the Zmijewski model uses three core ratios that provide a sharper focus on long-term financial viability. This study supports the findings of [5][5], [8] who argue that the combination of both models offers a more comprehensive view of a company's financial health. Accordingly, applying both models simultaneously can provide a solid foundation for managerial decision-making aimed at preventing future bankruptcy.

V. CONCLUSION AND SUGGESTIONS

Based on the results of the research conducted, it can be concluded that PT Bank NTT Tbk was in a financially vulnerable condition during the 2020–2023 period. The analysis using the Altman Z-Score method shows that the company consistently fell within the "grey area" zone, indicating moderate financial health and a potential risk of distress. Meanwhile, the Zmijewski method revealed that PT Bank NTT Tbk was in a state of financial distress throughout the same period, as the X-Scores remained above zero, suggesting a high risk of bankruptcy. A

comparative analysis of both methods confirms that while the Altman Z-Score identifies the bank as being in a less healthy but not yet distressed state, the Zmijewski model signals a more severe financial condition.

To overcome financial distress and strengthen financial stability, PT Bank NTT Tbk should consider various strategic alternatives. Key actions include improving its leverage ratio by reducing dependence on high-interest debt and increasing equity capital. This may involve debt restructuring through renegotiation of financial obligations, seeking more efficient funding sources, and considering the issuance of corporate bonds. The company should also focus on enhancing profitability by improving operational efficiency, optimizing interest income, and tightening credit management to minimize default risk and reduce the Non-Performing Loan (NPL) ratio. Embracing digital banking services is also essential to reduce costs and expand market reach. Once financial conditions stabilize, PT Bank NTT Tbk may consider a strategic expansion through an Initial Public Offering (IPO) to attract investors and strengthen its capital structure, while maintaining good corporate governance, transparency in financial reporting, and sound financial ratios. For future research, it is recommended to use other financial distress prediction models such as the Grover and Springate methods, and to incorporate additional variables related to credit quality, such as the NPL ratio, Loan to Deposit Ratio (LDR), and the CKPN coverage ratio, to provide a more comprehensive analysis of the bank's financial condition.

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