
BANKRUPTCY ANALYSIS OF PT. SRITEX USING ALTMAN Z-SCORE, AND ZMIJEWSKI: A CASE STUDY

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Abstract

This study examines the financial distress condition of PT. Sri Rejeki Isman Tbk (PT. Sritex) prior to its bankruptcy declaration in 2024, focusing on the period 2018–2023. The analysis employs two widely recognized bankruptcy prediction models, namely the Altman Z-Score and the Zmijewski model. Results indicate that the Altman Z-Score placed PT. Sritex in the grey area during the early years, with the condition deteriorating into financial distress from 2021 to 2023. The Zmijewski model presented a similar pattern, classifying the company as financially healthy at first, but signaling financial distress starting in 2021 and continuing until 2023. The consistency between both models suggests that financial difficulties had emerged several years before the official bankruptcy, indicating that preventive measures could have been taken earlier. The findings highlight the importance of applying multiple prediction models to provide a more comprehensive assessment of a company's financial health. For practitioners and stakeholders, this approach offers earlier detection of potential distress, enabling timely strategic responses. Moreover, the case of PT. Sritex illustrates how macroeconomic pressures, operational inefficiencies, and declining market conditions can accelerate a company's path toward bankruptcy. This underscores the need for continuous financial monitoring and proactive risk management in order to mitigate potential crises and sustain business continuity.

Keywords: Altman Z-Score, Zmijewski, Financial Distress, PT. Sritex

Introduction

PT Sri Rejeki Isman Tbk or better known as PT Sritex is the largest textile company in Southeast Asia which has been established and operating since 1966 in producing fabrics and clothing. PT. Sritex was once trusted to make military uniforms for NATO and the German army in 1984 (Muhid, 2025). After 5 decades of success, PT Sritex was declared bankrupt by the Semarang Commercial Court on October 21, 2024 due to a lawsuit from one of its creditors, PT Indo Bharat Rayon, because it was considered not to fulfill its debt payment obligations. The condition of PT Sritex had already shown financial distress before being sued by its creditors, such as decreased revenue, reduced operating activities, and delays in debt payments. On March 1, 2025, PT Sritex was declared to have ceased operations which led to thousands of employees being laid off. This phenomenon is interesting to study because it can be a lesson to detect bankruptcy early.

According to Amalia and Kristijadi (2003), a company's financial distress can be characterized by continuous annual losses, cash flow that is smaller than long-term debt, employee dismissals, delays in dividend payments for more than one year, and a decrease in the value of company assets. This study analyzes the financial condition of PT Sritex for the period 2018-2023 using bankruptcy prediction models that are well known and commonly used, namely Altman Z-Score and Zmijewski. The analysis aims to compare the results of both models and assess the accuracy of their predictions against the company's actual conditions before bankruptcy, enabling the company to be vigilant about bankruptcy and take preventive measures earlier.

Financial Distress

According to Alponia Lau (2021), financial distress is a condition in which a company faces two critical financial extremes. This situation begins when the company experiences an inability to meet short-term financial obligations, which causes illiquid conditions, until it continues to become insolvent if not resolved immediately. If financial distress continues, the company is at risk of bankruptcy.

Agency Theory

Agency theory explains the contractual relationship between the owners of a company (principals) and the management (agents) who are given the authority to run the business. Jensen and Meckling (1976) state that conflicts of interest can arise because each party has different objectives; owners aim to maximize profits, while management may focus on personal benefits such as bonuses, positions, or projects that enhance their reputation. Based on Sritex's 2021 financial report, there are signs of information asymmetry where management failed to transparently disclose a 33.92% drop in sales and a USD 1.08 billion loss, as well as lawsuits from suppliers that were not openly communicated. Risky expansion decisions and a sharp increase in short-term debt from USD 398 million to USD 1.57 billion also indicate conflicts of interest and the use of

funds for less productive purposes. These findings suggest that weak corporate governance and uncontrolled agency problems significantly contributed to Sritex's bankruptcy amid the pressures of the pandemic and supply chain disruptions.

Altman Z-Score Model

The Altman Z-Score model was developed by Edward I. This model combines five financial ratios, namely working capital to total assets, retained earnings to total assets, earnings before interest and taxes (EBIT), market value of equity to total debt, and sales to total assets. The prediction results of the five financial ratios are used to assess the level of risk of bankruptcy of a business entity (Andika R. & Zulkifli, 2024).

Zmijewski Model

The Zmijewski model is one of the company bankruptcy prediction methods developed in 1984 by Michael Zmijewski. Zmijewski only uses three financial ratios, namely Return on Assets (ROA), Leverage (Total liabilities to Total Assets), and Current Ratio as a representation of liquidity. The research first conducted by Zmijewski has an accuracy rate of 99%, with a sample of 40 bankrupt companies and 800 companies classified as healthy (Buchari et al., 2023; Andika R. & Zulkifli, 2024).

Methods

This research is a case study research that focuses on the company PT Sri Rejeki Isman Tbk (PT Sritex). This research uses a quantitative descriptive approach with the aim of observing the company's financial distress condition. To measure these conditions, two widely known bankruptcy prediction models are used, namely the Altman Z-Score model and the Zmijewski model. The data in this study is secondary data obtained from the annual financial statements of PT. Sritex which can be accessed through the company's official website at <https://www.sritex.co.id/id/>.

The Altman Z-Score model is used to measure the company's financial condition with five financial ratio indicators (X_1 - X_5). Based on the explanation of previous researchers (Andika R. & Zulkifli, 2024; Riesmiyantiningtias, et al, 2023), the classification of company bankruptcy indicators from the Z-Score calculation is as follows: $Z > 2.99$ is included in the condition of the company in a healthy condition, $1.81 < Z < 2.99$ indicates the company is in a gray area, and $Z < 1.81$ indicates the company is in the bankrupt zone. The equation is as follows:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5 \quad (1)$$

Where:

The Zmijewski model uses three financial ratios to assess the company's bankruptcy status. A score < 0 indicates a healthy or non-financial distress condition, while a score > 0 indicates bankruptcy or financial distress (Yuliana et al., 2024; Buchari et al., 2023). Unlike the Altman Z-Score, the Zmijewski model requires interpretation based on the value obtained rather than direct categorical classification. The equation is as follows:

$$X = -4,3 - 4.5X_1 + 5.7X_2 + 0.004X_3 \quad (2)$$

Where:

X = Zmijewski score

X_1 = Return on assets (ROA)

X_2 = Leverage (total liabilities to total assets)

X_3 = Current ratio

Result and Discussion

This section explains how the results of the calculation of financial ratios and bankruptcy models using Altman Z-Score and Zmijewski for the financial statements of PT Sri Rejeki Isman Tbk during the period 2018-2023. The calculation of each model has been explained in the method section

Calculation with the Altman Z-Score

Table 1 presents the result of the five ratios (X_1 - X_5) and the Z-Score for each year. The calculation of MVE for 2018-2023 uses the Book Value of Equity approach because PT. sritex's shares are being suspended by the Indonesia Stock Exchange (IDX) in accordance with PT Kustodian Sentral Efek Indonesia (KSEI) letter No. KSEI-3657/DIR/0521 dated May 17, 2021 and in order to maintain consistency in the calculation of the X_4 ratio.

Table 1. Altman Z-Score Model Calculation

No	Year	X ₁	X ₂	X ₃	X ₄	X ₅	Z-Score
1	2018	0.350	0.230	0.119	0.609	0.758	2.257
2	2019	0.457	0.255	0.117	0.613	0.758	2.417
3	2020	0.406	0.259	0.095	0.570	0.693	2.198
4	2021	-0.802	-0.488	-0.864	-0.244	0.687	-3.954
5	2022	0.218	-1.291	-0.359	-0.505	0.686	-2.349
6	2023	0.099	-1.791	-0.202	-0.595	0.501	-2.911

Source: Data Processing Result, 2025

Based on the results of the calculation of ratios X₁ to X₅, it can be seen that the Z-Score value of PT Sritex has experienced a decreasing trend since 2021. This indicates that the company's financial condition has deteriorated until it enters the financial distress category. The X₁ ratio, which reflects the ability to fulfill short-term obligations, experienced a significant decline and became negative (-0.802) in 2021. This negative value indicates that current liabilities are greater than current assets. Although it increased to positive (0.218) in 2022, it still reflects low liquidity and continued financial stress. According to Kasmir (2015), a sharp decline in working capital can be an early indicator of financial distress, because the company has difficulty maintaining cash flow for its daily operations.

The X₂ ratio, which measures retained earnings to total assets, decreased to negative (-0.488) in 2021 and continued to decrease (-1.791) in 2023. This decrease indicates continued losses and difficulty maintaining profitability. Ratio X₃, which assesses the ability to generate profit from assets, also returned a negative value (-0.864) in 2021. Although it improved in 2022-2023, the value remained negative, indicating that the efficiency of asset utilization to generate profits is still low. Ratio X₄, which measures the ratio of the market value of equity to total liabilities, fell to negative from 2021 (-0.244) to 2023 (-0.595). This implies that the company's value in the market is less than its debt. Ratio X₅, which compares sales to total assets, also decreases gradually from 0.758 in 2018 to 0.501 in 2023. According to Kasmir (2015), a ratio that continues to show a decline indicates that the company is having difficulty in maximizing its fixed assets to generate sales.

Based on the results of calculations using the Altman Z-Score Model, it shows that PT Sritex has experienced gray area conditions since 2018-2020 which indicates the occurrence of symptoms of financial stress even though it has not yet shown a severe crisis. The condition worsened from 2021-2023 which showed a negative number below 1.8 so that the condition of PT Sritex became financial distress for 3 years before being declared bankrupt. This finding strengthens the indication that PT Sritex is experiencing serious financial pressure and may have difficulty rising from its financial difficulties. This situation can be caused by a decrease in company performance, decreased production, accumulated losses over the years, and dependence on debt which has been explained from the calculation of the X₁-X₅ ratio which decreases every year. The results of this study are in accordance with previous research (Erlina, et al, 2024) which shows consistent results gray area in 2018-2020, and financial distress conditions in 2021-2023.

Calculation with the Zmijewski

Tabel 2 presents the result of the three ratios (ROA, leverage, and current ratio) and the Zmijewski score for each year.

Table 2. Zmijewski Model Calculation

No	Years	ROA/X ₁	Leverage/X ₂	Current Ratio/X ₃	Zmijewski Score	Status Distress if X>0
1	2018	0.062	0.622	3.085	-1.023	Safe
2	2019	0.056	0.620	4.902	-1.000	Safe
3	2020	0.046	0.637	2.890	-0.865	Safe
4	2021	-0.876	1.323	0.373	7.186	Financial Distress
5	2022	-0.517	2.022	2.567	9.561	Financial Distress
6	2023	-0.269	2.471	1.481	11.004	Financial Distress

Source: Data Processing Result, 2025

Based on the calculation of ROA in 2021, PT Sritex experienced a sharp decrease to a negative value (-0.876). This condition reveals the company's inability to generate profits with its assets efficiently. There was an increasing trend in 2022-2023, but the ROA value still showed a negative value which signaled that the recovery effort had not fully recovered. According to Kasmir (2015), a negative ROA reflects operational inefficiencies and potential losses in the long term. According to the calculation of leverage, PT Sritex

experienced an increase during the period 2018 (0.622) to 2023 (2.471) which shows the company's dependence on debt and illustrates that total debt is more than its total assets. According to Harahap (2016), a leverage value exceeding 1 reflects the risk of bankruptcy because assets are unable to cover all of the company's liabilities.

According to the current ratio calculation, PT Sritex experienced a significant decline from 2018-2021, from 3.085 to 0.373. This decrease indicates that the company's current assets are reduced in the face of short-term liabilities. In 2022-2023, the trend has increased but the ratio cannot be categorized as ideal so that the company has limitations in meeting its short-term obligations which is a strong indication that the company is experiencing the possibility of bankruptcy or liquidation (Kasmir, 2015). The results of the Zmijewski model calculation in 2018-2020, PT Sritex is classified as non-financial distress because the score is below zero, which reflects the company's condition in the safe category. Since entering 2021-2023, PT Sritex is classified as financial distress because the score is above zero, which is an indication of high bankruptcy. This increase is supported by accumulated losses from year to year (negative ROA), high dependence on debt (high leverage ratio), and decreased liquidity (low current ratio). This trend is in line with the deterioration of financial ratios over the period and is in line with the results obtained using the Altman Z-Score model, which has decreased since 2021.

Table 3. Comparison of Altman Z-Score and Zmijewski Bankruptcy Prediction Scores 2018-2023

No	Years	Altman Z-score	Altman Status	Zmijewski Score	Zmijewski Status
1	2018	2.257	Grey area	-1.023	Safe
2	2019	2.417	Grey area	-1.000	Safe
3	2020	2.198	Grey area	-0.865	Safe
4	2021	-3.954	Financial Distress	7.186	Financial Distress
5	2022	-2.349	Financial Distress	9.561	Financial Distress
6	2023	-2.911	Financial Distress	11.004	Financial Distress

Source: Data Processing Result, 2025

Based on Table 3, the Altman Z-Score and Zmijewski model calculations show consistent results for bankruptcy predictions for the 2021-2023 period, indicating financial distress. Both models indicate the same results for bankruptcy predictions. The Altman Z-Score dropped below 1.8, indicating financial distress since the start of 2021, while the Zmijewski score increased sharply in the same year, exceeding zero (7.186), which is a strong indication that the company experienced a significant decline in its financial condition in the same year. However, the two models have different values for the 2018-2020 period. The Altman Z-score indicates a "grey area," meaning this condition could serve as a warning for the company regarding financial distress, even though the company has not yet entered a state of financial distress. In contrast, the Zmijewski calculation results show a safe condition during the same period because the score is below zero.

The comparison of these two models illustrates the differences in characteristics between the two bankruptcy models used. The Altman Z-Score shows gradual changes in financial distress related to financial conditions, while the Zmijewski model shows significant changes in financial ratios, particularly profitability and liquidity. These results are in line with the research objective of comparing the two models in predicting bankruptcy. The findings indicate that while both models are accurate in identifying crises during the 2021–2023 period, the Zmijewski model provides earlier signals of potential declines in financial performance, whereas the Altman model helps map shifts in financial status from a safe zone toward distress. Understanding these characteristic differences is crucial for management and investors to select the appropriate model for their analytical and decision-making needs.

Furthermore, the bankruptcy of PT Sritex can also be explained through the lens of agency theory. Jensen and Meckling (1976) argue that conflicts between shareholders (principals) and managers (agents) arise when managers prioritize their own interests over long-term corporate sustainability. In the case of Sritex, the sharp increase in short-term debt from USD 398 million to USD 1.57 billion in 2021, along with a lack of transparency regarding declining sales and mounting losses, reflects agency problems that worsened the company's financial distress. These findings suggest that, besides numerical predictions provided by the Altman Z-Score and Zmijewski models, weak governance and unresolved agency conflicts significantly contributed to the company's eventual bankruptcy.

Conclusion

Based on calculations carried out using the Altman Z-Score and Zmijewski bankruptcy prediction models, the results are similar during the 2018-2023 period. The Altman Z-Score model shows a gray area in 2018-2020, which worsened into financial distress between 2021 and 2023. The Zmijewski prediction model also shows the same thing. The company's condition is in a safe condition during the 2018-2020 period, and becomes worsened into financial distress condition since entering 2021. This trend reflects the deterioration of

the company's financial performance and strengthens the prediction of bankruptcy experienced by PT Sritex based on the calculations of the two models.

In addition to the accuracy of the Altman Z-Score and Zmijewski models, agency conflicts also contributed significantly to the bankruptcy of PT Sritex. The company's 2021 financial statements show that short-term debt rose to USD 1.57 billion, which was not allocated to productive activities. At the same time, information asymmetry occurred because management did not transparently disclose a 33.92% decline in sales and a loss of USD 1.08 billion. These agency issues are consistent with the financial distress signals captured by both models, which reveal that weak governance and conflicting interests between shareholders and management accelerated the company's collapse.

This study has limitations on the number of models used and only within the scope of one company, namely PT Sri Rejeki Isman Tbk. Therefore, further research is recommended to conduct empirical studies using more than two bankruptcy prediction models and include several companies, both from the same sector and different sectors. In order for the results to be more comprehensive and have a broad picture to be a material for preventive decision making against bankruptcy prediction.

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