



## Bankruptcy Prediction of PT Sri Rejeki Isman Tbk using the Altman Z-Score Model before the PKPU Filing

Zahra  
Pattimura University

Corresponding Author: Zahra: [zsyaiful.zs@gmail.com](mailto:zsyaiful.zs@gmail.com)

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### ABSTRACT

The objective of this study is to analyze the ability of the Altman Z-Score model to predict the bankruptcy of PT Sri Rejeki Isman Tbk (Sritex) prior to the filing of PKPU in 2021. The data used in this study are secondary data from 2017-2020 financial reports using a descriptive quantitative approach. The results of the Z-Score calculation show a significant decline from 2019 to enter the danger zone in 2021. The Altman Z-Score is effective as an early warning system for the Indonesian textile industry because the 2021 Z-Score value of 1.097 indicates a high bankruptcy potential and is in line with the actual PKPU event.

## INTRODUCTION

In the economic world, corporate bankruptcy has a significant impact not only on the company itself, but also on investors, creditors, employees, and regulators. Bankruptcy can cause large-scale instability in the financial system, especially if it involves large firms with many relationships in the industrial supply chain (Altman et al., 2017). Therefore, early identification of bankruptcy signs becomes an important part of the economic decision-making and risk management process (Bellovary et al., 2007).

Since the beginning of 2020, when the COVID-19 pandemic hit, many effects have worsened the finances of many companies, especially in manufacturing and labor-intensive industries. The textile and garment products (TPT) industry, which has been a major driver of Indonesia's non-oil and gas exports, has faced external challenges that have hampered business continuity, including fluctuations in global demand, supply chain disruptions, and market uncertainty (World Bank, 2021).

PT Sri Rejeki Isman Tbk, or Sritex, is one of the largest textile companies in Southeast Asia. Known for its strong export performance and worldwide customer base, it is also known for its failure to repay financial obligations worth over USD 175 million to international creditors. However, due to its inability to pay financial obligations worth over USD 175 million to international creditors, the company surprisingly filed a Proceedings for the Suspension of Payment Obligations (PKPU) application in mid-2021 (Bisnis Indonesia, 2021). Considering Sritex's reputation as a highly capitalized public company with outstanding historical performance, this event is a major irony for the domestic business sector (Okezone, 2021).

Sritex's application for PKPI raises important questions among academics and financial professionals, namely: Did the bankruptcy actually occur suddenly, or were there financial signals indicating a decline in performance long before the crisis? Are companies unable to read the signs of corporate bankruptcy? Or how good a predictor should a company be at reading these signals?

The Altman Z-Score, created by Edward Altman in 1968, is one of the most popular bankruptcy prediction models worldwide. This model uses five key financial metrics (liquidity, retained earnings, profitability, solvency, and asset utilization efficiency) to create a score indicating the level of bankruptcy risk. The Altman Z-Score has been shown to provide highly accurate predictions in many industries, such as manufacturing. Many countries have used it to aid in corporate financial analysis (Altman, 1968).

In the Indonesian textile industry, several previous studies have shown that the Altman Z-Score model can indicate a deterioration in a firm's financial health two to three years before the firm actually experiences financial failure (Setiawan & Rafiani, 2021). However, there has been little research specifically

examining the effectiveness of this model in large firms like Sritex, especially with a long-term focus.

By providing an empirical analysis of PT Sritex's financial statements from 2017 to 2020, this study aims to address these differences. The purpose of this study is to determine whether the Altman Z-Score model can indicate that the company's financial condition is deteriorating, leading to the filing of PKPU in 2021. This method is not only relevant from an academic perspective but also important for stakeholders involved in developing financial risk mitigation strategies.

Based on the above brief description, the problem formulation is whether the Altman Z-Score model is able to predict the possible bankruptcy of PT Sri Rejeki Isman Tbk before its application to PKPU in 2021.

## LITERATURE REVIEW

### *Sritex Bankruptcy Prediction*

In the business world, bankruptcy is an important phenomenon that indicates a company's inability to meet its financial obligations. According to Thohari & Sudjana (2015), bankruptcy occurs when a company cannot run its operations with the required efficiency, which in turn results in a lack of profit. According to Law No. 37 of 2004, a company may be declared bankrupt if it cannot pay its debts to two or more creditors. Therefore, in corporate financial risk management, it is very important to identify signs of bankruptcy immediately (Brimantyo et al., 2016).

The Altman Z-Score, created in 1968 by Edward Altman using a multivariate discriminant approach, is one of the most widely used models for predicting bankruptcy. This model uses five financial ratios: Working Capital/Total Assets, Retained Earnings/Total Assets, EBIT/Total Assets, Market Value of Equity/Total Liabilities, and Sales/Total Assets. A Z-score below 1.81 indicates a distressed state, while a score of 1.81 to 2.99 indicates a gray zone, and a score above 2.99 indicates a safe zone (Altman I Edward, 1968; Setiawan & Rafiani, 2021).

The reliability of the Altman Z-Score has been tested in many industries, including textiles and labor-intensive industries. A study by Natania & Suhartono (2024) found that this model was more accurate than the Springate and Zmijewski models in predicting bankruptcy of textile firms in the IDX.

The textile sector is facing increasing pressure as a result of the COVID-19 pandemic. The Z-Score value of manufacturing firms fell dramatically due to the decline in EBIT and sales (Fitria et al., 2022). The Z-Score value of manufacturing firms fell during the pandemic, according to Setiawan & Rafiani (2021) due to a decline in EBIT and sales. Brimantyo et al., (2016) reinforce this finding by saying that liquidity and profitability ratios are very important in calculating the Z-Score

and are an early indication of financial distress in labor-intensive industries such as textiles.

Furthermore, Thohari & Sudjana (2015) research found empirical support, stating that the downward trend in Z-scores in recent years is an important signal for textile companies to pay attention to bankruptcy. This demonstrates the importance of regularly monitoring financial indicators to reduce the risk of distress symptoms that can lead to legal proceedings such as PKPU or bankruptcy.

PT Sri Rejeki Isman Tbk (Sritex), one of Southeast Asia's largest textile companies, filed for PKPU in 2021 after failing to repay its debt obligations. However, financial reports from 2018 to 2020 show an increasing debt burden, declining profits, and decreasing operating efficiency. Therefore, we need to assess whether this model can inform us in advance of Sritex's bankruptcy.

Given this background, this study aims to test the ability of the Altman Z-Score model to predict PT Sritex's bankruptcy prior to the 2021 PKPU filing. This analysis is expected to confirm the Z-Score as an early warning system using data from the company's previous financial report. Therefore, the following hypothesis is proposed:

**H1:** The Altman Z-Score model is capable of predicting the potential bankruptcy of PT Sri Rejeki Isman Tbk prior to the PKPU filing.

## **METHODOLOGY**

### *Population And Sample*

The population used in this study is the annual financial report of PT Sri Rejeki Isman Tbk (Sritex), which is officially published on the company's website or on the Indonesia Stock Exchange (IDX). The financial statements include all the data required to calculate the components of the Altman Z-Score model, such as total assets, total liabilities, market value of equity, retained earnings, earnings before interest and taxes (EBIT), and net sales.

For this study, we used Sritex's financial statements from 2017 to 2021 because we believed the company would file for a Suspension of Debt Payment Obligations (PKPU) in 2021, making data prior to that year relevant to observing the trend in the company's financial condition. Therefore, the method used is a long-term study using purposive sampling techniques, meaning that samples are selected according to the research objectives.

Z-score trend analysis and an assessment of whether deterioration may indicate early bankruptcy symptoms can be performed by selecting data from five consecutive years prior to the PKPU. This method is expected to enable research to evaluate the effectiveness of the Altman Z-Score model as an early warning system for bankruptcy in public manufacturing firms in Indonesia.

### *Data Collection Technique*

The secondary data for this study come from the annual financial reports of PT Sri Rejeki Isman Tbk (Sritex) from 2017 to 2020, which were collected using the documentation method. These data are collected from official sources such as:

- The official website of PT Sri Rejeki Isman Tbk, which can be accessed at <https://www.sritex.co.id>
- Indonesia Stock Exchange (IDX) website: <https://www.idx.co.id>
- Annual reports can be found at [www.idnfinancials.com](http://www.idnfinancials.com) and/or [www.annualreports.co.id](http://www.annualreports.co.id), two sites that support information transparency.

The data collected include the financial components necessary for the calculation of the Altman Z-Score, namely: (1) Working capital; (2) Total assets; (3) Retained earnings; (4) EBIT; (5) Market value of equity; (6) Total liabilities; and (7) Sales. Data collection was performed manually by accessing PDF financial reports and extracting quantitative data into Microsoft Excel for calculation and analysis.

*Measurement of variables and operational definitions*

This quantitative study uses a financial ratio approach to measure corporate bankruptcy potential. The Altman Z-Score model, which consists of five independent variables, is the primary variable of this study. The main components of the variables and their definitions are explained in Table 1.

**Table 1.** operational definitions and explanations of the Z-score components

Code	Components of the Relationship	Operational Definition	Formula
X1	Working Capital / Total Assets	Calculate how much working capital supports the company's assets and short-term liquidity.	(Current assets - Current liabilities) / Total assets
X2	Retained Earning / Total Assets	One way to measure financial stability is to calculate accumulated retained earnings compared to assets.	Retained Earning / Total Assets
X3	EBIT / Total Assets	Calculate the operating profitability of a company considering all of the company's assets.	EBIT / Total Aset
X4	Market Value of Equity / Book Value of Total Liabilities	Evaluate the solvency of the business as well as the market perception of its capital strength.	(Number of shares x Market price of shares) / Total liabilities

X5	Sales / Total Assets	assess how effectively an organization can use its assets to generate revenue.	Sales / Total Assets
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## RESEARCH RESULT

This study investigates the ability of the Altman Z-Score model to provide early bankruptcy signals for PT Sri Rejeki Isman Tbk (Sritex) prior to the PKPU filing in 2021. The data used are taken from the company's annual financial statements for the years 2017–2021. The calculation is based on the five main elements of the Altman Z-Score, namely:

**X1** : Working capital / Total assets

**X2** : Retained Earnings / Total assets

**X3** : EBIT / Total Assets

**X4** : Market Value of Equity / Total Liabilities

**X5** : Sales / Total Assets

The results of the Z-Score calculation for each year can be seen here:

**Table 2.** Results of the 2017-2021 Z-score calculation

Year	X1	X2	X3	X4	X5	Z-Score
2017	0,39	0,20	0,11	10.352,19	0,64	6.213,08
2018	0,35	0,23	0,12	8.634,04	0,76	5.182,32
2019	0,46	0,25	0,12	5.501,41	0,76	3.302,90
2020	0,41	0,26	0,10	4.542,73	0,69	2.727,49
2021	-0,80	-0,49	-1,05	1.828,44	0,69	1.092,63

Source: Data processed from PT Sritex financial reports

Based on the results of calculating PT Sritex's Altman Z-Score from 2017 to 2021, as shown in the table above, a gradual decline in the company's financial condition is evident. The table below shows the Z-score trend and its risk classification according to the Altman threshold:  $Z < 1.81$  indicates distress;  $1.81 - 2.99$  indicates gray; and  $Z$  greater than 2.99 indicates safe:

**Tabel 3.** Z-score trend table

<b>Tahun</b>	<b>Z-Score</b>	<b>Kategori</b>
<b>2017</b>	6.213,08	Aman (Sehat)
<b>2018</b>	5.182,32	Aman (Sehat)
<b>2019</b>	3.302,90	Aman (Sehat)
<b>2020</b>	2.727,49	Abu-abu
<b>2021</b>	1.092,63	Distress

Source: processed

## DISCUSSION

Based on the data in the table above, it can be seen that during the 2017–2019 period, Sritex was in exceptional financial condition, with a Z-Score value well above the safe zone threshold (3,302–6,213). This indicates the company's financial strength, operational efficiency, and positive market perception. This high score is dominated by the X4 component (Market Value of Equity / Total Liabilities), which shows the strength of market capital relative to the burden of liabilities.

However, the company's Z-Score value fell sharply to 2,727.49 in 2020, placing it in the poor category. This decline indicates a decline in financial efficiency. With the impact of the COVID-19 pandemic beginning to be felt on export and distribution operations globally, EBIT values and sales-to-asset ratios declined, which were the primary drivers of the score decline.

In 2021, things worsened, with the Z-Score dropping sharply to 1,092.63, putting it in the pressure zone. The EBIT component experienced a negative value (-1.05), combined with a significant decline in the X1 and X2 components (working capital and retained earnings were also negative), indicating significant financial stress and possible bankruptcy. This is consistent with the fact that PT Sritex filed for PKPU in the same year.

Sritex's appearance in the gray zone in 2020 can be considered an early sign of the crisis, which occurred simultaneously with the impact of the COVID-19 pandemic on the global textile industry. The following year, the Z-Score fell below the safe threshold (1.81), placing the company in the financially unhealthy category. This is in line with what happened in the real world when Sritex requested a Suspension of Debt Payment Obligations (PKPU) in mid-2021 due to its non-payment of its external debt. The main factors causing this significant decline in the Z-score are the decrease in the value of EBIT, working capital, and accumulated losses reflected in retained earnings (X2).

The results show that the Altman Z-Score model can effectively alert you to deteriorating financial conditions even one or two years before a crisis occurs.

The decline in the Z-Score since 2020 constitutes an important warning for investors, management, and regulators. Therefore, the Z-Score has been proven to function as an early warning system for monitoring a company's financial health. This has been demonstrated in numerous previous studies.

While the findings of this study confirm the effectiveness of the Altman Z-Score, as stated by Setiawan & Rafiani (2021) and Thohari & Sudjana (2015), several things differentiate the results from previous studies. First, this study investigates a particular case that resulted in a real-life legal event (PKPU). Most previous studies simply compare financial ratios between firms without linking them to actual legal actions. This makes the research results on Indonesia's corporate legal system more relevant to the real world.

Second, this study uses long-term observations of five years rather than the two or three years typical in previous literature. This longer time interval allows researchers to capture the factors causing declining financial performance more completely and gradually. Third, PT Sritex's very high initial Z-score (over 5,000) indicates that a company that appears financially healthy could collapse quickly if it is unable to handle external pressures, such as poor capital structure management or a global crisis.

Fourth, this analysis shows that while the values of EBIT and accumulated retained earnings decline slowly, the very large X4 component (Market Value of Equity/Total Liabilities) in the early years can create the illusion of financial strength. This raises a debate about whether the dominant market-to-market ratio in the Z-Score should be interpreted with caution, especially for companies with high levels of volatility.

Therefore, these findings suggest that the Altman Z-Score model can effectively alert you to deteriorating financial conditions, especially one year before the PKPU filing.

## CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis results and the description of the results, it can be concluded that the Altman Z-Score model can predict the bankruptcy of PT Sri Rejeki Isman Tbk (Sritex) before the company applied for PKPU in 2021. The Z-Score value shows a significant decrease from 6,213.08 to 1,092.63 from 2017 to 2021. The company moved from the safe zone from 2017 to 2019; then moved to the gray zone in 2020; and finally entering the stressed zone in 2021.

The weakening of several key elements of Altman's Z-Score formula, particularly EBIT (X3), working capital (X1), and retained earnings (X2), contributed to the quantitative decline in the Z-Score value. This condition shows that symptoms of financial distress had begun to appear one or two years before the actual crisis, which was marked by the company's filing for a PKPU.

Previous studies have shown that the Altman Z-score can be used as an early warning system for deteriorating financial conditions, especially in labor-

intensive manufacturing industries such as textiles. However, this study combines real-life case studies and long-term observations over five years and finds a direct relationship between Z-scores and corporate legal incidents in Indonesia.

Therefore, it can be concluded that the Altman Z-score is theoretically valid and can be used to predict bankruptcy in Indonesian companies. Company management, auditors, regulators, and investors can use this model to help them reduce financial risks and make strategic decisions.

## ADVANCED RESEARCH

Several limitations of this study should be considered. First, the analysis addresses only one company, PT Sri Rejeki Isman Tbk (Sritex), so the results may not reflect the conditions of other companies in the textile or manufacturing sector as a whole. Second, the method used only uses the Altman Z-Score model without comparing it with other similar legal cases. Furthermore, the study did not analyze what happened after the company filed the PKPU application, focusing only on pre-crisis data.

These limitations allow for several recommendations for future research. First, it is critical to conduct further research to determine whether there is a significant correlation between the Z-score value and legal decisions such as PKPU or bankruptcy in Indonesia. This can be achieved by analyzing other companies that have experienced similar outcomes. Second, further research can analyze how the Z-score value changes after the company faces a crisis, such as PKPU. In this way, this model can be used to predict and monitor the success of corporate financial restructuring.

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