



ANALYSIS OF BANKRUPTCY PREDICTION AT PT BANK MUAMALAT INDONESIA TBK FOR THE PERIOD 2015-2022 USING THE ALTMAN Z-SCORE AND SPRINGATE MODELS

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Abstract

In everyday life, banks are an inseparable aspect of finance. Sharia banks which play a firm role in religion and Islamic law as well as financial institutions through activities such as investment, buying and selling, and others. PT Bank Muamalat Indonesia Tbk was the first bank established in Indonesia and during its development, it sometimes experienced problems such as the threat of capital difficulties, which is something that cannot be avoided for every banking company. Therefore, an indicator is needed that is able to measure how high the effect of bankruptcy is on a bank, whether it has the potential to go bankrupt or not. This research uses descriptive quantitative methods using ratios Z-Score and Springate. The scoring indicators are based on bankruptcy, potential bankruptcy, and health, but Springate only assesses bankruptcy and health. The calculation results show that the overall Z-Score is more healthy, even though there are several years where bankruptcies are declared. Meanwhile, Springate produced overall conditions that stated it was healthy. The results of this research indicate that PT Bank Muamalat Indonesia Tbk needs to improve its strategy and business selection so that in the future it can generate stable profits. With the results of this bankruptcy prediction analysis, it is hoped that it can help investors in making investment decisions, and for further research by further researchers. Apart from that, this research can also contribute to the development of a better financial strategy for PT Bank Muamalat Indonesia Tbk so that it can become a reference for improvements in business strategy in the following year. Thus, it is hoped that this research can provide useful information for stakeholders and the general public in understanding the financial conditions, especially of PT Bank Muamat Indonesia Tbk.

Keywords: Prediction of Bankruptcy; Altman Z-Score Method; Springate Method; PT Bank Muamalat Indonesia Tbk

INTRODUCTION

In daily operations, banks are an integral part of the financial sector. According to Triana Zuhrotun Aulia (2021), a bank is defined as a business entity engaged in gathering funds from the public through deposits and reallocating them back to the community in the form of loans or other savings, with the aim of improving the welfare of the people. In Indonesia, two models of banking are used: Islamic banks and conventional banks. These two systems differ in their principles and concepts. Islamic banks are strongly based on

religious principles, especially in economic activities, through investments, trading, and other operations that adhere to Islamic law. The principles of Islamic banking are guided by Islamic law, including the Quran and Hadith, and are regulated by fatwas from scholars. One key difference is that Islamic banks must ensure that the goods and services traded are halal.

PT Bank Muamalat Indonesia Tbk was established on November 1, 1991 (24th Rabi'ul Tsani 1412 H), making it the first Islamic bank in Indonesia. It has actively contributed to the development of Indonesia's economy and served the large Muslim population in the country. The idea for the establishment of this bank was initiated by the Indonesian government and several Muslim entrepreneurs in the country.

In its development, PT Bank Muamalat Indonesia Tbk has occasionally faced potential issues, such as the risk of capital difficulties, which are inevitable for every banking corporation. Therefore, it is necessary to have indicators that can assess how high the bankruptcy risk of a bank is, determining whether it is likely to go bankrupt or not.

As the first Islamic bank in Indonesia, PT Bank Muamalat Indonesia Tbk faced capital problems in 2018 due to high Non-Performing Financing (NPF). Additionally, the bank experienced a decline in performance due to the burden of credit restructuring and faced high interest rate pressures, leading to a negative impact on its net profit in the subsequent year, 2019.

Table 1
Net Profit of PT Bank Muamalat Indonesia Tbk for the Period 2015–2022 (in million IDR)

Year	Net Profit
2015	74,492,188
2016	80,511,090
2017	26,115,563
2018	46,002,044
2019	16,326,331
2020	10,019,739
2021	8,927,051
2022	26,581,068

Source: <https://www.bankmuamalat.co.id/>

It can be seen that entering 2019, PT Bank Muamalat Indonesia Tbk experienced a decline in net profit, which amounted to 16,326,331, a significant difference from the previous year, 2018, when it reached 46,002,044.

At that time, Bank Muamalat Indonesia was facing a capital deficit and had to lower its capital adequacy ratio below the minimum threshold set by the regulatory authorities. As a result, in late November 2018, Bank Indonesia, as the banking regulator in Indonesia, classified PT Bank Muamalat Tbk as a troubled bank, requiring the bank to resolve its financial and performance issues, leading to a decline in net profit in the following year.

According to Janson Nasrial, Senior Vice President of Royal Investium Sekuritas, PT Bank Muamalat Indonesia Tbk should prioritize retail customers over corporate customers, as the bank's strategic error stemmed from business decisions that led to lending to businesses such as mining and palm oil producers. These efforts should focus on preventing a large capital deficit and avoiding situations where too many problems need to be solved with only financial capital, which could be concerning in the long run.

This situation shows that even Islamic banks, especially PT Bank Muamalat Indonesia Tbk, remain business entities and can be vulnerable when faced with crisis situations.

Therefore, a comprehensive analysis is needed to assess bankruptcy risks at Islamic banks, particularly PT Bank Muamalat Indonesia Tbk, during the period 2015-2022.

Thus, it is necessary to evaluate the financial performance of PT Bank Muamalat Indonesia Tbk for the period 2015-2022, using Altman Z-Score and Springate models. In Islamic banking, several indicators reflect the health level of the bank itself, one of which is derived from evaluating how high the risk of bankruptcy is. Bankruptcy refers to severe financial difficulties experienced by a company, which may lead to the company being unable to continue its operations.

According to Imam Supriadi (2020), bankruptcy usually refers to a company's inability to continue operating and generating revenue due to a financial downturn, where liabilities exceed its assets, resulting in bankruptcy.

Based on the background described above, this research aims to investigate the potential for bankruptcy at PT Bank Muamalat Tbk for the period 2015-2022 using the Altman Z-Score and Springate models during the same period. Below is an explanation of the Altman Z-Score and Springate models

One of the methods for predicting bankruptcy was proposed by Edward I. Altman, a professor from New York University, in 1968, called the Z-Score. According to Irfani (2020), the Z-Score analysis is a method used to predict a company's survival by combining several common financial ratios and assigning different weights to each. This method can thus predict the likelihood of a company going bankrupt.

Irfani (2020) explains that Altman first introduced the Z-Score in 1968 after reviewing 22 financial ratios and identifying 5 key ratios that can be combined to predict whether a company will go bankrupt or not. Altman conducted several studies with companies in different conditions, and as a result, he developed different formulas for use with companies in different sectors. This model emphasizes profitability as the most significant component in predicting bankruptcy.

In 1978, Gordon L.V. Springate developed a financial distress prediction model similar to Altman's method. Springate initially collected 19 financial ratios and, through testing, selected 4 ratios that could distinguish between companies facing financial distress and those not facing it. Springate used a sample of 40 companies in Canada for his study.

METHOD

This research is a descriptive quantitative study, utilizing numbers derived from mathematical or statistical calculations. To gather the necessary data and information for the study, the researcher collects secondary data from financial reports and other relevant information related to PT Bank Muamalat Indonesia Tbk, covering the period 2015-2022, which are available on the official website <https://www.bankmuamalat.co.id>. The research is conducted at PT Bank Muamalat Indonesia Tbk, a Sharia bank operating in Indonesia, with its headquarters located in East Jakarta, on Jalan Gajah Mada No. 10. The study spans from October 2023 to July 2024, progressing in stages from literature review, data collection, data management, to the writing of the proposal. The research variables include financial ratios used in the Altman Z-Score method, such as Working Capital to Total Assets, Retained Earnings to Total Assets, EBIT to Total Assets, Market Value of Equity to Book Value of Total Debt, and Sales to Total Assets. The Springate method includes ratios such as Working Capital to Total Assets, EBIT to Total Assets, Earnings Before Taxes to Current Liabilities, and Sales to Total Assets. The population for the study consists of the financial statements of PT Bank Muamalat Indonesia Tbk, while the sample includes parts of the financial

reports, including the income statement, statement of changes in equity, and balance sheet for the period 2015-2022.

RESULT

Table 2
Z-Score Ratio Values of PT Bank Muamalat Indonesia Tbk. for the Period 2015-2022
In Percentage Ratios

Year	Calculation of Ratio Values	Z-Score	Result
	X1 (%)	X2 (%)	X3 (%)
2015	21.3	679.5	0.292
2016	19.2	169.8	0.153
2017	19.4	698.7	0.0704
2018	32.7	-0.0296	0.12
2019	29.4	-0.0201	0.0385
2020	31.4	-247.5	0.0319
2021	56.8	340.1	0.033
2022	57.3	-238.6	0.159

Average: Healthy

Source: Data Processed, 2024

Based on Table 1, the results from the Z-Score ratios for the period 2015-2022 show that on average, PT Bank Muamalat Indonesia Tbk maintained a healthy financial state, though there were instances of bankruptcy. The bank experienced bankruptcy in 2018, 2019, and 2020, as its Z-Score was below the 1.8 cut-off value. However, there was an increase in 2021, reaching a Z-Score of 1573.1, signaling a healthy state. In 2022, the Z-Score again decreased, leading to bankruptcy. These results suggest that PT Bank Muamalat Indonesia Tbk from 2015-2022 had fluctuations in its financial performance and faced operational challenges that should be addressed to avoid significant financial issues in the future.

Table 2
Springate Ratio Values of PT Bank Muamalat Indonesia Tbk.
for the Period 2015-2022 In Percentage Ratios

Year	Calculation of Ratio Values	Springate	Result
	X1 (%)	X2 (%)	X3 (%)
2015	21.3	0.292	60.93
2016	19.2	0.153	66.44
2017	19.4	0.0704	30.63
2018	32.7	0.12	23.03
2019	29.4	0.0385	29.83
2020	31.4	0.0319	12.48
2021	56.8	0.033	1.16
2022	57.3	0.159	44.73

Average: Healthy

Source: Data Processed, 2024

According to Table 2, the Springate ratio values for the period 2015-2022 consistently show a "healthy" status. As the Springate value is above 0.862, the company is considered healthy in terms of bankruptcy prediction. This suggests that PT Bank Muamalat Indonesia Tbk maintained stable financial health throughout this period, with no signs of financial distress or bankruptcy. Therefore, the analysis indicates that PT Bank Muamalat Indonesia Tbk has a strong potential to face future financial challenges.

DISCUSSION

1. Altman Z-Score

a. Working Capital to Total Assets Ratio (X1)

This ratio experienced significant fluctuations, but the average positive value indicates the bank's ability to effectively manage working capital and generate stable income.

b. Retained Earnings to Total Assets Ratio (X2)

This ratio also showed significant fluctuations, with some years indicating a good ability to generate and retain earnings, while other years showed difficulties in generating profits and retaining earnings.

c. Earnings Before Interest and Taxes to Total Assets Ratio (X3)

This ratio shows fluctuating efficiency levels, with a decline in the ability to generate profits before interest and taxes, which could signal financial difficulties.

d. Sales to Total Assets Ratio (X5)

This ratio showed a continuous decline, but the bank was categorized in the "grey area," not bankrupt but needing an evaluation and business strategy improvement to enhance revenue.

2. Springate

a. Working Capital to Total Assets Ratio (X1)

This ratio showed both increases and decreases, fluctuating but indicating that the bank managed its working capital against current assets well.

b. Earnings Before Interest and Taxes to Total Assets Ratio (X2)

This ratio demonstrated fluctuating efficiency levels, with a decline in the ability to generate profits before interest and taxes, which could indicate financial difficulties. However, the average Springate value shows that the bank is categorized as healthy.

c. Earnings Before Taxes to Current Liabilities Ratio (X3)

This ratio showed varying and fluctuating results, being unstable in recent years. However, the average Springate value shows that the bank is categorized as healthy.

d. Sales to Total Assets Ratio (X4)

This ratio showed a continuous decline, but when calculated using the Springate method, the bank was categorized as healthy. Therefore, the company needs to evaluate and improve its business strategy to increase revenue.

3. Altman Z-Score and Springate in Predicting Bankruptcy

Based on the results of the Altman Z-Score, PT Bank Muamalat Indonesia Tbk. for the period 2015-2022 showed financial performance that was healthy but unstable. The average calculation of the Altman Z-Score indicated a healthy state, but there was potential for bankruptcy threats. Therefore, improvements in business strategy are needed to increase revenue and address fluctuations occurring in certain ratios. On the other hand, the use of the Springate model indicates that PT Bank Muamalat Indonesia Tbk. during this period had stable financial performance and did not experience bankruptcy. The average Springate

calculation results all indicate a healthy state with no bankruptcy. Therefore, for the future, the bank must strengthen its defense and improve its performance further.

CONCLUSION

The financial performance analysis of PT Bank Muamalat Indonesia Tbk for the period 2015-2022 using the Altman Z-Score and Springate models provides mixed results. The Altman Z-Score indicates that while the bank was generally in a healthy financial state, it faced instability in certain years, particularly in 2018, 2019, and 2020, where the Z-Score fell below the cut-off, signaling a risk of bankruptcy. This suggests the need for strategic improvements to stabilize financial performance and mitigate future risks. Meanwhile, the Springate model consistently categorized the bank as financially healthy throughout the period, implying that despite occasional fluctuations, PT Bank Muamalat Indonesia Tbk maintained stable financial conditions and did not face imminent bankruptcy. However, to ensure long-term financial resilience, the bank must enhance its business strategies, improve operational efficiency, and address factors contributing to financial instability

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