



# FINANCIAL RATIOS ANALYSIS USING THE Z-SCORE ALTMAN METHOD IN MEASURING FINANCIAL PERFORMANCE TO PREDICT BANKRUPTCY IN SHARIA GENERAL BANKING (CASE STUDY OF ISLAMIC BANKING COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE IN 2020-2021)

Eka Ayu Anggraini<sup>1\*</sup>, Hartono<sup>2</sup>, Yuliasnita Verlandes<sup>3</sup>

<sup>1,2</sup> Department Of Economics, Universitas Islam Majapahit, Mojokerto, Indonesia

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## ABSTRACT

This study aims to predict the potential level of corporate bankruptcy. In this study, researchers took the object of Islamic banking companies listed on the Indonesian Stock Exchange. The companies are as follows: PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk. This type of research uses descriptive quantitative using secondary data sources. The results of the study show that 2020-2021 shows healthy and stable results because the z-score for 2020-2021 is above 2.6 or Z-score > 2.6. That's why PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk must continue to apply the precautionary principle properly and continue to strive to improve the company's performance in order to avoid potential bankruptcy in the coming year, especially in the era of economic improvement after the Covid-19 pandemic

## 1. INTRODUCTION

Covid 19 is a virus that once attacked Indonesia. This virus first appeared in the animal and seafood market to be precise in the city of Wuhan, China. This virus appeared at the end of 2019. Covid 19 is a virus that attacks human respiration. The symptoms are similar to the flu accompanied by a high fever above 38 degrees, then the patient will experience headaches, coughing, sometimes also accompanied by shortness of breath. result in death for the sufferer. Covid 19 indirectly greatly impacted the Indonesian economic sector. Especially for developing countries, they may suffer less in an industrial crisis due to the spread of the Covid 19 virus, because they have never actively participated in the world's balance. Covid 19 has an impact on various sectors such as the education, banking, tourism, hospitality and transportation sectors. The pandemic caused by covid 19 has paralyzed sectors including the economic sector. The Indonesian Issuers Association (AEI) said that more than 50 companies that listed their shares on the Indonesia Stock Exchange or issuers started experiencing difficulties due to the impact of the Covid-19 pandemic. The ability of cash to support the operations of these issuers was only strong until June 2020. The inability of the company's cash to support the company's operations resulted in bankruptcy for the company.

Based on data from Indonesian Banking Statistics, the bank's credit to deposit ratio or LDR in the first semester of 2021 only reached 81.9%. Whereas in 2019 it recorded 94.84%. This was due to reduced demand for credit and bank credit for the June 2020 period only grew 1.5%, in contrast to 2019, bank credit was able to grow above 10% (katadata.co.id). In addition, due to the economic recession coupled with the Covid-19 pandemic virus, Indonesia's economic development has slumped again, many companies lack business capital due to continuous losses, thus increasing the bad credit report card in the banking world. The bank is an institution that functions as a bridge between parties who have excess funds (surplus) and lack of funds (deficit). distribute funds in the form of loans.

The biggest problem in today's banking companies is the risk of bad credit. Bad credit, in this case what is meant is that customers from banking companies are unable to pay their installments or debts. The

presence of bad credit will have a negative effect on banking companies. If bad credit occurs continuously, banking companies will experience bankruptcy.

Continuous losses of banking companies can lead to corporate bankruptcy. Bankruptcy of the company is a condition where the company experiences insufficient funds to carry out its operations or it can be interpreted that the company is unable to pay off its obligations anymore. This condition can usually be recognized and identified first. Bankruptcy of a company can be identified and analyzed from the company's financial statements in a more thorough, thorough and routine manner.

It is important that management, government, shareholders and other parties carry out an important corporate bankruptcy assessment. This is aimed at obtaining an early warning of bankruptcy (early signs of bankruptcy). The sooner these signs of bankruptcy are detected, the better for government management and shareholders to make improvements.

Analysis of corporate bankruptcy can be done using various methods. One of them is the Z-Score (Altman) method, which is a score determined from a standard count times financial ratios that will indicate the level of probability of company bankruptcy (Supardi, 2003: 73). Altman Z-Score analysis was chosen as a method that can be used in bankruptcy prediction because this model is easy to use and can accurately predict company performance. The advantage of the Altman Model is that it is able to achieve a level of accuracy of up to 95% in predicting the financial performance of a company (Tambunan et al, 2015). Analysis of this method can be done through an analysis of the financial statements.

## 2. METHOD

This research is a quantitative descriptive analysis model that collects, classifies, analyzes and interprets information received from companies to provide an overview of the actual situation. This research was conducted on Islamic banking sector companies listed on the Indonesia Stock Exchange. Time series data (annual data) is data used as research. The information received starts with the 2020-2021 financial year and is taken from the official website of the Indonesia Stock Exchange Gallery. The research variables can be explained as follows: Financial Distress. Measurements using the Altman Z-Score method. Altman Z-Score. Altman Z-Score is a score determined based on standard calculations and financial ratios that indicate the possibility of bankruptcy of a company. Altman's z-score formula for predicting bankruptcy is a multivariate formula for measuring a company's financial health. The z-score calculation formula is:

$$Z\text{-Score} = 6.56 X_1 + 3.26 X_2 + 6.72 X_3 + 1.05 X_4$$

## 3. RESULT AND DISCUSSIONS

Before analyzing financial report data using the Altman z-score method, it is necessary to calculate several financial ratios for PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk as follows:

### Working Capital To Total Assets (X1)

Working Capital To Total Assets or in Indonesian it is called the financial ratio of Working Capital To Total Assets which is calculated by comparing working capital to all assets. Working capital can be obtained from current assets minus current liabilities, so the Working Capital To Total Assets ratio formula can be calculated using the following formula:  $X_1 = (\text{Current assets} - \text{Current liabilities}) : \text{Total Assets}$

Using the above formula on data originating from the financial statements of PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk in 2020-2021, the Working Capital To Total Assets (X1) ratio is obtained as follows:

**Table 1** Ratio of Working Capital To Total Assets (X1) In Thousands

Code	Year	Current assets	Current liabilities	total assets	X1
BANK	2020	664.243.000	651.000	721.397.000	0,919
	2021	2.056.523.000	4.045.000	2.173.162.000	0,944
BRIS	2020	232.485.935.000	63.222.689.000	239.581.524.000	0,706
	2021	257.706.827.000	58.813.627.000	265.289.081.000	0,749
BTPS	2020	15.628.541.000	2.363.550.000	16.435.005.000	0,807
	2021	17.693.508.000	2.251.683.000	18.543.856.000	0,832
PNBS	2020	9.961.655.455	565.618.159	11.302.082.193	0,831
	2021	13.142.098.702	689.515.241	14.426.004.879	0,863

Source: Processed Financial Statements

### Retained Earning to Total Assets (X2)

Retained Earning to Total Assets or in Indonesian is often referred to as the financial ratio of Retained Earnings to Total Assets which is determined by comparing retained earnings to all bank assets. Retained earnings can be found in the consolidated statement of changes in equity. The following is the formula for the ratio of Retained Earning to Total Assets as follows:  $X2 = \text{Retained Earnings} : \text{Total Assets}$

Using the above formula on data originating from the financial statements of PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk in 2020-2021, Retained Earning to Total Assets (X2) is obtained as follows:

**Table 2** Retained Earning to Total Assets (X2) In Thousands

Code	Year	Retained earning	Total Assets	X2
BANK	2020	178.722.000	721.397.000	0,247
	2021	299.997.000	2.173.162.000	0,138
BRIS	2020	6.650.013.000	239.581.524.000	0,027
	2021	9.429.956.000	265.289.081.000	0,035
BTPS	2020	4.155.714.000	16.435.005.000	0,252
	2021	5.346.566.000	18.543.856.000	0,288
PNBS	2020	791.082.591	11.302.082.193	0,069
	2021	1.608.232.649	14.426.004.879	0.111

Source: Processed Financial Statements Earning Before and Taxes to Total Asset (X3)

Earning Before and Taxes to Total Assets or in Indonesian is often referred to as the financial ratio Profit Before Interest and Taxes. This ratio is the ratio determined by comparing earnings before interest and taxes to all bank assets. Earnings before interest and taxes can be found in a company's Profit and Loss Report. The following is the formula for the ratio of Earning Before and Taxes to Total Assets as follows:

$$X3 = \text{EBIT} : \text{Total Assets}$$

Using the above formula on data originating from the financial statements of PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk in 2020-2021, the Earning Before and Taxes to Total Assets (X3) is obtained as follows:

**Table 3.** Earnings Before and Taxes to Total Assets (X3) in Thousands

Code	Year	EBIT	Total Assets	X3
BANK	2020	44.868.000	721.397.000	0,062
	2021	121.275.000	2.173.162.000	0,055
BRIS	2020	3.005.197.000	239.581.524.000	0,012
	2021	3.960.524.000	265.289.081.000	0,014
BTPS	2020	1.124.296.000	16.435.005.000	0,068
	2021	1.877.473.000	18.543.856.000	0,101
PNBS	2020	6.569.558	11.302.082.193	0,058
	2021	818.324.428	14.426.004.879	0,056

Source: Processed Financial Statements

Total Equity to Total Debt Ratio (X4)

The Total Equity to Total Debt Ratio or in Indonesian is often referred to as the financial ratio of Equity to Debt which is determined by comparing Total Equity to all bank debt. The formula for the ratio of Total Equity to Total Debt Ratio is as follows:  $X4 = \text{Book Value of Equity} : \text{Book Value of Debt}$  Using the above formula on data originating from the financial statements of PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk in 2020-2021, the Total Equity to Total Debt Ratio (X4) is obtained as follows:

**Table 4.** Total Equity to Total Debt Ratio (X4) in thousands

Code	Year	Book Value of Equity	Book Value of Total Debt	X4
BANK	2020	641.274.000	39.961.000	16,047
	2021	1.046.327.000	88.651.000	11.802
BRIS	2020	21.743.145.000	66.040.361.000	0,329
	2021	25.013.934.000	61.886.476.000	0,404
BTPS	2020	5.878.749.000	2.632.890.000	2.232
	2021	7.094.900.000	2.543.053.000	2,789
PNBS	2020	3.115.653.432	600.931.510	5.184
	2021	2.301.944.837	727.197.234	3,165

Source: Processed Financial Statements

After getting the X value based on the results of the table calculations above, the next step is to enter it into the Altman Z-Score formula as follows:

$$Z\text{-Score} = 6.56 X1 + 3.26 X2 + 6.72 X3 + 1.05 X4$$

**Table 5.** Calculation of the Altman Z-Score Formula

Code	Year	X1(6,56)	X2(3,26)	X3(6,72)	X4(1,05)
BANK	2020	6,028	0,805	0,416	16.849
	2021	6,192	0,449	0.369	12,392
BRIS	2020	4,631	0,088	0,080	0,345
	2021	4,913	0,114	0.094	0,424
BTPS	2020	5,293	0,821	0,456	2.343
	2021	5,457	0.938	0,678	2,928
PNBS	2020	5,451	0,224	0,389	5,443
	2021	5,661	0,361	0,376	3,323

Source: Processed Financial Statements

After performing calculations like the table above, the next step is to add up the scores and interpret the data according to the Modified Cutt-off Altman Z-score.

**Table 6.** Prediction Results

Code	Year	Z-Score value	Cut-Off Value
BANK	2020	24,143	Not Bankrupt / Safe
	2021	19,402	Not Bankrupt / Safe
BRIS	2020	5,144	Not Bankrupt / Safe
	2021	5,545	Not Bankrupt / Safe
BTPS	2020	8,913	Not Bankrupt / Safe
	2021	10,001	Not Bankrupt / Safe
PNBS	2020	11,507	Not Bankrupt / Safe
	2021	9,721	Not Bankrupt / Safe

Source: Processed Financial Statements

Based on the table above, it can be seen from the 4 samples as follows:

1. PT. Bank Aladin Syariah Tbk in 2020 and 2021 has a Z-Score of 24,143 and 19,402. So it can be said that in 2020 and 2021 the company will not be bankrupt/safe, even though there was a pandemic that year.
2. PT. Bank Syariah Indonesia Tbk in 2020 and 2021 has Z-Score values of 5.144 and 5.545. So it can be said that in 2020 and 2021 the company will not be bankrupt/safe, even though there was a pandemic that year.
3. PT. Bank BTPN Syariah Tbk in 2020 and 2021 has a Z-Score of 8,913 and 10,001. So it can be said that in 2020 and 2021 the company will not be bankrupt/safe, even though there was a pandemic that year.

4. PT. Bank Panin Dubai Syariah Tbk in 2020 and 2021 has Z-Score values of 11,507 and 9,721. So it can be said that in 2020 and 2021 the company will not be bankrupt/safe, even though there was a pandemic that year.

#### 4. CONCLUSION

Based on the results of research on bankruptcy analysis at PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk for the 2020-2021 period using the Altman Z-score model is appropriate to use to predict bankruptcy in banking companies going public in Indonesia. This shows that the model developed by Altman regarding the Z-Score can accommodate the climate and economic conditions in Indonesia as an early warning system for potential bankruptcy, so that corrective steps can be taken to prevent this. The Altman Z-Score model can predict the state of the banking company at PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk for the 2020-2021 period which is listed on the Indonesian Stock Exchange. In 2020-2021 it shows healthy and stable results because the z-score value from 2020-2021 is above 2.6 or Z value > 2.6. That's why PT. Bank Aladin Syariah Tbk, PT. Bank Syariah Indonesia Tbk, PT. Bank BTPN Syariah Tbk and PT. Bank Panin Dubai Syariah Tbk must continue to apply the precautionary principle properly and continue to strive to improve the company's performance in order to avoid potential bankruptcy for the coming year, especially in the era of economic improvement after the Covid-19 pandemic

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