Springate Score Analysis in Predicting Financial Distress in Islamic Banking Companies Listed on The Indonesia Stock Exchange

Sri Bulan[*]

Institut Agama Islam Negeri Parepare, sribulan@gmail.com

Rismala

Institut Agama Islam Negeri Parepare, malamuflihah@iainpare.ac.id

Abdul Hamid

Institut Agama Islam Negeri Parepare, abdulhamid@iainpare.ac.id

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[*]Corresponding author

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ABSTRACT

Springate score analysis is an analysis that can help companies to anticipate the possibility of a company going bankrupt caused by a company's financial problems. This study aims to find out and analyze the potential for financial distress in Islamic banking companies listed on the Indoensai Stock Exchange (IDX) for the 2019-2023 period using a springate score. The data source used in this study comes from financial statements in the form of the company's balance sheet and profit and loss obtained from the official website of the Indonesia Stock Exchange, namely www.idx.co.id.

The type of research used is descriptive research with a quantitative approach. This study uses a data analysis technique in the form of a springate score calculation which combines four financial ratios, namely working capital to total assets, earning before interest and taxed to total assets, earning before tax to current liabilities and sales to total assets. The assessment category of companies that are in the healthy zone (non-financial distress > 1.062), vulnerable zone (grey zone > 0.862 S < 1.062) and experiencing bankruptcy risk (financial distress < 0.862).

The results of the research obtained are that Bank Tabungan Pensiunan Nasional Syariah Tbk is in a healthy condition or non-financial distress from 2019-2023. PT. Bank Aladin Syariah Tbk is in the financial distress category in 2020-2023. PT. Bank Syariah Indonesia was in a state of financial distress in 2019-2020. And PT. Bank Panin Dubai Syariah is in a state of financial distress in 2021 and 2023.

Keywords: Springate Score, Islamic Banking, Financial Distress

INTRODUCTION

The development of banking in Indonesia continues to grow rapidly in a relatively short time, its development has been able to show significant progress. Banking is one of the companies engaged in financial services. Banking is one of the forms of financial institutions that has the largest role in the economic sector and its existence is vital for the development, progress and decline of a country.[1]

Until now, Islamic banking has a very rapid development, where the expansion of Islamic products and instruments that can support people's financial and business activities, and will reduce speculative transactions so as to support the stability of the financial system as a whole which can make a significant contribution to the achievement of medium-term price stability. Islamic banking also stands according to the demand of the community, which Indonesia is a country with a majority Muslim population.

However, the economic conditions in Indonesia that are still uncertain result in a high risk of a company experiencing financial difficulties or even bankruptcy. Errors in predicting the continuity of a company's operations in the future can have fatal consequences, namely the loss of income or investment that has been invested in a company.

Islamic banks that have gone public such as Bank Syariah Indonesia, Bank Aladin Syariah, Sharia Pension Savings Bank and also Bank Panin Dubai Syariah need to continue to pay attention to their operations so that they do not experience financial distress or can even lead to bankruptcy. Because for investors who want to and who have made investments, of course, they will continue to monitor the financial condition of the bank. This is done so that the investment made does not suffer losses. For this reason, Islamic banks need to continue to regulate financial conditions in their operations to avoid bankruptcy.[2] Various weaknesses that exist in the banking industry include weak bank management, excessive credit concentration, fraud, limited and lack of transparency of information on banks' financial conditions and poor operational conditions.[3]

Based on data obtained from the Indonesia Stock Exchange website from Islamic banking that was researched, there were several companies that experienced losses. This can be seen in the following table:

Table 1 Profit and Loss of Islamic Banking Companies Listed on the Indonesia Stock Exchange (in millions of rupiah**)**

Yes	Bank Name	Year	Profit	Lose out
1.	PT. Bank Syariah Indonesia Tbk	2019	IDR 74,016	
		2020	IDR 2,187,649	
		2021	IDR 3,028,205	
		2022	Rp. 4,260,182	
		2023	IDR 5,703,743	
2	PT. National Retirement Savings Bank Syariah Tbk	2019	IDR 1,399,634	
		2020	IDR 854,614	
		2021	IDR 1,465,005	
		2022	IDR 1,779,580	
		2023	IDR 1,080,588	
3.	PT. Bank Panin Dubai Syariah Tbk	2019	IDR 13.237.011	
		2020	IDR 128,116	
		2021		IDR 818.112.377

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[1] Akhmad Mujahidin, *Sharia Banking Law*, Cet.1 (Jakarta: PT. Raja Grafindo Persada, 2016), p.33.

[2] Fahrur Ulum, *Islamic Banking in Indonesia* (Surabaya: Putra Media Nusantara, 2011), p.49.

[3] Rahmat, "Analysis of Factors Affecting Financial Distress," *Journal of Economics and Business* 2, no. 2 (2015).

		2022	IDR 250,531,592	
		2023	IDR 244,690,465	
4.	PT. Bank Aladin Syariah Tbk	2019	IDR 77,304	
		2020	IDR 44,868	
		2021		IDR 121,275
		2022		IDR 121,275
		2023		IDR 226,738

Source : Indonesia Stock Exchange (www.idx.co.id)

Performance improvement must be maintained by the company so that the company's condition remains stable and does not approach bankruptcy. The initial symptoms of bankruptcy are usually characterized by financial difficulties for each company, if these financial difficulties are not directly handled by the company, then bankruptcy will occur in the company. These failures can be in the form of unpaid company debts at maturity, non-payment of dividends, and swelling of the amount of debt. Predictions about companies that experience financial difficulties and then go bankrupt are one of the important analyses for interested parties. Therefore, the importance of a bankruptcy prediction model for a company is something that is urgently needed by various parties such as creditors, investors, regulatory authorities, auditors, and management.

The study of financial distress or liquidation due to financial distress can be proven as has been done by previous researchers using financial ratios, namely the Springate (S-Score) model. One of the analysis methods developed to analyze financial distress is the Springate model. The Springate model is a model for analyzing bankruptcy introduced by Gordon L.V. Springate in 1987. This model is a development model of the Altman model developed with Multiple Discriminant Analysis (MDA). This model uses four financial ratios to determine the criteria for companies to fall into the category of being healthy or having the potential to experience bankruptcy. The four financial ratios used to calculate the Springate method are the ratio of working capital to total assets, earnings before interest and taxes to total assets, profit before tax to current liabilities, and sales to total assets.[4]

This research is important to be carried out, considering the high interest of the public, especially Muslims, to invest in Islamic banking both in the form of savings, deposits and investing in the form of purchasing shares of Islamic banks on the Indonesia Stock Exchange. Information on financial distress predictions in Islamic banking companies is important information that can be used as a consideration for the public to be wiser in choosing Islamic banking companies as investment destinations.

Based on this study, the researcher is interested in researching how to analyze the springate score method in predicting financial distress in Islamic banking companies listed on the Indonesia Stock Exchange (IDX)?

METHOD

This type of research is a type of quantitative descriptive research. The population in this study is Islamic banking listed on the Indonesian Stock Exchange during the 2019-2023 period, which totals four companies. In this study, the sampling technique carried out by the researcher is a non-probability sampling technique. The non-probability sampling technique used in this study uses saturated sampling techniques. Saturated sample is a sample determination technique when all members of the population are used as research samples.[5]

Table 2 List of Research Samples

Yes	Code	Name of Sharia Bank
1.	BANK	PT. Bank Aladin Syariah Tbk

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[4] Peter and Yoseph, "Financial Statement Ratio Analysis and Bankruptcy Analysis with the *Z-Score* Altman *Springate* and Zmijewski at PT Indofood Makmur Tbk for the period 2005-2009," *Scientific Journal of Accounting* 4, no. 2 (2011): 1–20.

[5] Suggestion, *Quantitative Research Methods, Qualitative, R&D* (Bandung: Alfabeta, 2004), p.97.

2.	BRIS	PT. Bank Syariah Indonesia Tbk
3.	BTPS	PT. Sharia National Retirement Savings Bank
4.	PNBS	PT. Bank Panin Dubai Syariah

Source : Indonesia Stock Exchange (www.idx.co.id)

The data collection technique uses documentation methods and literature studies. Meanwhile, the data is processed using the springate score formula. The assessment category of companies that are in the healthy zone (non-financial distress > 1.062), vulnerable zone (grey zone> 0.862 S < 1.062) and experiencing bankruptcy risk (financial distress < 0.862). The models that Springate produces are as follows:

$$S = 1.03(A) + 3.07(B) + 0.66(C) + 0.4(D)$$

Information:

A: Working capital to total assets ratio.

B: Ratio of operating profit or operating profit to total assets (earning before interest and tax to total assets).

C: Ratio of earnings before tax and zakat to current debt (earning before tax to current liabilities).

D: Ratio of sales to total assets.

RESULTS

1. S-Score (Z) Calculation Results

Table 3 S-Score Value of PT. National Pension Savings Bank Syariah Tbk

Year	1.03 (A)	3.07 (B)	0.66 (C)	0.4 (D)	S-Score
2019	0,865	0,378	0,620	0,116	1,979
2020	0,861	0,212	0,364	0,098	1,535
2021	0,992	0,313	0,573	0,040	1,848
2022	0,865	0,331	0,649	0,102	1,947
2023	0,875	0,120	0,392	0,106	1,493

Data source: Data processed

Based on table 3 above, Bank Tabungan Pensiunan Nasional Syariah Tbk obtained an S-Score in 2019 of 1,979, 2020 decreased by 1,535, increased in 2021 by 1,848, then increased in 2022 by 1,947 and decreased in 2023 by 1,493.

Table 4 S-Score Value of PT. Bank Aladin Syariah Tbk

Year	1.03 (A)	3.07 (B)	0.66 (C)	0.4 (D)	S-Score
2019	0,881	0,037	0,834	0,067	1,819
2020	0,020	0,181	0,046	0,044	0,291
2021	0,783	-0,175	-0,198	0,017	0,427
2022	0,799	-0,172	-0,485	0,018	0,16
2023	0,870	-0,107	-0,227	0,048	0,584

Data source: Data processed

Based on table 4 above, Bank Aladin Syariah Tbk has a fluctuating S-Score value from 2019 to 2020. The highest S-Score score was in 2019 at 1.819 while the lowest score in 2022 was 0.16.

Table 5 S-Score Value of PT. Bank Syariah Indonesia Tbk

Year	1.03 (A)	3.07 (B)	0.66 (C)	0.4 (D)	S-Score
2019	0,748	0,009	0,008	0,031	0,798
2020	0,727	0,042	0,032	0,028	0,829
2021	0,770	0,050	0,046	0,027	0,893
2022	0,755	0,059	0,053	0,027	0,894
2023	0746	0,068	0,060	0,025	0,899

Data source: Data processed

Based on table 5 above, Bank Syariah Indonesia Tbk obtained an S-Score value in 2019 of 0.798, increasing in 2020 to 0.829, then in 2021 increasing by 0.893, in 2022, increasing to 0.894, and increasing in 2023 by 0.899.

Table 6 S-Score Value of PT. Bank Panin Dubai Syariah Tbk

Year	1.03 (A)	3.07 (B)	0.66 (C)	0.4 (D)	S-Score
2019	0,871	0,006	0,027	0,023	0,873
2020	0,855	0,000	0,008	0,024	0,887
2021	0,887	-0,175	-0,776	0,020	-0,039
2022	0,828	0,052	0,010	0,025	0,915
2023	0,755	0,043	0,001	0,026	0,825

Data source: Data processed

Based on table 6 of the S-Score, Bank Panin Dubai Syariah Tbk has an S-Score value in 2019 of 0.873, in 2020 it increased to 0.887, then in 2021 it produced a minus value of 0.039, then in 2022 it produced a value of 0.915 and decreased in 2023 to 0.825.

2. **Financial Distress Prediction**

The following is a table of the predicted results of financial distress from Islamic banking during 2019 to 2023. The predicted value of financial distress is as follows:

   a. An S-Score of < 0.862 indicates that the company is in an unhealthy financial condition or experiencing financial distress.
   b. An S-Score of 0.862 < S < 1.062 indicates that the company has few financial problems even though it is not serious or in a grey zone or vulnerable state.
   c. The S-Score > 1.062 indicates that the company is in a healthy financial condition and has no financial problems or is not experiencing financial distress.

Table 7 Financial Distress Prediction Results

Company	Year	S-Score	Classification
PT. National Syariah Retirement Savings Bank Tbk	2019	1,979	Non Financial Distress (Healthy)
	2020	1,535	Non Financial Distress (Healthy)
	2021	1,848	Non Financial Distress (Healthy)
	2022	1,947	Non Financial Distress (Healthy)
	2023	1,493	Non Financial Distress (Healthy)

	Year	Value	Classification
PT. Bank Aladin Syariah Tbk	2019	1,819	Non Financial Distress (Healthy)
	2020	0,291	Financial Distress (Bankruptcy Scandal)
	2021	0,427	Financial Distress (Risk of Bankruptcy)
	2022	0,16	Financial Distress (Risk of Bankruptcy)
	2023	0,584	Financial Distress (Risk of Bankruptcy)
PT. Bank Syariah Indonesia Tbk	2019	0,798	Financial Distress (Risk of Bankruptcy)
	2020	0,829	Financial Distress (Risk of Bankruptcy)
	2021	0,893	Grey Zone (Raw)
	2022	0,894	Grey Zone (Raw)
	2023	0,899	Grey Zone (Raw)
PT. Bank Panin Dubai Syariah Tbk	2019	0,873	Grey Zone (Raw)
	2020	0,887	Grey Zone (Raw)
	2021	-0,039	Financial Distress (Risk of Bankruptcy)
	2022	0,915	Grey Zone (Raw)
	2023	0,825	Financial Distress (Risk of Bankruptcy)

Data source: Data processed

Each company has obtained the final results of the S-Score calculation each year according to table 7. Based on the S-Score value that has been obtained by each company, financial distress prediction can be done by classifying each company according to the financial distress classification.

DISCUSSION

A healthy bank is a bank that can carry out its functions well, that can maintain and maintain public trust, can carry out intermediation functions, can help smooth payments and can be used by the government in implementing various monetary policies. By carrying out these functions, banks can provide good services to the community and benefit the Indonesian economy.

All companies certainly have various risks in carrying out their operational activities that can cause financial distress, these risks if not handled properly will result in financial distress in the company. Sharia banking as an institution that plays an important role in the Indonesian economy must certainly pay close attention to its performance. Therefore, an assessment of potential financial distress is very necessary for various parties concerned with banks. In addition, for external parties to the company, this potential bankruptcy can be used as a basis for making decisions to invest.

Therefore, it is very necessary to analyze the symptoms of bankruptcy so that the company can anticipate bankruptcy in the future. One form of bankruptcy analysis is by analyzing ratios to assess a situation in the past, present and future. There are many causes of a company going bankrupt and because of the many causes, a method to analyze the symptoms of a company's bankruptcy has emerged which is expected to be used to anticipate the financial condition of a company before the

company reaches the point of bankruptcy.[6] Analysis of the bankruptcy of a company is very important for various parties. This is because the bankruptcy of a company not only harms the company, but also harms other parties related to the company. Therefore, a potential bankruptcy analysis can be performed to obtain early warnings of bankruptcy (early signs of bankruptcy). The earlier the signs of bankruptcy are known, the better it will be for the management. Because the management can immediately make improvements so that the company does not go bankrupt.[7]

The first step to find out the symptoms of financial distress is to conduct a calculation analysis with the springate methodology by collecting financial statement data on a company that has been listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023 in accordance with the specified criteria.

The next step is to group and calculate each ratio in the springate method. The ratios in the springate score method are:

1. Working capital to total assets ratio (A)

This ratio shows how the company generates net working capital from all assets owned by the company. The value of Working Capital to Total Assets when increasing describes the increase in working capital obtained by the company compared to total assets.

2. Ratio of operating profit or operating profit (NRE) to total assets (B)

This ratio shows the company's ability to generate company profits from its assets before making tax and zakat payments. In measurement B, there is a ratio that measures the company's ability to generate profits.

3. Ratio of profit before tax and zakat to current debt (C)

A ratio that measures a company's ability to pay off its short-term debts. The ratio of profit before tax to current debt, so that management can find out how much profit has been deducted with tax burden and zakat can cover existing current debt.

4. Ratio of sales to total assets (D)

This ratio measures how efficiently the asset has been utilized to earn income. The higher the total sales to the total assets means the more efficient the use of the company's overall assets in generating sales volume.

The third step is to conduct a predictive analysis of the condition of financial distress by summing and calculating the results of financial statements from each variable in the springate method. The last step, namely the calculation of springates, is classified based on the value of the springate. The results of the analysis of the calculation of the springate score method in predicting financial distress in Islamic banking companies listed on the Indonesia Stock Exchange (IDX) in 2019-2023 are as follows:

Table 8 Results of Analysis of S-Score Calculation in Islamic Banking Companies Listed on the Indonesia Stock Exchange

Yes	Company Name	S-Score				
		2019	**2020**	**2021**	**2022**	**2023**
1.	PT. Retirement Savings Bank National Syariah Tbk	1,979	1,535	1,848	1,947	1,493
2.	PT. Bank Aladin Syariah Tbk	1,819	0,291	0,427	0,16	0,584
3.	PT. Bank Syariah Indonesia Tbk	0,798	0,829	0,893	0,894	0,899
4.	PT. Bank Panin Dubai Syariah Tbk	0,873	0,887	-0,039	0,915	0,825

Data source: Data processed

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[6] Enny W. P. Sari, "The Use of Zmijewski, Springate, Altman Z-Score and Grover Models in Predicting Bankruptcy in Transportation Companies Listed on the IDX," 2013.

[7] Mamduh M Hanafi & Abdul Halim, *Financial Statement Analysis* (Yogyakarta: UPP STIM YKPN, 2007).

Information:

Healthy

Prone

Risk of Bankruptcy

CONCLUSION

Based on the results of the research and discussion that has been described earlier, it can be concluded that the results of the calculation process using the springate method can be found that:

1. PT. Bank Tabungan Pensiunan Nasional Syariah Tbk from the period 2019 to 2023 has a healthy financial condition or non-financial distress based on the results of the springate score calculation.
2. PT. Bank Aladin Syariah Tbk based on the calculation of the springate score in 2019 is in a healthy financial condition or non-financial distress, but from 2020 to 2023 the company is at risk of bankruptcy or is in a state of financial distress.
3. PT. Bank Syariah Indonesia Tbk based on the calculation of the springate score in 2019 and 2020 experienced the risk of bankruptcy or was in a state of financial distress, then in 2021 to 2023 the company experienced an improvement in financial health even though its financial condition was still in a vulnerable condition or grey zone.
4. PT. Bank Panin Dubai Syariah Tbk based on the calculation of the springate score in 2019 to 2020 is in a financial condition prone to bankruptcy or grey zone, but in 2021 it experienced financial distress or bankruptcy risk then in 2022 it gradually improved but the company is still in the vulnerable category or grey zone And in 2023 the company is again in a state of financial distress or at risk of bankruptcy.

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