The Influence of NPF, ROA, CAR and FDR On The Financial Distress Of Sharia Bank in The Indonesia Period 2017-2022

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Abstract: This study aims to see how Non-Performing Financing (NPF), Return on Assets (ROA), Capital Adequacy Ratio (CAR), and Financing to Deposit Ratio (FDR), affect Financial Distress with the Altman Z-Score method approach. The sample of this study used a purposive sampling method and obtained 10 Islamic commercial banks in Indonesia for analysis. The data in this study comes from the annual reports of Islamic Commercial Banks. This study will be analyzed with a panel data regression model. The results of this study indicate that the Capital Adequacy Ratio (CAR) has a significant positive effect on financial distress, while NPF, ROA, and FDR have no significant effect on financial distress during the 2017-2022 period.

Keywords: Financial distress; NPF; ROA; CAR; FDR.

A. Introduction

The Covid-19 pandemic that has passed has more or less affected the condition of the Indonesian economy. The central bank, in this case, is Bank Indonesia, which has the authority to regulate and formulate all monetary policies in Indonesia and to take steps in response to pressure from the financial market and the economy due to the Covid-19 pandemic. The steps taken by Bank Indonesia to respond to this include implementing large-scale interest rate reductions. Bank Indonesia also reduced the GWM or Minimum Statutory Reserves and implemented this policy. This policy includes the purchase of SBN or state securities as well as the private sector. In addition, Bank Indonesia also ensures the availability of liquidity in the banking system to facilitate the loan process.¹

Sharia-based bank financial institutions are defined as intermediary institutions whose role is to collect public funds (funding). Apart from that, it also acts as a distributor of funds to the community or is called financing/lending. This means that the community is an important aspect in supporting the occurrence of national economic recovery. The government as a regulator provides leeway in managing permits to

establish Islamic banks. This is done to support the collection and distribution of funds to the community.

The mushrooming establishment of Islamic financial institutions including Islamic banks in Indonesia has resulted in increasingly intense competition between Islamic banks in attracting customers. Various kinds of innovative and solutive efforts have been made to attract customers to be tempted to use the services offered. One way is for the bank as an intermediary institution to provide evidence of performance. This is done in order to convince customers that in the future they will feel comfortable investing and providing loans. Published performance evidence is the periodic financial reports of the bank. The purpose of having published financial reports is to see the level of soundness of the bank concerned. That way, customers as consumers feel safe, comfortable and calm in transactions. Not only that, the publication of financial reports has another important purpose, such as transferring company financial information to all related parties, often referred to as stakeholders.

Indonesia is currently in the process of recovering from the Covid 19 pandemic which requires not only encouragement from the government to drive the economy but also the community to revive savings and buying and selling activities. In this case, when people want to do financing or just funding at the bank. Society (customers) need to know the financial condition of the bank to avoid financial distress. The issue of financial distress is a risk that arises in banking and must be recovered to restore public (customer) interest and trust.²

Financial distress is a condition where there are financial problems including liquidity problems. Financial problems that occur also fall into the category of mild to severe, and in certain cases also include bankruptcy statements. Where the bankruptcy statement is a condition that shows acute financial problems. In recent years, operational losses arising from the internal financial performance of a company are the main cause of the company's financial difficulties. In the past few years, operational losses that have occurred as a result of poor internal financial performance of a company have become an indication of the main cause of a company's financial difficulties. Meanwhile, external factors that cause financial distress are macroeconomic factors that clearly come from outside the scope of the company. This can happen either directly or indirectly.³

In this day and age there is increasingly stringent banking business growth so that this has spurred sharia banking to always improve performance. Apart from that, considering the fact that Indonesia is experiencing a post-pandemic recovery. Where in a pandemic condition, all activities are limited but banks are still required to maintain customer trust, compete and attract more investors and the public. In carrying out its duties as an intermediary institution that distributes funds, the smooth operation of a bank requires good and healthy bank performance.⁴ Thus, optimizing steps in keeping the bank in good health so as to avoid the possibility of financial distress is crucial.

² Irham Fahmi, Analisis Kinerja Keuangan: Panduan Bagi Akademisi, Manajer, Dan Investor Untuk Menilai Dan Menganalisis Bisnis Dari Aspek Keuangan (Bandung: Alfabeta, 2014), h. 27
⁴ Samryn, Pengantar Akuntansi: Mudah Membuat Jurnal Dengan Pendekatan Siklus Transaksi (Jakarta: Rajawali Pers, 2015), h. 24
Capability in making a profit/profit on the results of a bank’s activities can be assessed as an indicator to indicate whether the financial performance is good or not. According to Kasmir (2014) banking institutions should look at various aspects that are considered to affect profitability including solvency, asset quality, liquidity, and efficiency. Assessment of the financial statements is not done carelessly, but must use the right ratio. Ratios in evaluating financial reports that can be used include asset quality ratios, bank liquidity ratios, solvency ratios, and efficiency ratios.

The Financial Services Authority (OJK) is a government agency administering an integrated regulatory and supervisory system for all activities related to the financial services industry in Indonesia. OJK issued regulations regarding the assessment of the soundness level of banks, namely in OJK Regulation No.8/POJK.03/2014 concerning Assessment of the Soundness Level of Islamic Commercial Banks and Sharia Business Units. Sharia Banks as intermediaries and financial service facilitators whose activities are based on Islamic ethics and values, especially to avoid interest (usury), no speculative activities on unproductive things such as gambling (maysir), do not have unclear and doubtful goods (gharar), principles of justice and financing for halal business activities.

Based on what has been described above, this study aims to review the predictors that can be used for what financial measures are and how they affect the prediction of financial distress. This research has been previously conducted by Sofiasani and Gautama (2016), Effendi and Haryanto (2016), Sucipto and Muazaroh (2017), Yurivin and Mawardi (2018), Susanti et al. (2020), and Susdaryo et al (2021) show that there are differences in research results which indicate disagreements, where this will continue to raise questions. Therefore, there is a need for further research. Furthermore, the reason underlying further research is because previous research still has not described in detail because it only includes the results of the Z-Score test and does not provide a detailed description. This research period uses the time range 2017 to 2022.

### B. Research Methods

This research is comparative quantitative research that measures financial distress in Islamic banks in Indonesia for the period 2017–2022. In this study, the population studied is Islamic banks in Indonesia in 2017-2022 to be used as a benchmark that determines whether Islamic banks are experiencing financial distress or not. The time for carrying out this research is 2023 but the data that is processed is only until 2022 because the data is available only until 2022.

The determination of the research sample used a purposive sampling technique, namely the technique of taking research samples with consideration and adjustment of separate criteria in order to align research objectives. The data used is quantitative data, namely data measured by a numerical scale (numbers). This study applies the use of secondary data types. Secondary data is data that has been published by companies to the public in the form of bank financial reports.

### Table 1. Sample Criteria Overview

<table>
<thead>
<tr>
<th>No</th>
<th>Bank Criteria</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sharia Bank registered with OJK for the period 2017 - 2022</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>Sharia Bank that provides complete and published Financial</td>
<td>10</td>
</tr>
</tbody>
</table>

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Statements from 2017 - 2022

<table>
<thead>
<tr>
<th>No</th>
<th>Bank Codes</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bank Muamalat</td>
<td>Bank Muamalat Indonesia Tbk</td>
</tr>
<tr>
<td>2</td>
<td>Bank NTB Syariah</td>
<td>Bank NTB Syariah Tbk</td>
</tr>
<tr>
<td>3</td>
<td>Bank Mega Syariah</td>
<td>Bank Mega Tbk</td>
</tr>
<tr>
<td>4</td>
<td>Panin Bank Syariah</td>
<td>Panin Dubai Syariah Bank</td>
</tr>
<tr>
<td>5</td>
<td>Bank BJB Syariah</td>
<td>Bank Jabar Banten Syariah Tbk</td>
</tr>
<tr>
<td>6</td>
<td>Bank Victoria Syariah</td>
<td>Bank Victoria Syariah Tbk</td>
</tr>
<tr>
<td>7</td>
<td>Bank Bukopin Syariah</td>
<td>Bank Bukopin Syariah Tbk</td>
</tr>
<tr>
<td>8</td>
<td>Bank BTPN Syariah</td>
<td>Bank Tabungan Pensiun Nasional Syariah Tbk</td>
</tr>
<tr>
<td>9</td>
<td>Bank BCA Syariah</td>
<td>Bank BCA Syariah Tbk</td>
</tr>
<tr>
<td>10</td>
<td>Bank Aceh Syariah</td>
<td>Bank Aceh Syariah Tbk</td>
</tr>
</tbody>
</table>

**Source:** Author’s processed data, 2023

Based on the research sample criteria, the research samples that will be used by researchers are listed in the table below:

**Table 2. Research Sampel**

Secondary data is sourced from the financial reports of Islamic banks in Indonesia which have been published on the official websites of each bank for the period 2017-2022. The data collected and processed for Islamic banks in Indonesia are focused on Islamic banks registered with the Financial Services Authority (OJK) and has had financial reports since the 2017-2022 period.

In quantitative research, variables are divided into 2 categories, namely independent variables and dependent variables. Independent variables are variables that one or all of them influence both positively and negatively on the dependent variable. The use of variables in this study is described as follows:

1. Dependent variable in this study is financial distress in Islamic banks in Indonesia for the period 2017 – 2022.
2. Independent variables in this study are NPF, FDR, ROA, and CAR which are taken from the company's published financial reports for the period 2017 - 2022.

Altman Z-Score is the method used in measuring financial distress in this study. The Altman Z-Score method is a score obtained by calculating the standard times the financial indicators that show the level of financial distress of the company. The Altman Z-Score method used is a modified Altman model:

\[ Z'' = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4 \]

\[ X1 = \text{Working Capital/Total Assets (Modal Kerja/Total Aset)} \]
\[ X2 = \text{Retained Earnings/Total Assets (Laba ditahan/Total Aset)} \]
\[ X3 = \text{Earning Before Interest and Taxes/Total Assets (EBIT/Total Aset)} \]
\[ X4 = \text{Book Value of Equity/Total Liabilities (Nilai Total Ekuitas/Total Hutang)} \]
Based on criteria:
According to the Z-score criteria > 2.60, you are in the "Safe" Zones, means there is no financial problems
Z-score 1.1 < Z < 2.60 is in the "Grey" Zones which means it is in a doubtful condition
Z-score < 1.1 is in the "Distress" Zones meaning in an unhealthy condition and has the potential to experience bankruptcy

From the above criteria it can be seen that if the condition of Islamic Banks in Indonesia is in "Safe Zones" it means the Bank is in a safe condition, if the "Grey Zones" the bank is in a safe condition but has the potential for financial distress, and if it is in "Distress Zones" it means the bank is in a state of financial distress.\textsuperscript{5} Panel data regression is an analytical tool used in this study. Panel data is a combination of time series data and cross section data\textsuperscript{6}. The analysis in this study uses Eviews software.

C. Result and Discussion

Table 3. Descriptive Statistics Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observasi</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD</td>
<td>60</td>
<td>3.72</td>
<td>2.56</td>
<td>0.077</td>
<td>9.328</td>
</tr>
<tr>
<td>NPF</td>
<td>60</td>
<td>4.54</td>
<td>5.85</td>
<td>0.02</td>
<td>22.04</td>
</tr>
<tr>
<td>FDR</td>
<td>60</td>
<td>86.67</td>
<td>23.61</td>
<td>38.33</td>
<td>196.73</td>
</tr>
<tr>
<td>ROA</td>
<td>60</td>
<td>1.685</td>
<td>3.925</td>
<td>-10.77</td>
<td>13.58</td>
</tr>
<tr>
<td>CAR</td>
<td>60</td>
<td>28.1</td>
<td>18.98</td>
<td>11.51</td>
<td>149.68</td>
</tr>
</tbody>
</table>

Sumber: Output E-views (Reprocessed)

Based on Table 3, there are 60 data observations. Furthermore, the results of the descriptive analysis show that the Non-Performing Financing (NPF) variable has an average value of 4.54. Then, the minimum data is 0.02 and the maximum data is 22.04. Besides that, the standard deviation for Non-Performing Financing shows a result of 2.56. Then, the mean value for the Financing to Deposit Ratio (FDR) variable is 86.67. While the minimum value of the FDR data is 38.33 and the maximum value of the FDR variable is 196.73. Finally, the standard deviation shows a value of 23.61.

In table 3 the results of the descriptive statistical analysis show an average value of 1.685 for the Return on Assets (ROA) variable, with a minimum data value of -10.77 and a maximum value of 13.58. Furthermore, the standard deviation value of Return on Assets shows the number 3.925. Then the average value on the Capital Adequacy Ratio (CAR) variable, which shows the number 28.1. Besides that, the minimum CAR value is 11.51 and the maximum data value is 13.58. Finally, the standard deviation of the Capital Adequacy Ratio variable shows the number 18.98.

1. Uji Pemilihan Model
   a. Uji Chow

   The purpose of the Chow test is to determine the right panel data regression model to use, whether the model is the Common Effect Model or the

\textsuperscript{6} Agus Tri Basuki, \textit{Analisis Regresi Dalam Penelitian Ekonomi Dan Bisnis} (Jakarta: Rajawali Pers, 2016). h. 9
Fixed Effect Model. The E-VIEWS program is used in this test method. The requirements for determining the F-Stat/Chow test include:

1) If the probability figures from Cross-section F and Cross-section Chi-square show > 0.05, it means that H0 is accepted. Then the selected regression model is the Common Effect Model.
2) b. If the probability number of the Cross Section F and Cross-section Chi-square shows <0.05, it means that H0 is rejected, and the regression model chosen is the Fixed Effect Model.

The results of the Chow test in the table 4 show that the probability obtained is 0.0000 which is less than 0.05. So, this means that H0 is rejected and the regression model chosen is the Fixed Effect Model (FEM).

<table>
<thead>
<tr>
<th></th>
<th>Statistic</th>
<th>d.f</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>9.240357</td>
<td>(9,46)</td>
<td>0.0000</td>
</tr>
<tr>
<td>Cross-section Chi-square</td>
<td>61.946124</td>
<td>9</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Sumber: *Output E-views* (Reprocessed)

b. Hausman Test

The Hausman test is a test to compare between the Fixes Effect Model and the Random Effect Model. This is done to determine which model is most appropriate to use. The Hausman test was carried out using the E-views application program. There are requirements in the Hausman test, including:

1) If the probability number from the random cross-section shows more than 0.05 then H0 is accepted. So that the selected regression model is the Random Effect Model.
2) If the probability number from the random cross-section shows less than 0.05, it means that H0 is rejected. So that the selected regression model is the Fixed Effect Model (FEM)
The results in Table 5 show that the probability obtained is 0.1354 which is more than 0.05. This means that H0 is accepted by the selected regression model which is the Random Effect Model (REM).

c. Multicollinearity Test

The purpose of the multicollinearity test is to test whether there is a correlation between model and independent variables. Multicollinearity affects the emergence of the height of the selected variable in the sample. In other words, if the standard error value is high when testing the coefficient, the t-table value is greater than the t-count. This indicates that there is no correlation between the independent variable and the dependent variable. In making multicollinearity test decisions, there are several conditions as follows:

1) If the correlation value is <0.80, it means there is no multicollinearity problem
2) If the correlation value is > 0.80, it means that there is a multicollinearity problem

Table 6 shows that the correlation values of X1, X2, X3, and X4 are less than 0.85. Which means this model is free from multicollinearity.
2. Panel Data Regression

Based on Table 7 results of panel data regression analysis, the equation mode for the independent variables that affect financial distress:

\[ Y = 1,131,838 + 0,029,624 X_1 \text{ (CAR)} \]

Table 6 shows that 1 of the 4 independent variables in this study, the capital adequacy ratio variable is the independent variable that has the most effect on the dependent variable with a probability value of 0.016 which is lower than the significant value of 0.05. Meanwhile, other independent variables such as FDR, NPF, and ROA do not affect financial distress because they are at a significance level above 0.05. The result of the regression panel data test is beneficial to determine the magnitude of the influence of the independent variables (NPF, FDR, ROA, and CAR) on the dependent variable (financial distress). The results obtained from the test results using e-views software are explained in the following table:

| FD     | Coefficient | t      | P > |t| |
|--------|-------------|--------|-----|---|
| NPF    | 0,09        | 1,669  | 0,1 |
| FDR    | 0,012       | 1,317  | 0,193|
| ROA    | 0,133       | 1,451  | 0,152|
| CAR    | 0,029       | 2,477  | 0,016|
| Constant | 1,131     | 0,968  | 0,336|

Source: Output E-views (Reprocessed)

3. The Influence of NPF, ROA, CAR and FDR On The Financial Distress

a. The influence of Non-Performing Financing (NPF) variables on financial distress

\( \text{NPF} \) is a ratio measurement tool used to measure the risk of financing failure. NPF is the ratio between problem financing such as substandard, doubtful, and loss financing criteria with the total financing disbursed\(^7\). NPF is calculated using the following equation:

\[ \text{NPF} = \frac{\text{financing (ktd.m)}}{\text{total financing}} \times 100\% \]

The higher the NPF value at a bank, the lower the management's ability to manage loans, resulting in a poorer quality of the bank's credit. This increases the number of problem loans in banks and also increases the possibility of financial difficulties.

The results of the panel data regression explain that NPF has no effect on financial distress, with a probability of NPF 0.1 > a significance value of 0.05. In the test results of this study, the average Islamic bank in Indonesia for the period 2017–2022, at 4.54%, shows a figure below 5%.

In line with the research of Suhadi & Kusumaningtias and Sistiyarini & Supriyono, the results of their studies explain that NPF did not affect conditions of financial distress because, during the study period, based on the provisions of Bank Indonesia, BUS is still in the good category when it is

below 5%. When the value exceeds the regulatory limits set by Bank Indonesia, the bank will receive sanctions following the SOP, such as supervision of incentives carried out with supervision and other special procedures.

b. The effect of the Financing-to-Deposit Ratio (FDR) variable on financial distress

FDR is an indicator that reflects the amount of third-party funds paid in the form of a loan. FDR is the ratio used to measure the amount of distribution of funds in the form of financing, which has been compared previously with public savings funds (savings). The FDR equation can be calculated from:

\[
FDR = \frac{\text{financing}}{\text{third-party funds}} \times 100\%
\]

Based on the results of variable testing, FDR does not affect financial distress, because the probability value of FDR 0.193 > a significance value of 0.05. According to statistics, FDR variables do not affect financial distress. FDR is a measurement tool that has the function to assess the health of a bank's performance as a financial intermediary.

Pamungkas et al. (2021) describe that during the variable research in good condition and the liquidity capability of sharia, banks are in very good condition. As a result, FDR had no effective effect on the financial distress of the Islamic Bank. Mugiarti & Mranani (2019) describes whether the possibility of bank bankruptcy is not related to the amount of money issued by banks to borrowers. Islamic commercial banks have sufficient liquidity capacity to meet their obligations, so FDR will not have an impact on financial distress.

c. The influence of the variable Return on Assets (ROA) on financial distress

The profitability index shows an increase, indicating that the bank's performance is getting better. To measure the level of profitability, what researchers use here is ROA. ROA is a ratio that measures a bank's ability to gain profit as a whole. The ratio value ROA for banks that have experienced an increase, indicates that the profit the bank gets is getting bigger as seen from the use of its assets.

\[
ROA = \frac{\text{profit before tax}}{\text{average total assets}} \times 100\%
\]

The company's financial ratios, in this case, the bank's, are closely related to the income or profitability indicators known as ROA (Return on Assets). The chance of a bank experiencing financial distress decreases as it increases. The lower the loan, the greater the chance that the bank will go

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bankrupt, and vice versa. Ratio ROA is used to calculate bank income from asset utilization.\(^\text{10}\)

Based on the results of regression testing, it was stated that the ROA did not affect financial distress. Based on the panel data regression test, the results of the probability value ROA 0.152 > the significance value of 0.05.

Putri & Sari’s study states that banks may experience financial distress as ROA increases, and vice versa. When ROA increases, the bank will likely experience financial distress as ROA decreases.\(^\text{11}\) Research Kareem describes the return on assets as higher, indicating that the financial system is stronger and will reduce the possibility of financial difficulties. Financial difficulties, on the other hand, arise when the return on assets is lower, as indicated by poor financial performance.

d. The influence of the Capital Adequacy Ratio (CAR) variable on financial distress

CAR is a measuring tool to measure the performance of investment banking. If a bank has sufficient capital to reduce losses, then the opportunity for the bank to generate profits is very large, which can reduce the possibility of the bank experiencing financial difficulties. (Kareem et al., 2020). Research by Kuncoro & Agustina (2017) explains that the increase in CAR has implications for increasing bank stability, which reduces the danger of financial difficulties because high capital means low credit. Then the bank will send a strong signal to external parties that the bank is in good condition. Research by Maisarah et al. (2018) argues that the CAR effect on predictions is related to bank failure. CAR is also used to assess the ability of available capital to cover potential losses in credit and securities trading. The capital adequacy ratio (CAR) is the capital adequacy ratio that serves to cover the risk of loss that may be faced by the bank. If the value is high, the ability of a bank to bear the risk of any risky credit or productive assets is considered very well.

\[
\text{CAR} = \frac{\text{bank capital}}{\text{ATMR}} \times 100\%
\]

Based on the results of regression testing CAR has a positive influence on financial distress. The test results show a value of 0.029 and then a significance value of 0.016, which means it is below 0.05 according to variable statistics and has a positive effect on financial distress.

Veitzhal argue that the lower the CAR, the lower the bank's capital to bear risk assets. Banks that do not have sufficient capital to bear the decline in the value of risky assets will be vulnerable to financial distress. Capital becomes an urgent requirement that must be in place to protect against possible losses on investment in productive assets that contain risk and cannot be used for


fixed asset investment and investment financing\(^{12}\). Zahrnyana & Mahardika's study explains that if the score is lower than the growth rate, it indicates increasing the capital required to guarantee the average asset according to the risk and impact of financial distress\(^{13}\).

D. Conclusion

Reflecting on the results of the research and discussion previously described, it can be concluded that:

1. The panel data regression results describe that NPF does not affect financial distress, the probability value of NPF is 0.1 > a significance value of 0.05. According to statistics, the NPF variable does not affect financial distress.

2. The results of the panel data regression describe that ROA does not affect financial distress. From the results of the panel data regression test, the ROA probability value is 0.152 > a significance value of 0.05.

3. From the regression results it is found that CAR has a positive effect on financial distress. The test results show a value of 0.029 and a significance value of 0.016 which is below 0.05, according to statistics the CAR variable has a positive effect on financial distress.

4. From the results of the panel data regression, it is explained that the FDR ratio does not affect financial distress, this is because the probability of FDR is 0.193 > a significance value of 0.05. According to statistics, the FDR variable is not affected by financial distress.

From the results of this study, Islamic banks as channeling institutions and public fund collectors must be able to maintain the stability of the value ratio. In addition, the Z-Score value in the gray zone category must be overcome by increasing various ratios that are relevant to the Z-score value.

Bibliography


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