The Influence of NPF, ROA, CAR, and BOPO on Financial Distress at Sharia Rural Bank in Indonesia

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Abstract

This research was motivated by the problem of financial performance at BPRS experiencing a decrease but the number of units experiencing an increase. The purpose of this study is to analyze the effect of NPF, ROA, CAR, and BOPO on financial distress at Sharia Rural Banks (BPRS) in Indonesia. BPRS is an important financial institution that supports Micro, Small and Medium Enterprises (MSMEs) in Indonesia. However, in recent years, the financial performance of BPRS has shown a worrying trend, such as increasing NPF and BOPO ratios and decreasing ROA. This study uses data from the financial statements of BPRS registered with the Financial Services Authority (OJK) for 2019 to 2023. The analysis method uses panel data regression with EViews. This study obtained the results that NPF and BOPO have a significant positive effect on financial distress, ROA shows a significant negative effect, and CAR doesn't have a significant effect in this study. It's hoped that this study can provide recommendations to BPRS to improve operational efficiency and manage good financial risks in order to avoid bankruptcy and can continue to contribute to the development of the community's economy.

Keyword: Financial Distress; Performance

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INTRODUCING

Rural Bank (BPR) is a financial institution whose activities do not provide payment traffic services. In other words, in terms of business processes, BPR has a different role in society. BPR's business activities focus on intermediation activities (Tuturoong et al., 2021). When viewed institutionally, the rural bank also has a Sharia institutional form, like a commercial bank, commonly referred to as the Sharia Rural Bank (BPRS). The role of BPRS is essential for the growth of Micro, Small, and Medium Enterprises (MSMEs) because BPRS can reach small communities (Indrajati et al., 2020) .

BPRS activities include fundraising, fund distribution, and other banking service activities. BPRS are usually located in villages or districts that generally provide services almost similar to banks but on a smaller scale (Anwar et al., 2020) . BPRS can develop villages or regions to increase village potential in agriculture, food and others (Shetty & Bhat, 2022). Moreover, Indonesia is a developing country where poverty generally still occurs, and financing from BPRS can provide solutions for poor people to do business (Lusiana et al., 2022). On a micro-scale, the existence of BPRS has a significant role in the economy in the real sector because of the role of BPRS in encouraging the growth of MSMEs, which are the targets of BPRS financing (Nugrohowati & Bimo, 2019) .

In the last 5 years, the number of BPRS has increased steadily. 2020 there were 164 institutions; until 2023, there were 173. However, during that duration, several financial performance ratios experienced unsatisfactory records. The decline in the condition of the BPRS financial performance ratio indicates that financial institutions such as BPRS are very vulnerable to bankruptcy (Masduki et al., 2019). In terms of default risk, NPF in 2019 was 6.79 to 9 in 2024, a decrease in profitability from 2019 by 2.6 to 1.6 in 2024 and an increase in BOPO in 2019 by 84.53 to 90.9 in 2024, which is above the safe limit of Bank Indonesia. If this increase in NPF and decrease in profitability occurs for years, it will increase the possibility of BPRS experiencing potential bankruptcy. If this condition continues, the risk of bankruptcy will always loom over this institution.

Based on the explanation above, it is known that BPRS faces challenges in carrying out its business activities. In other words, sustainability and the risk of bankruptcy in Indonesia's BPRS are essential problems. This problem needs to be considered, considering the importance of BPRS for the community for economic development through MSMEs and reaching unbankable communities to obtain business capital from BPRS. Therefore, this study aims

to measure and find aspects that influence the risk of bankruptcy in BPRS. The potential for bankruptcy can be measured using financial distress (Hapsari, 2019). By analyzing the determinants of BPRS's financial distress, we can anticipate the potential for bankruptcy so that this institution can provide additional benefits to the economy with healthier institutional conditions.

Financial distress signifies a company's decline that precedes worse events such as bankruptcy or liquidation. Information that a company is in trouble can encourage management to take preventive action before problems occur, which can result in mergers or acquisitions by better companies and early warnings about possible future bankruptcy (Platt & Plat, 2002) .

There are several models to measure a company's financial distress. One financial distress measurement model uses the Zmijewski model (1984) , using financial ratios that measure debt, profitability, and liquidity. The results of the Zmijewski method calculation are divided into two groups. If the X-score is negative, it will be categorized as healthy. The X-score will be categorized as on the verge of bankruptcy if the X-score is positive. The Zmijewski method has three calculation components: ROA, debt ratio, and current ratio (Utari, 2021) . Research conducted by Ummah and Aisyah (2024) explains that the Zmijewski model accurately predicts banking financial distress.

Non-Performing Financing (NPF)

NPF projects the bank's capacity to manage bad debts or problematic financing. A high NPF ratio will worsen credit quality and result in reduced income. If this happens repeatedly every year, then the probability of the bank going bankrupt will increase (Silitonga & Manda, 2022) .

Based on research by Hariono and Azizuddin (2022); Ginting, Munthe and Purba, (2024); Kushermanto *et al.* , (2024) , NPF has a positive effect on financial distress. High bad debts indicate that banks cannot manage their funding well, and the associated risks are relatively high financing.

Furthermore, according to research by Syarifah (2020); Yuliani and Haryati (2022) , NPF has a negative effect on financial distress because, in the study, the ratio of problematic financing does not necessarily cause financial difficulties. After all, financing in the study was only given to customers (excluding credit to other banks). Thus, the first hypothesis in this study is:

H1: NPF affects financial distress.

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Return On Assets (ROA)

ROA indicates that the company can seek profit using its assets. Banks that have high ROA mean they generate more profits. If the company's ROA value decreases relatively, it will face a decrease in profit. If the company experiences yearly losses, it will likely experience financial difficulties (Dewi & Suwarno, 2022) .

Research conducted by Curry and Banjarnahor (2018); Theodorus and Artini (2018); Nilasari (2021); Octavella and Widati (2023) state that ROA has a negative effect on financial distress. High profitability can trigger smaller financial difficulties. High profitability indicates that the company's finances are stable and has good financial reserves. Banks that have sufficient financial reserves can also reduce existing risks and will be stronger in facing financial difficulties.

In contrast to Thoqih Masruri and Kresna Sakti, (2020) , research, ROA significantly positively affects financial distress. If a bank has too much debt compared to its assets, high interest costs can erode profits, even though ROA looks good. The bank must pay its excessive debt using profits. This can lead to financial distress and potential bankruptcy. Thus, hypothesis 2 in this study is:

H2: ROA affects financial distress

Capital Adequacy Ratio (CAR)

CAR is a measure of capital adequacy to support risky assets. Banks with high CAR mean they are capable of handling the risk of productive assets (Syakhrun et al., 2019) . The bank must maintain the CAR ratio so that there is no risk that causes bankruptcy.

Based on research by Ekadjaja *et al.* , (2021); Rizqi and Sunarsih, (2022) explained that CAR has a negative effect on *financial distress*. A high CAR value indicates adequate capital in banking in a healthy condition if appropriately managed. This can reduce the risk of financial distress.

In contrast to the research of Theodorus and Artini (2018); Suot and Koleangan, (2020) who obtained CAR results have a positive but insignificant effect on financial distress, which means that even though it has high capital adequacy, capital management carried out by the bank is less than optimal, thus worsening the financial situation and conditions within it. Therefore, the third hypothesis in this study is:

H3: CAR affects financial distress

Operating Costs Operating Income (BOPO)

BOPO measures a bank's efficiency in its operations, especially costs on operating income (Hariono & Azizuddin, 2022). Banks with a low BOPO ratio will be more efficient in obtaining their profits; conversely, banks with a high BOPO ratio are increasingly inefficient in carrying out their operations. The more inefficient a bank's operations are, the more it can trigger financial difficulties.

Research Asyikin & Chandrarin, (2018); Khadapi, (2017) explained that BOPO positively affects financial distress. This is because BOPO is a ratio that shows the size of the costs paid by the bank to the income obtained in the operational sector. The greater a bank's BOPO ratio, the less effective its operations are. This can cause financial problems and even losses.

This is different from Defika Zahronyana and Mahardika (2018) which explains that BOPO does not affect the condition of financial distress because the BOPO value is in a healthy state.

RESEARCH METHOD

This study uses a quantitative research approach that emphasizes the analysis of numerical data and then processing it using appropriate statistical techniques (Hardani, 2020). The population of this study is BPRS in Indonesia. This study uses a purposive sampling method, using the criteria of BPRS registered with the OJK and publishing complete financial reports from 2019 to 2023.

This study uses secondary data, accumulating data from published financial reports on the OJK website. The independent variables are NPF, ROA, CAR, and BOPO. Financial distress is used as a dependent variable with the Zmijewski's, (1984) method.

Table 1. Operational Definition of Variables

No	Variables	Operational Definition	Formula
1	Financial distress	Financial distress is defined as the final stage of corporate decline that precedes worse events such as	$X - Score = -4,3 - 4,5X1 + 5,7X2 - 0,004X3$ Information : X-Score = *Financial distress* X1 = ROA X2 = *Debt Ratio*

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		bankruptcy or liquidation (Platt & Plat, 2002) .	X3 = *Current Ratio*
2	Non-Performing Financing	NPF is the ratio of problematic financing to total financing (Hariono & Azizuddin, 2022)	$NPF = \dfrac{Total\ NPF}{Total\ Kredit}\ x\ 100\%$
3	Return On Assets	ROA is the profit ratio that obtained by a company from the management of total assets owned (Khamisah et al., 2020)	$ROA = \dfrac{Laba\ Bersih}{Total\ Asset}\ x\ 100\%$
4	Capital Adequacy Ratio	CAR is used to measure the adequacy of capital held to cover risky assets. (Asyikin & Chandrarin, 2018)	$CAR = \dfrac{Modal}{ATMR}\ x\ 100\%$
5	Operating Expenses Operating Income	BOPO is a ratio that measures the level of efficiency and ability of a bank to carry out its operations (Sitompul & Nasution, 2019) .	$BOPO = \dfrac{Biaya\ Operasional}{Pendapatan\ Operasional}\ x\ 100\%$

In this study, the analysis was conducted using a panel data regression model. Ghozali, (2018) stated that panel data regression combines time series data with cross-section data. The data analysis tool used is the Eviews version 12 program with the following research model:

$$Y_{it} = \alpha + \beta 1 NPF_{it} + \beta 2 ROA_{it} + \beta 3 CAR_{it} + \beta 4 BOPO_{it} + \epsilon_{it}$$

RESULT AND DISCUSSION

Descriptive Statistics Results

Table 2. Descriptive Statistics

	FD	NPF	ROA	CAR	BOPO
Mean	-1.866233	3.852867	1.957483	34.24448	80.63918
Median	-1.620000	3.650000	1.870000	27.72000	83.13000
Maximum	15.30000	9.720000	12.18000	198.5300	135.9000
Minimum	-21.50000	0.020000	-10.28000	0.000000	-0.270000
Std. Dev.	4.445032	2.644759	2.292404	23.19674	14.76385
Observations	600	600	600	600	600

Table 2 shows that the Financial Distress (FD) variable has an average value of -1.866233, a maximum value of 15.3, and a minimum value of -21.5. The NPF variable has an average value of 3.852867, a maximum value of 9.72, and a minimum value of 0.02. The ROA variable has an average value of 1.957483, a maximum value of 12.1, and a minimum value of -10.28. The CAR variable has an average value of 34.24448, a maximum value of 198.53, and a minimum value of 0.00. The BOPO variable has an average value of 80.63918, a maximum value of 135.90, and a minimum value of -0.27.

Classical Assumption Test

Normality Test

Table 3. Normality Test

Jarque-Bera	5.223166
Probability	0.073418

The normality test results obtained a Jarque-Bera probability value of 0.073418, more significjant than 0.05. In other words, the data used is normally distributed.

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Multicollinearity Test

Table 4. Multicollinearity Test

	FD	NPF	ROA	CAR	BOPO
FD	1,000,000	0.445412	-0.392866	0.103627	0.239171
NPF	0.445412	1,000,000	-0.721797	-0.061417	0.480597
ROA	-0.392866	-0.721797	1,000,000	0.060835	-0.473475
CAR	0.103627	-0.061417	0.060835	1,000,000	-0.005024
BOPO	0.239171	0.480597	-0.473475	-0.005024	1,000,000

The results above state that each variable does not have a correlation value > 0.8. In other words, the data does not experience multicollinearity.

Heteroscedasticity Test

Table 5. Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.89258	7.117413	2.513916	0.0122
NPF	0.427532	0.564626	0.757196	0.4492
ROA	-0.576780	0.648513	-0.889389	0.3742
CAR	0.030948	0.043480	0.711785	0.4769
BOPO	-0.052347	0.079480	-0.658620	0.5104

The results of the heteroscedasticity test show that all variables are in a condition of homoscedasticity because it is more than 0.05, so all variables do not experience heteroscedasticity.

Hypothesis Testing

Partial Test (t-Test)

Table 6. T-Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.225416	1.220948	-4.279802	0.0000
NPF	0.455545	0.113445	4.015544	0.0001
ROA	-0.564600	0.115105	-4.905075	0.0000
CAR	0.013163	0.010913	1.206210	0.2283
BOPO	0.028007	0.013359	2.096422	0.0366

The Impact of NPF on Financial Distress

Based on the results of the t-test of the effect of NPF on Financial Distress, a probability value of 0.0001 <0.05 was obtained, so it can be seen that NPF has a positive and significant impact on Financial Distress. This aligns with research by Ginting et al., (2024); Hariono & Azizuddin, (2022) which found that NPF positively affects financial distress. In other words, the greater the NPF in a BPRS, the greater the symptoms of financial distress. High NPF indicates that the bank cannot manage its funding correctly, and the risks associated with financing are relatively high. This can increase the potential for financial difficulties that BPRS will experience.

The Influence of ROA on Financial Distress

Based on the results of the t-test of the effect of ROA on Financial Distress, a probability value of 0.0000 <0.05 was obtained. ROA has a negative and significant impact on Financial Distress. Research by Curry & Banjarnahor, (2018); Nilasari, (2021); Octavella & Widati, (2023); Theodorus & Artini, (2018) explain that ROA has a negative effect on financial distress. In other words, the lower the ROA, the higher the financial distress in BPRS. High profitability indicates that the company's finances are stable and has good financial reserves. Banks with sufficient financial reserves can also reduce existing risks and will be stronger when facing financial difficulties.

The Influence of CAR on Financial Distress

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Based on the t-test results of CAR's effect on Financial Distress, a probability value of 0.2283 <0.05 was obtained, so the results showed that CAR did not affect financial distress. This aligns with research by Alvidianita & Rachmawati, (2019) , which stated that CAR did not affect financial distress. This may be because CAR in BPRS is generally relatively stable at 22.8%, so its variability is no longer the primary determinant of financial distress. On the other hand, financial distress is likely to be more influenced by different factors, such as FDR.

The Influence of BOPO on Financial Distress

Based on the t-test results of the effect of BOPO on financial distress, a probability value of 0.0366> 0.05 was obtained, and the results showed that BOPO affected financial distress. Research conducted by Asyikin & Chandrarin, (2018); Khadapi, (2017) showed that BOPO positively affected financial distress. BPRS in Indonesia is still less effective in managing its operations, which can cause financial problems and even losses. As a result, an increase in this ratio will impact financial problems.

CONCLUSION

Based on the hypothesis testing and the results of the data analysis that have been carried out, this study provides an overview of the influence of several financial variables on *financial distress* as measured by the X-Score according to Zmijewski on BPRS in Indonesia. The following are the conclusions of this study: NPF has a positive effect on *financial distress.* This is evidenced by the NPF coefficient which has a positive value of 0.455 and a significance value of 0.0001 which is less than 0.05. ROA has a negative effect on *financial distress* . This is evidenced by the ROA coefficient which has a negative value of -0.5646 and a significance value of 0.0000 which is less than 0.05. CAR has no effect on *financial distress* . This is evidenced by the CAR significance value of 0.2283 which is more than 0.05. BOPO has a positive effect on *financial distress* . This is evidenced by the BOPO coefficient which has a positive value of 0.28007 and a significance value of 0.0366 which is less than 0.05.

REFERENCES

Alvidianita, A., & Rachmawati, L. (2019). Pengaruh RGEC Terhadap Financial Distress Pada BAnk Muamalat Indonesia. *Jurnal Ekonomi Islam*, *2*(No.2), 97–109.

Anwar, M., Nidar, S. R., Komara, R., & Layyinaturrobaniyah, L. (2020). Rural bank efficiency and loans for micro and small businesses: evidence from West Java Indonesia. *International Journal of Emerging Markets*, *15*(3), 587–610. https://doi.org/10.1108/IJOEM-11-2017-0494

Asyikin, J., & Chandrarin, G. (2018). Analysis of Financial Performance To Predict Financial Distress in Sharia Commercial Banks in Indonesia. *International Journal of Accounting*, *1*(2), 11–20.

Curry, K., & Banjarnahor, E. (2018). Financial Distress Pada Perusahaan Sektor Properti Go Public Di Indonesia. *Prosiding Seminar Nasional Pakar*, 207–221. https://doi.org/10.25105/pakar.v0i0.2722

Ghozali, I. (2018). *Aplikasi Analisis Multivariate dengan Program IBM SPSS*. Badan Penerbit Universitas Diponegoro.

Ginting, N. A. B., Munthe, K., & Purba, A. M. (2024). Pengaruh Roa, Roe, Ldr, Cr, Dan Npl Terhadap Kondisi Financial Distress Pada Perusahaan Perbankan Yang Terdaftar Di Bursa Efek Indonesia Periode 2019-2022". *KUKIMA : Kumpulan Karya Ilmiah Manajemen*, *3*(1), 64–83. https://doi.org/10.54367/kukima.v3i1.3787

Hapsari, E. I. (2019). Kekuatan Rasio Keuangan Dalam Memprediksi Kondisi Financial Distress Perusahaan Manufaktur BEI 2010-2013. *Jurnal Dinamika Manajemen (Sinta 3)*, *5*(2), 171–182.

Hardani. (2020). Metode Penelitian Kualitatif & Kuantitatif. In H. Abadi (Ed.), CV. *Pustaka Ilmu Group*.

Hariono, A. F., & Azizuddin, I. (2022). Analisis Kinerja Keuangan terhadap Financial Distress pada Bank Umum Syariah di Indonesia Periode 2016-2020. *Jurnal Ekonomi Syariah Teori Dan Terapan*, *9*(2), 273–285. https://doi.org/10.20473/vol9iss20222pp273-285

Indrajati, V., Yuvita, Y., Putri, N. A., Rismawati, F. O., & Puspitasari, D. M. (2020). Determinants of Financial Distress Rural Bank in Indonesia: A Logit

Approach. *Solid State Technology*, *63*(3), 5069–5075.

Khadapi, M. (2017). *Pengaruh car, roa, bopo dan fdr terhadap financial distress bank umum syariah di indonesia periode 2014-2016.*

Khamisah, N., Nani, D. A., & Ashsifa, I. (2020). Pengaruh Non Performing Loan (NPL) , BOPO dan Ukuran Perusahaan Terhadap Return On Assets (ROA) Perusahaan Perbankan yang Terdaftar di Bursa Efek Indonesia (BEI). *TECHNOBIZ : International Journal of Business*, *3*(2), 18. https://doi.org/10.33365/tb.v3i2.836

Lusiana, E. D., Pramoedyo, H., & Sudarmawan, B. N. (2022). Spatial Quantile Autoregressive Model: Case Study of Income Inequality in Indonesia. *Sains Malaysiana*, *51*(11), 3795–3806. https://doi.org/10.17576/jsm-2022-5111-23

Masduki, U., Efriadi, A. R., & Ermalina, E. (2019). Kemampuan Model Z- Score dan Model Springate Dalam Memprediksi Financial Distress BPR Multi Artha Sejahtera. *Jurnal Manajemen Dan Keuangan*, *8*(1), 68–79. https://doi.org/10.33059/jmk.v8i1.1156

Nilasari, I. (2021). Pengaruh Good Corporate Governance, Financial Indicators, dan Ukuran Perusahaan Terhadap Financial Distress. *Competitive Jurnal Akuntansi Dan Keuangan*, *5*(2), 6.

Nugrohowati, R. N. I., & Bimo, S. (2019). Analisis pengaruh faktor internal bank dan eksternal terhadap Non-Performing Financing (NPF) pada Bank Perkreditan Rakyat Syariah di Indonesia. *Jurnal Ekonomi & Keuangan Islam*, *5*(1), 42–49. https://doi.org/10.20885/jeki.vol5.iss1.art6

Octavella, A. C., & Widati, L. W. (2023). Pengaruh CAR, ROA, LDR, PPAP, NPM terhadap financial distress pada Bank BPR Kota Semarang. *Jurnal Ilmiah Akuntansi Dan Keuangan*, *5*(10). https://journal.ikopin.ac.id/index.php/fairvalue

Platt, H. D., & Plat, M. B. (2002). Predicting Corporate Financial Distress: Reflections on Choice-Based Sample Bias. *Journal of Economics and Finance*, *26*(2), 184–199.

Shetty, M. D., & Bhat, S. (2022). A Case Study on the Growth of Rural Banking in India. *International Journal of Case Studies in Business, IT, and Education*,

6(2), 346–357. https://doi.org/10.47992/ijcsbe.2581.6942.0201

Sitompul, S., & Nasution, S. K. (2019). The Effect of Car, BOPO, NPF, and FDR on Profitability of Sharia Commercial Banks in Indonesia. *Budapest International Research and Critics Institute (BIRCI-Journal) : Humanities and Social Sciences*, *2*(3), 234–238. https://doi.org/10.33258/birci.v2i3.412

Theodorus, S., & Artini, L. G. S. (2018). Studi Financial Distress Pada Perusahaan Perbankan di BEI. *E-Jurnal Manajemen Unud*, *7*(5), 2710–2732.

Tuturoong, A., Sondakh, J. J., & Tangkuman, S. J. (2021). Evaluasi Pengakuan Pendapatan Pada Pt. Bank Perkreditan Rakyat (Bpr) Primaesa Sejahtera Manado Evaluation of Income Recognition At Pt. Rural Bank (Bpr) Primaesa Sejahtera Manado. *Jurnal EMBA*, *9*(2), 148–156.

Ummah, F. K., & Aisyah, E. N. (2024). Analysis of Zmijewski Model's Accuracy in Predicting Potential Financial Distress for Indonesian Islamic Banking. *Asian Journal of Economics, Business and Accounting*, *24*(5), 34–40. https://doi.org/10.9734/ajeba/2024/v24i51290

Utari, A. D. (2021). Analisis Perbandingan Metode Zmijewski dan Grover dalam Memprediksi Kebangkrutan Bank yang Terdaftar pada BEI Tahun 2015-2019. *Jurnal Ilmu Manajemen*, *9*(2), 489. https://doi.org/10.26740/jim.v9n2.p489-498

Zmijewski, M. E. (1984). Methodological Issues Related to the Estimation of Financial Distress Prediction Models Author (s): Mark E . Zmijewski University of Chicago Stable URL : http://www.jstor.org/stable/2490859 Methodological Issues Related to the Estimation of Financial Di. *Journal of Accounting Research, Vol. 22, Studies on Current Econometric Issues in Accounting Research (1984), Pp. 59-82*, *22*(1984), 59–82. https://www.jstor.org/stable/2490859