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Liquidity Risk, Credit Risk and Capital as Determining of Predicting Financial Distress in Rural Banks in Indonesia

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ABSTRACT:
This study aims to analyze the level of accuracy of financial distress prediction models and to test the ability of liquidity risk ratio, credit risk and capital ratio in predicting the possibility of financial distress in rural banks (BPR) in Indonesia. The data used is sourced from secondary data and collected from BPR's financial statements published on the Financial Services Authority (OJK) website during the 2014-2023 period. The population in this study is all rural banks as many as 1,402 rural banks and the number of samples is 312 rural banks spread throughout Indonesia. Determination of samples by the Slovin method by proportionate stratified random sampling technique. The results of the study that the liquidity risk ratio, credit risk and capital ratio in predicting financial distress can be used with an accuracy rate of 95.90%. Liquidity risk ratio and credit risk ratio have a positive and significant effect, capital ratio and primary ratio have a negative and significant effect, while capital adequacy ratio has a positive and significant effect on the possibility of financial distress in rural banks in Indonesia.
Keywords: Financial Distress, Liquidity Risk, Credit Risk, Capital, Rural bank.

INTRODUCTION

People's credit banks (BPR) are one of the bank's financial institutions that have a role as an intermediary institution, whose role is to collect public funds and then distribute them back to people who need capital for business purposes. Therefore, the existence of rural banks is still needed to serve the interests of the community, especially in areas that have not been reached by commercial banks. But in fact at this time commercial banks also expand their service areas to villages, so competition becomes quite tight. Not to mention the existence of competitors from microfinance institutions, especially savings and loan cooperatives. The intense competition makes BPR have to improve its financial performance and improve service to customers.

BPR's financial performance over the last 10 years is mainly seen from the number of assets, core capital, third party funds raised, and the number of loans successfully disbursed continue to increase, as can be explained in figure 1 below.

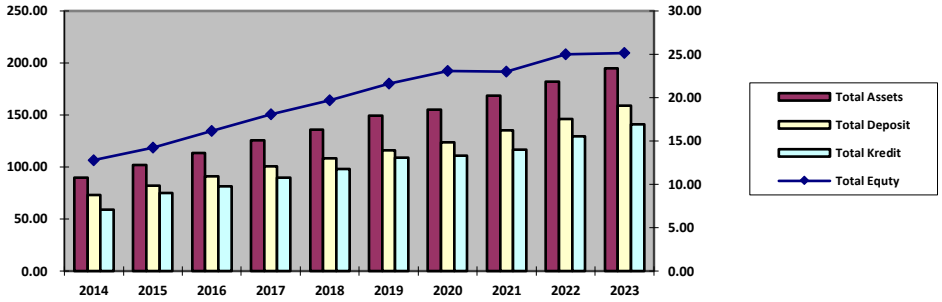

Figure 1. Development of Total Assets, Total Deposits, Total Loans and Total Equity of BPR in Indonesia for the Period 2014 – 2023

Source: Indonesian Banking Statistics (data processed)

Based on data obtained from the Indonesian Banking Statistics for the period 2014-2023 as explained in Figure 1 above, the total assets of rural banks in Indonesia continue to increase from Rp.89.88 trillion in 2014 to Rp.194.98 trillion in 2023. The increase in the number of assets was caused by an increase in the amount of third party funds (DPK) that were successfully raised, where in 2014 DPK amounted to Rp.72.91 trillion increased to Rp.158.75 trillion in 2023 this means that public trust in BPR continues to increase and is also followed by an increase in BPR equity which in 2014 Rp.12.80 trillion increased to Rp.25, 14 trillion by 2023. Increasing public confidence also affects the ability of rural banks to disburse credit to their debtors, where total loans in 2014 amounted to Rp.59.18 trillion increased to Rp.140.79 trillion in 2023.

Increasing public confidence in rural banks and increasing total loans disbursed were not followed by improvements in other financial performance. Where the return on assets of rural banks as one of the benchmarks that rural banks succeed in financial performance is precisely the ROA of rural banks continues to decrease, one of the causes is an increase in non-performing loans, as can be explained in figure 2 below.

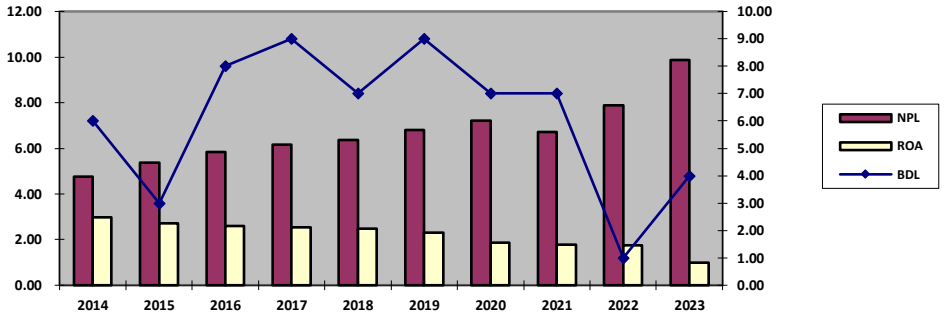

Figure 2. Development of NPL, ROA and Banks in Liquidation of BPR in Indonesia for the 2014-2023 Period

Source: Indonesian Banking Statistics (data processed)

Indicators of the success of rural banks in disbursing loans can be seen from how much the loans disbursed are problematic, the greater the loans disbursed are problematic in addition to disrupting liquidity capabilities will also hamper and even reduce BPR revenues, eventually BPR profits also fall. This can be explained as figure 2 above, that BPR's NPL over the last 10 years has continued to increase, in 2014 it was 4.75% and continued to increase to 9.87% in 2023 and has implications for ROA which continues to decrease. This condition will cause the possibility of BPR experiencing financial difficulties and eventually going bankrupt. This condition causes banks to be liquidated by the Financial Services Authority (OJK), as it is known that every year there are banks liquidated by the OJK, during the 2014-2023 period OJK has liquidated as many as 61 rural banks, which is an average of 6 rural banks every year. The highest number of liquidated rural banks occurred in 2017 and 2019 as many as 9 rural banks each, while the lowest in 2022 was 1 rural bank.

Banks as intermediary institutions, which attract and distribute public funds. These two activities are interrelated and contain elements of risk in the form of credit risk and capital adequacy (Buchdadi et al., 2020). The use of indicators of capital ratios and financial risks is based on the reason that capital ratios as indicators cause bank failure and every bank management decision can cause various risks that lead to bank failure (Malaka, 2014). Many researchers have conducted research with variable indicators of liquidity risk ratios, credit risk and capital that affect the occurrence of financial distress. The results of research related to liquidity risk variables, which state that liquidity risk has a positive and significant effect on financial distress were conducted by Setiawan et al. (2021), Ekadjaja et al. (2021) and Mariana & Manda (2021) in contrast to the findings of Ray & Nugroho (2023) which stated that liquidity risk has a negative and significant influence on financial distress. Even research by Wijayanti et al. (2018) states that liquidity risk does not significantly affect financial distress.

Research Results of Ekadjaja et al. (2021), Buchdadi et al. (2020), Suardika et al. (2023), and Mariana & Manda (2021) stated that credit risk has a positive and significant effect on financial distress, while the findings of Setiawan et al. (2021), Ray & Nugroho (2023) stated that credit risk (NPL) has a negative and significant effect on financial distress, but research by Wijayanti et al. (2018), Pristianti & Musdholifah (2020) and Kareem et al. (2022) found that credit risk does not significantly affect financial distress.

While research by Azizah & Lismawati (2024), Sadida (2018), Zahronyana & Mahardika (2018), and Buchdadi et al. (2020) the results of their research stated that the capital adequacy ratio had a negative and significant effect on financial distress, but Purnamandari & Badera (2015), Hayati (2018) and Kareem et al. (2022) stated that the capital adequacy ratio had a positive and significant effect on financial distress. Even the results of research by Wijayanti et al. (2018), and Suardika et al. (2023) stated that the capital adequacy ratio did not significantly affect financial distress.

Based on the above, this study will examine the ability of liquidity risk ratios, credit risk ratios, and capital ratios to predict the occurrence of financial distress in rural banks in Indonesia.

RESEARCH METHODS

Data, Population and Samples

The data used is sourced from secondary data and collected from conventional rural bank (BPR) financial statements published on the Financial Services Authority (OJK) website during the 2014-2023 period. The population in this study is all conventional rural banks in Indonesia as many as 1,402 rural banks. The number of samples in this study was 312 rural banks spread throughout Indonesia, whose sampling was determined using the Slovin method (Wiyono, 2011) with a sampling error of 5%. Given that the population members are not homogeneous and uneven in each province, we use proportionate stratified random sampling techniques in sampling each province in Indonesia.

Research Variables and Their Measurement

The independent variables in this study are liquidity risk ratio, credit risk and capital ratio (X_i), while to predict bank financial distress used Zmijewski model (1984), which is a dependent variable (Y) and is a dummy variable with a nominal scale, namely rural banks that experience financial distress are given a value of 1 and those that do not experience financial distress is rated 0. The 1984 Zmijewski model with the formula (Kristanti, 2019) as follows:

$Zm = -4.336 – 4.513\ X_1 + 5.679\ X2 – 0.004\ X3$

Where:

Zm = Overall Zmijewski index

X1 = Net profit/total assets

X2 = Total debt/total assets

X3 = Current assets/current debt

Zmijewski classifies companies as follows:

- Companies with a probability smaller than 0.5 are classified into companies that do not experience financial difficulties
- Companies with a greater probability of 0.5 are classified as companies experiencing financial difficulties

Capital Adequacy Ratio = equity capital to risk weighted assets

X_1 = LRR : Liquidity risk ratio = (liquid assets – short term borrowing) to total deposit

X_2 = CRR : Credit risk ratio = bad debt to total loans

X_3 = CR : Capital ratio = (equity capital + reserve for loan losses) to total loans

X_4 = PR : Primary ratio = equity capital to total assets

X_5 = CAR : Capital Adequacy Ratio = equity capital to risk weighted assets

Data Analysis Methods

The data analysis method in this study uses logit regression and data processing using the Statistical Package for Social 24.0 for Windows software tool. Tests conducted using descriptive statistics aim to describe the minimum and maximum values. Mean and standard deviation of the variables present in this study. Hypothesis testing in this study uses binary logit analysis to examine the classification power and significance of the ratio of liquidity risk, credit risk and capital to the possibility of financial distress in rural banks.

1 - FD2CRR + b3CR+ b4PR+ b5CAR

$$Y = Ln \frac{FD}{1 - FD} = a + b_1LRR + b_2CRR + b_3CR + b_4PR + b_5CAR$$

where:

FD	= Financial Distress	CR	= Capital Ratio
LRR	= Liquidity Risk Ratio	PR	= Primary Ratio
CRR	= Credit Risk Ratio	CAR	= Capital Adequcy Ratio

To test the feasibility of the binary logit regression model above, the feasibility test of the model and the overall feasibility test of the model are carried out, as follows:

Model Feasibility Test

Model Feasibility Test is used to test the feasibility of the model (Gani & Amalia, 2015) by considering the output of the Hosmer and Lemeshow Model Feasibility Test, if the statistical value of Hosmer and Lemeshow (Chi-square) > α (0.05) then the model is worth interpreting, if the statistical value of Hosmer and Lemeshow (Chi-square) ≤ α (0.05) then the model is not worth interpreting.

Overall Fit Model Test

The overall feasibility test of the model can be obtained by doing the Chi Square test (X2), the use of the value of X^2 is done by comparing the value of -2log likelihood of the beginning (block number 0) with the value of -2log likelihood of the result (block number 1), if there is a decrease in the value of -2log likelihood then the model shows a good regression model or vice versa.

Classification Table Test

Furthermore, to answer the first hypothesis in this study, a Classification Table test was carried out to predict the possibility of rural banks experiencing financial distress or not experiencing financial distress, so that the level of classification or accuracy of the financial distress prediction model can be known using the liquidity risk ratio, credit risk ratio and capital ratio.

W Test (wald)

To test the second hypothesis of this study, the W (Wald) test is conducted to examine the significance of the partial effects of independent variables on the dependent variable, using the formula:

$$Wi = \left[\frac{Bj}{SE\ Bj}\right]^2$$

If Wi > X2 at alpha 0.05 (the independent variable has no significant effect on the dependent variable)

If Wi < X2 at alpha 0.05 (the independent variable has a significant effect on the dependent variable)

RESULTS AND DISCUSSION

Descriptive Statistical Results

This study uses financial statement data of 312 conventional rural banks during the period 2014-2023 so the number of samples in this study is 3,120 years of observation. Descriptive statistics can be presented in Table 1 below.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Liquidity Risk Ratio	3120	5.6400	995.5800	43.281349	34.9551020
Credit Risk Ratio	3120	.0003	101.7800	6.613997	6.7564505
Capital Ratio	3120	8.4600	542.7300	36.492821	28.1362738
Primary Ratio	3120	3.5100	91.9200	22.529766	13.7162507

Capital Adequacy Ratio	3120	1.0300	304.0800	26.288147	18.9880999
Valid N (listwise)	**3120**				

Source: Bank Publication Report (processed)

Based on Table 1. above, it is known that the average value of Liquidity risk ratio is 43.28% with a minimum value of 5.64% and a maximum value of 995.58% and a standard deviation of 34.96% shows that the average BPR in Indonesia has a fairly high LRR ratio. The average credit risk ratio of 6.61% with a minimum value of 0.0003% and a maximum value of 101.78% with a standard deviation of 6.76% shows that the average ratio of loans containing risk is still high**.**

The average value of Capital ratio of 36.49% with a minimum value of 8.46% and a maximum value of 542.73% with a standard deviation of 28.14% shows that the average ratio of capital owned to loans is quite good. The average Primary ratio value is 22.53%, the minimum value is 3.51% and the maximum is 91.92% with a standard deviation of 13.72%, and the average Capital adequacy ratio is 26.29% with a minimum value of 1.03% and a maximum value of 304.08% with a standard deviation of 18.99%.

Model Feasibility Test Results

By looking at the output of the Hosmer and Lemeshow Model Feasibility Test, the results of the model feasibility test can be seen in Table 2 below:

Table 2. Model Feasibility Test Results

Hosmer and Lemeshow Test			
Step	Chi-square	df	Sig.
1	5.740E+15	8	.000

Based on Table 2 above, the value of Hosmer and Lemeshow (Chi Square) > α (0.05) then the model is feasible to use in this study.

Overall Fit Model Test Results

The overall feasibility test results of the model can be obtained by comparing the value of -2 log likelihood (block number 0) with the value of -2 log-likelihood result (block number 1), as shown in Table 3 below.

Table 3. Overall Model Feasibility Test Results

Overall Fit Model Test	
Block	**-2 log likelihood**
Block Number 0	3532.935
Block Number 1	849.986

Source: processed data

Based on Table 3 above, the value of -2 log likelihood initial (block number 0) of 3,532,935 and the value of -2 log likelihood of results (block number 1) of 849,986 can be said to indicate that the value of -2 log likelihood in this study decreased; therefore, the regression model in this study is feasible and good to use.

Results of BPR Non-Financial Distress and Financial Distress Classification

Furthermore, to answer the first hypothesis in this study, the classification table test was carried out. The results of the classification of rural banks that are predicted to experience financial distress and rural banks that do not experience financial distress can be seen in Table 4 below.

Table 4. BPR Not Financial Distress and Financial Distress Classification

Classification Table[a]

			Predicted		
			Rural Banks		Percentage Correct
	Observed		Not in financial distress	Financial distress	
Step 0	Rural Banks	Not in financial distress	2264	65	97.2
		Financial distress	64	727	91.9
	Overall Percentage				95.9

a. The cut value is .500

Based on Table 4 above, it can be seen, from the number of research samples as many as 3,120 BPR with the results of the overall logistic regression classification, the accuracy of the prediction results is very good, which is 95.9%. The accuracy of predictions in rural banks that did not experience financial distress was very high at 97.2%, where as many as 2,264 observations were predicted correctly and only 65 observations were predicted otherwise. The accuracy of predictions in rural banks experiencing financial distress was 91.9%, of which there were 727 observations that could accurately be predicted to experience financial distress, and there were 64 observations that could not be predicted to experience financial distress.

Based on the results mentioned above, the percentage of truth or accuracy in predicting rural banks experiencing financial distress is very high, at 91.9%; it can be stated that the financial distress prediction model is correct and accurate; thus, the first hypothesis (H1) can be accepted. This is also reinforced by the results of the Omnibus Test of Model Coefficients and Model Summary, as can be explained in Table 5 below.

Table 5. Output of Omnibus Tests of Model Coefficients and Model Summary

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	2682.949	5	.000
	Block	2682.949	5	.000
	Model	2682.949	5	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	849.986[a]	.577	.851

Estimation terminated at iteration number 10 because parameter estimates changed by less than .001.

In Table 5 above, the significance value of the regression model is obtained at 0.000 which < 0.05, so it can be concluded that the independent variables (liquidity risk ratio, credit risk ratio and capital ratio) can have a real influence simultaneously on the model. While the Nagelkerke R Square value of 85.10% shows that the contribution of independent variables in the form of liquidity risk ratio, credit risk ratio and capital ratio in predicting financial distress is 85.10% and the remaining 14.90% can be predicted and explained by other independent variables that are not included in this research model.

Results of Binary Logit Regression Test and Model Formation

Logit regression testing is carried out with the Wald test to partially test the effect of the independent variable on the dependent variable with a significance level of 5%. As can be seen in Table 6 below, a logit regression model can be formed.

Table 6. Wald Test Results

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Liquidity Risk Ratio	.031	.008	16.499	1	.000	1.032
	Credit Risk Ratio	.150	.020	54.174	1	.000	1.161
	Capital Ratio	-.061	.023	6.917	1	.009	.941
	Primary Ratio	-1.457	.082	314.521	1	.000	.233
	Capital Adequcy Ratio	.154	.032	22.856	1	.000	1.166
	Constant	16.011	.847	357.716	1	.000	8984179.420

a. Variable(s) entered on step 1: Liquidity Risk Ratio, Credit Risk Ratio, Capital Ratio, Primary Ratio, Capital Adequacy Ratio.

Based on Table 6 above, the variable liquidity risk ratio proxied with liquidity risk ratio and credit risk variable proxied with credit risk ratio can be used as determinants of financial distress with a significance value of both < α (0.05), this means that it has proven to be statistically significant as a determinant of influencing the occurrence of financial distress at people's precredit banks in Indonesia. While the value of the variable coefficient liquidity risk ratio (0.031) and variable credit risk ratio (0.150) have a positive influence, which means that the higher these two ratios, the greater the probability of BPR experiencing financial distress. Vice versa, if this ratio is small and decreases, the probability of BPR experiencing financial distress is getting smaller.

The variable capital ratio proxied with capital ratio, primary ratio and capital adequacy ratio all have a significant effect, with the significance value of each capital ratio of 0.009, primary ratio and capital adequacy ratio of 0.000 < α (0.05) this shows that these three variables are also determinants that BPR has the potential to experience financial distress or vice versa. The value of the coefficient of the capital ratio variable (-0.061) and primary ratio (-1.457) means that these two variables have a negative influence, meaning that the higher these two ratios, the potential for rural banks to experience financial distress is smaller or the bank is healthier and vice versa, the smaller these two ratios, the higher the potential for rural banks to experience financial distress. While the variable capital adequacy ratio has a positive influence with a coefficient value of 0.154 which means that the higher this ratio, the greater the probability of BPR experiencing financial distress and vice versa, the lower or smaller this ratio, the smaller the probability of BPR experiencing financial distress.

Based on the results of the above research, the second hypothesis (H2) can be accepted, that liquidity risk proxied with liquidity risk ratio and credit risk is proxied with credit risk ratio, and capital ratio proxied with capital ratio, primary ratio and capital adequacy ratio have a significant effect on the probability of financial distress or non-financial distress in rural banks in Indonesia. With these results, a financial distress prediction model is formed, as follows:

$$727 \quad \frac{91.9}{1 - FD} = \text{Overall PercentageLRR1+ 0,150CRR – 0,061 CR– 1,457PR + 0,154CAR.}$$

Based on the results of the logistic regression model mentioned above, the effect of liquidity risk ratio, credit risk and capital ratio on financial distress predictions can be analyzed. To analyze it can be explained using the ln odd ratio. Ln odd ratio is obtained from the results of the expondential logistic regression coefficient ($\exp^{\beta}$), and the probability in the logistic regression model can be found by the formula: Probability = $\exp^{\beta}/(1+ \exp\beta)$ (Gani & Amalia, 2015), as can be explained in Table 4. below.

Table 7. Variable Proportion and Probability Figures

Variabel	Koefisien (β)	Proporsi (exp^{β})	Probabilita = $exp^{\beta}/(1 + exp^{\beta})$
Liquidity Risk Ratio	.031	1.032	0.4907
Credit Risk Ratio	.150	1.161	0.5373
Capital Ratio	-.061	.941	0.4848
Primary Ratio	-1.457	.233	0.1890
Capital Adequcy Ratio	.154	1.166	0.5383
Constant	16.011	8984179.420	1.0000

Source: Results of data processing with excel

From table 4 above, it can be seen the value of each variable liquidity risk ratio, credit risk and capital ratio, the value of the liquidity risk ratio coefficient of 0.031 has a positive effect with the probability of financial distress of 49.07%. The value of the credit risk ratio coefficient of 0.150 has a positive effect with the probability of financial distress of 53.73%. The value of the capital ratio coefficient of 0.061 has a negative effect with the probability of financial distress of 48.48%. The value of the primary ratio coefficient of 1.457 has a negative effect with the probability of financial distress of 18.90% and the capital adequacy ratio coefficient value of 0.154 has a positive effect with the probability of financial distress of 53.83%.

Discussion

From the results of the analysis of liquidity risk ratio, credit risk and capital ratio consisting of liquidity risk ratio, credit risk ratio, capital ratio, primary ratio and capital adequacy ratio can be used to classify into groups of rural banks (BPR) that experience financial distress and those that do not experience financial distress. The financial distress model used using Zmijewski's (1984) model indicators, from the results of the overall logistic regression classification, has a high accuracy of 95.90%. This is in line with the research of Buchdadi et al. (2020), with an accuracy rate of 93.66%. From the results of the logistic regression above, the variables of liquidity risk ratio, credit risk and capital ratio can all significantly affect the probability of financial distress in rural banks in Indonesia.

The liquidity risk ratio reflects the risk faced by banks failing to prepare liquid tools to fulfill their short-term obligations to depositors. The higher the liquidity risk ratio, the greater the bank's liquidity, a liquid bank is a bank that is able to fulfill its obligations, especially short-term obligations so that depositors' trust in the bank increases. The results of the study that the liquidity risk ratio has a positive and significant influence, meaning that the higher this ratio will reflect that the bank has increased liquidity, but the high liquidity of the bank illustrates that the bank is not optimal in using its source of funds to be distributed in the form of credit, the small credit channeled affects the bank's income or the low income of the bank will result in losses and

eventually the bank will potentially experience financial distress. This result is in line with the research of Setiawan et al. (2021), Mariana & Manda (2021) and Ekadjaja et al. (2021).

Credit risk ratio has a positive and significant effect on the probability of financial distress, the greater this ratio, the higher the probability of financial distress. Credit risk ratio is a risk faced by banks as a result of failure to return loans provided by banks to their debtors, failure to return these loans will have an impact on the bank's liquidity ability. In addition, the bank's source of income will decrease, because the bank's main income is from credit interest income and it is known that this source of income can also be used to fulfill obligations related to the bank's operations. So the failure to return the credit given to the debtors will potentially increase the probability of financial distress. The results of this study are in line with research conducted by Buchdadi et al. (2020), Ekadjaja et al. (2021), and Suardika et al. (2023)

Capital ratios that have a negative and significant effect on financial distress are the capital ratio and primary ratio. The results of this study are in line with several previous researchers, namely Azizah & Lismawati (2024), Sadida (2018), Zahronyana & Mahardika (2018), and Buchdadi et al. (2020). While the capital adequacy ratio has a positive and significant effect on financial distress. The results of this study are in line with the research of Purnamandari & Badera (2015), Hayati (2018) and Kareem et al. (2022).

Captal ratio has a negative and significant effect on the probability of financial distress, the greater this ratio, the prediction of financial distress is smaller and vice versa. Capital ratio is a ratio that describes the amount of capital and write-off reserves owned by banks to bear the risk of default on loans provided to their debtors. The greater the formation of reserves carried out by the bank, the more able the bank is to protect failures and the more guaranteed the sustainability of the bank's business, so that the probability of financial distress will decrease.

Primary ratio has a negative and significant effect on the probability of financial distress, the greater this ratio, the prediction of financial distress is smaller and vice versa. Equity to total assets is a ratio that describes the proportion of net worth of assets owned by the bank, the higher the proportion of net worth of bank assets, the smaller the proportion of bank debt. If the proportion of net worth is greater than the proportion of debt on bank assets, this indicates that the bank has more flexibility in its operations and a smaller proportion of debt will have implications for operating costs. The smaller proportion of debt on a bank's assets will reduce interest expense, so the bank's chances of earning profits will increase. Increasing profits will reduce the probability of financial distress.

Capital adequacy ratio is the ratio between capital owned by the bank compared to risk-weighted assets, meaning how much capital the bank is able to bear the risks that will occur on the assets owned by the bank. The smaller the risk of assets owned by the bank, the greater the bank's capital adequacy ratio, so that it is more efficient in the use of its capital and more flexible

in the implementation of bank operational activities. The higher the bank's capital adequacy ratio, the smaller the probability of rural banks experiencing financial distress. However, in this study the capital adequacy ratio has a positive and significant effect on financial distress, the greater this ratio, the greater the probability of BPR experiencing financial distress. However, when the larger capital adequacy ratio does not immediately get good results, the high capital adequacy ratio illustrates that BPR is too cautious in expanding investment in risky productive assets, especially expansion in lending. Small expansion in productive assets that are risky will reduce income, small sources of BPR income will increase the chances of BPR experiencing financial distress.

CONCLUSION

The use of liquidity risk ratio, credit risk ratio, and capital ratio in predicting financial distress based on the Zmijewski (1984) model in binary logit regression analysis has a high prediction accuracy rate of 95.90%. The liquidity risk ratio and credit risk ratio positively and significantly influence the likelihood of financial distress, while the capital ratio shows varied effects; the primary capital ratio has a negative impact, whereas the capital adequacy ratio has a positive impact. These findings suggest that liquidity risk ratio and capital ratio can be utilized to predict whether rural banks will experience financial distress in the following year, providing bank management with time to make financial adjustments to prevent more severe issues. However, due to the limitations of this study, future research should consider incorporating additional ratio proxies such as deposit risk ratio, risk assets ratio, secondary risk ratio, equity to total deposit ratio, loans to assets ratio, capital to assets ratio, non-performing loans ratio, loans to equity ratio, and fixed assets to equity ratio to enhance the prediction of financial distress conditions.

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