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Determinant of Financial Distress in Conventional Rural Banks in Central Java: Before and during Covid-19 Period

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Abstract.
Financial distress refers to a state in which a company is unable to generate sufficient income and has difficulty paying its debt, and this effect can threaten the company's financial condition towards bankruptcy. This study aims to examine the influence of loan-to-deposit ratio, nonperforming loans, and return on assets on financial distress. Additionally, it conducts multigroup testing of these variables in the Covid-19 pandemic period. The population of this study is conventional rural banks in Central Java for the 2019–2020 period. The sample, consisting of 84 observations, was obtained using the purposive sampling method. The data analysis technique employed in this study is Partial Least Squares-Structural Equation Modeling (PLS-SEM), utilizing WarpPLS version 8.0 software. This study shows that loan-to-deposit ratio and nonperforming loans have a positive effect on financial distress, while return on assets has a negative effect on financial distress. Furthermore, the additional analysis shows that there are significant differences between the loan-to-deposit ratio and nonperforming loans on financial distress in the pre-Covid-19 period and during the Covid-19 period. However, there is no significant difference in the effect of return on assets on financial distress in these Covid-19 periods.

Keywords: covid-19, financial distress, loan to deposit ratio, nonperforming loans, return on asset

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1. INTRODUCTION

The Covid-19 pandemic has had an impact on society in terms of politics, social life and the global economy (Haris, 2022), including in Indonesia. These impacts are not only faced by society in general, but also by all companies, including financial institutions such as international and local banks [2]. These impacts caused by the economic decline influenced banking performance, mainly in the intermediary function. The significant effect faced by banks is the occurrence of financial problems known as financial distress.

Financial distress faced by banks can have a more severe impact because of the role of banks as drivers of economic activity that involves public money who are depositors, not investors, so the government is often involved in this situation [3],

particularly in small-scale banks such as rural banks. During the Covid-19 pandemic, rural banks became one of the most affected financial institutions, where credit returns from channeling funds to micro, small, and medium enterprises (MSMEs) and the society affected by the pandemic became delayed [4]. This financial distress condition, shown by the total liquidation of rural banks, contributed to the highest liquidation rate; a total of 103 rural banks were liquidated from 2006 to June 2020 [5].

Financial distress has become a global issue and has received attention from many researchers. Various previous studies related to financial distress in the banking sector indicate several factors that influence financial distress, including financial factors such as credit aspects studied by Africa (2016), Kuncoro & Agustina (2017), Indrajati et al. (2020), Buchdadi et al. (2020), Kosasih et al. (2022), Abdesslem et al. (2022) and Haris et al. (2022); liquidity aspects studied by Africa (2016), Kuncoro & Agustina (2017), Pryangan & Payamta (2020), Gupta & Kashiramka (2020), Haris et al. (2022), and Abdesslem et al. (2022); profitability aspects studied by Kuncoro & Agustina (2017), Indrajati et al. (2020) and Haris et al. (2022).

One of the crucial factors affecting financial distress in the banking sector is a problem with liquidity. Liquidity describes the ability to meet all obligations that must be paid off immediately and in a short time [14]. If a bank cannot fulfill its obligations, it can increase the possibility of financial distress. Another factor related to credit is nonperforming loans, which are used to determine the ability of bank management to manage nonperforming loans provided by banks. In the banking sector, credit risk management is very important to do, according to Haris (2022) which states that the main cause of bank failure and the most visible risk faced by banks is credit risk. Another factor is the return on assets used to measure the company's effectiveness in utilizing its assets [15].

This study attempts to combine the internal liquidity risk factors from the loan to deposit ratio aspect, the credit factor from the nonperforming loans aspect, and the profitability factor from the return on assets aspect, as well as additional testing to determine whether these aspects had significant differences in the period before and during the Covid-19 pandemic.

2. HYPOTHESIS DEVELOPMENT

2.1. Loan to Deposit Ratio on Financial Distress

The loan to deposit ratio is the ratio of loans to deposits used to assess bank liquidity by comparing the bank's total loans to its total deposits for the same period (Kusmayadi,

2017). If the bank lends too much money to customers and is not balanced with existing income, this can reduce income levels. The higher the loan to deposit ratio, the lower the liquidity capacity of the bank, which makes the level of financial stability decline, so that the bank is in a troubled condition [1]. The loan to deposit ratio is too high, reflecting that all public funds collected are channeled into bank credit, so it can disrupt bank liquidity in the event of a withdrawal of funds by a customer, so this has the potential for financial distress [17]. This is in line with the results of research by Africa (2016) which shows that the loan to deposit ratio has a positive effect on financial distress. Based on the arguments that have been described, the hypothesis that is formulated is as follows:

H1: Loan to deposit ratio has a positive effect on financial distress.

2.2. Nonperforming loans on Financial Distress

One of the main activities of banks is to provide credit. Before the credit facility is given to its customers, the bank must conduct a credit assessment before the credit is disbursed. However, there are still opportunities for the risk of bad credit to arise because credit is the biggest asset that has the highest risk [18]. Nonperforming loans are a ratio to check the health of a bank, which refers to nonperforming loans or bad loans [9]. The higher the nonperforming loan, the riskier the quality of bank credit, which causes the number of nonperforming loans to increase because the level of stability decreases, increasing the possibility of a bank in a problematic condition or financial distress [9]. Therefore, the higher the value of bad loans is, the greater the potential for financial distress will be. This is in line with research by Buchdadi et al. (2020), which shows that nonperforming loans have a positive effect on financial distress. Based on the arguments that have been described, the hypotheses that can be formulated are as follows:

H2: Nonperforming loans has a positive effect on financial distress.

2.3. Return on Assets on Financial Distress

Return on assets is a profitability ratio that measures a company's ability to generate profits from the use of all its resources or assets to assess the company's performance and efficiency (Ledhem & Mekidiche, 2020). The higher the return on assets, the more profit is earned, which indicates that the banking system is in good condition or that the level of banking financial health is high [1]. High profits show good prospects for a bank in the future, and this can minimize the risk of financial distress. This is in line with research by Tong & Serrasqueiro (2021) which shows that return on assets has a

negative effect on financial distress. Based on the arguments that have been described, the hypotheses that can be formulated are as follows:

H3: Return on assets has a negative effect on financial distress.

3. METHOD

This research is a causal study which examines factors that are causing a problem, particularly to test the effect of loan to deposit ratio, nonperforming loans and return on assets on financial distress. The sample of this study included 84 observations that were collected based on purposive sampling. The data in this study was secondary data collected from conventional rural banks in Central Java which were published on official website www.ojk.go.id. The criteria of purposive sampling used in this study covers as follows:

Table 1: Purposive Sampling.

Number	Criteria	Amount
1.	Conventional rural banks in Central Java for the 2019-2020 period	181
2.	Conventional rural banks not *Perseroda* in Central Java for the 2019-2020 period	(139)
3.	*Perseroda* conventional rural bank which does not present a complete financial report component	(0)
4.	*Perseroda* conventional rural bank that did not publish financial reports during Covid-19	(0)
The number of samples that meet the criteria		42
Year of observation		2

The analytical technique used in this study was Partial Least Squares (PLS)-Structural Equation Modeling (SEM) using WarpPLS 8.0 software. The model for this study can be described in the equation as follows:

Equation 1.

$FD = \rho 1LDR + \rho 2NPL + \rho 3ROA$

FD denotes financial distress, LDR denotes loan to deposit ratio, NPL denotes non-performing loans and ROA denotes return on assets. Measurement for each variable in this study can be described as follows:

Financial Distress

Financial distress is a condition where a company is unable to generate sufficient income and has difficulty paying its debt, and this effect can threaten the company's

financial condition towards bankruptcy (Liu et al., 2021; Farooq et al., 2022). Financial distress for the banking industry is formulated as below [11]:

$$Z - Score = \frac{(ROAi,t + CARi,t)}{\sigma ROAi}$$

ROAi,t shows the return on assets of bank i in year t, calculated by net profit divided by total assets. CARi, t denotes the capital adequacy ratio, calculated as the value of total equity divided by total assets, and ROAi is the estimated standard deviation of return on assets during the 2019–2020 period. A high score indicates that the bank is more stable, so it is less likely to experience default or financial distress (Abdesslem et al., 2022). Research by Abdesslem et al. (2022) used the -z-score to measure the probability of bank default for easier interpretation.

Loan to Deposit Ratio

The loan to deposit ratio is the ratio of loans to deposits used to assess bank liquidity by comparing the bank's total loans to its total deposits for the same period (Kusmayadi, 2017). Loan to deposit ratio measured as below:

$$LDR = \frac{The\ amount\ of\ credit\ given}{Third - party\ funds} x100\%$$

Nonperforming Loans

Nonperforming loans are a ratio to check the health of a bank, which refers to nonperforming loans or bad loans [9]. Nonperforming loans measured as below:

$$NPL = \frac{Amount\ of\ bad\ loan}{Total\ of\ credits} x100\%$$

Return on Assets

Return on assets is a profitability ratio that measures a company's ability to generate profits from the use of all its resources or assets to assess the company's performance and efficiency (Ledhem & Mekidiche, 2020). Return on assets measured as below:

$$ROA = \frac{Net\ income}{Total\ assets}$$

4. RESULTS AND DISCUSSION

Based on the path diagram in Figure 1 and summarized in Table 2, loan to deposit ratio has a positive and significant effect on financial distress. It can be seen from the path coefficient of the loan to deposit variable (LDR) which is 0.281 positive with P = 0.003 < 0.05, so hypothesis 1 (H1) is accepted. The loan to deposit ratio affects financial distress.

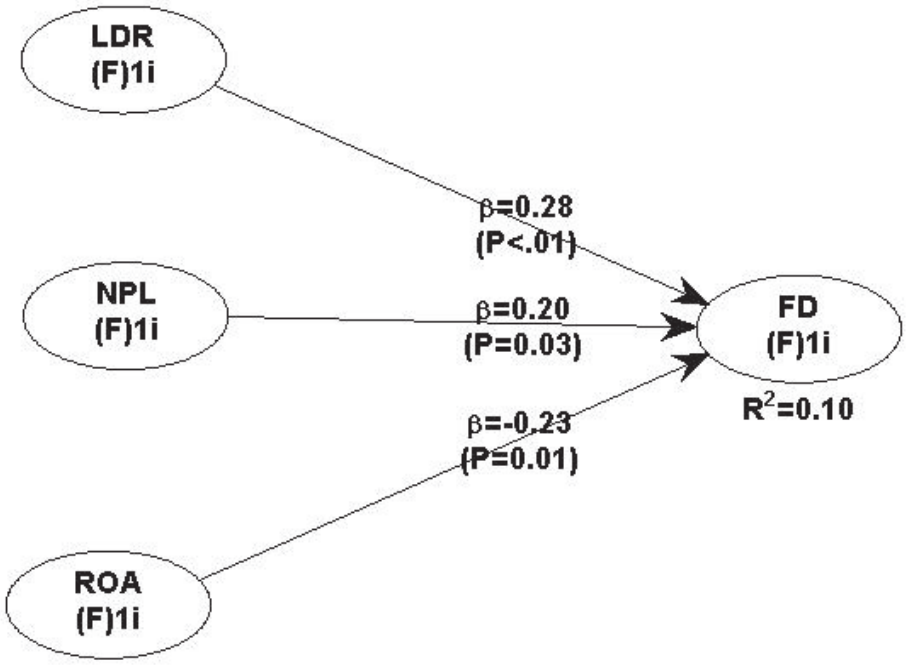

Figure 1: Path Diagram.

TABLE 2: Path Coefficients and P-Values.

Variables	Path Coefficients	P-value	Rule of Thumb	Notes
LDR	0,281	0,003	P < 0,05	Accepted
NPL	0,202	0,026	P < 0,05	Accepted
ROA	-0,230	0,013	P < 0,05	Accepted

This significant effect can be explained by the fact that a higher loan to deposit ratio shows a lower or worse liquidity capacity of the bank, which makes the level of financial stability decrease, so that the bank is in a troubled condition, as research by Haris et al. (2022).

Nonperforming loans variable (NPL) which is 0.202 positive with P = 0.026 < 0.05, so hypothesis 2 (H2) is accepted. Nonperforming loans affect financial distress. This significant effect can be explained by the fact that the higher the nonperforming loan, the higher the risk of bank credit quality will be, which causes the number of nonperforming loans to increase because the level of stability declines, so the possibility of a bank in a problematic condition or financial distress increases, as research by Buchdadi et al. (2020).

Return on assets variable (ROA) which is -0.230 negative with P = 0.013 < 0.05, so hypothesis 3 (H3) is accepted. Return on assets affects financial distress. This significant

effect can be explained by the fact that the higher return on assets shows that the banking system is in good condition so that companies are not threatened with financial distress, as research by Tong & Serrasqueiro (2021).

Table 3: Additional Multigroup Test.

Loan to Deposit Ratio		
Outputs: Pooled standard error method		
Tm	-2.6797	(T value for multi-group difference effect)
Pm	0.0045	(P value for multi-group difference effect, one-tailed)
Pm'	0.0089	(P value for multi-group difference effect, two-tailed)
Nonperforming loans		
Outputs: Pooled standard error method		
Tm	-2.0051	(T value for multi-group difference effect)
Pm	0.0241	(P value for multi-group difference effect, one-tailed)
Pm'	0.0482	(P value for multi-group difference effect, two-tailed)
Return on Assets		
Outputs: Pooled standard error method		
Tm	1.0536	(T value for multi-group difference effect)
Pm	0.1476	(P value for multi-group difference effect, one-tailed)
Pm'	0.2952	(P value for multi-group difference effect, two-tailed)

Multigroup analysis in this study was done by comparing the differences in path coefficients and analyzing significance using the pooled standard error method developed by Kock (2014). Based on the calculation table for the pooled standard error method, a statistically significant P value is obtained where the significance is less than 5% (0.05), meaning that there is a significant difference in the path coefficients of the loan to deposit ratio and nonperforming loans to financial distress for the period before Covid-19 (2019) and during Covid-19 (2020), but there was no significant difference in the return on assets path coefficient in the period before Covid-19 (2019) and during Covid-19 (2020).

5. CONCLUSIONS

Covid-19 pandemic has become an unprecedented shock to the global economy that has affected all aspects, not only in the real economy sector but also the financial

sector (Brania & Gurgul, 2021). The results of this study indicate that in the banking sector, especially rural banks, the factors of loan to deposit ratio, nonperforming loans and return on assets affect the possibility of financial distress. The higher the loan to deposit ratio is, the higher the probability of financial distress will be. The higher the nonperforming loan is, the higher the probability of financial distress will be. The lower the profitability, the higher the probability of financial distress will be. Furthermore, additional testing of the multigroup analysis during the Covid-19 period shows that there is a significant difference in the influence of loan to deposit ratio and nonperforming loans, where the effect of this relationship is more significant in the Covid-19 period, but there is no significant difference in the influence of return on assets in the pe-Covid-19 period and during Covid-19 period. Theoretically, these findings contribute to the financial literature, mainly in rural banking. In practice, this study shows the importance of managing liquidity risk, credit risk and optimizing profitability in conventional rural banks to avoid the probability of financial distress.

References

[1] Haris A, Ghozali I, Najmudin N. Indicators of financial distress condition in Indonesian banking industry. Accounting. 2022;8(1):27–36.

[2] Indrawati SM. Merekam Pandemi Covid-19 dan Memahami Kerja Keras Pengawal APBN. Jakarta; 2021.

[3] Rastogi S, Kanoujiya J. Corporate disclosures and financial distress in banks in India: the moderating role of competition. Asian Rev Account. 2022;30(5):691–712.

[4] Otoritas Jasa Keuangan, “Peraturan OJK Nomor 34 Tahun 2020,” 2020.

[5] R. Anggreani, “Astaga! Ada 103 Bank Bangkrut sejak 2006 hingga 2020,” Lembaga Penjamin Simpanan.

[6] Africa LA. Financial distress for bankruptcy early warning by the risk analysis on go-public banks in Indonesia. Journal of Economics, Business & Accountancy Ventura. 2016;19(2):259–70.

[7] Kuncoro S, Agustina L. Factors to Predict the Financial Distress Condition of the Banking Listed in The Indonesia Stock Exchange. Accounting Analysis Journal. 2017;6(1):39–47.

[8] Indrajati V, Yuvita Y, Putri NA, Rismawati FO, Puspitasari DM. Determinants of financial fistress rural Bank in Indonesia: A logit approach. Solid State Technol. 2020;63(3):5069–75.

[9] Buchdadi AD, Nguyen XT, Putra FR, Dalimunthe S. The effect of credit risk and capital adequacy on financial distress in rural banks. Accounting. 2020;6(6):967–74.

[10] T. W. Kosasih, N. H. Pramono, and F. Azmi, "Analisis Faktor Internal Dan Eksternal Yang Mempengaruhi Financial Distress Bank Pengkreditan Rakyat (Bpr) Di Indonesia Pada Masa Pandemi Covid 19," *Jurnal Akuntansi Dan Pajak*, vol. 23, no. 01, 2022.

[11] Ben Abdesslem R, Chkir I, Dabbou H. Is managerial ability a moderator? The effect of credit risk and liquidity risk on the likelihood of bank default. Int Rev Financ Anal. 2022;80:102044.

[12] W. Pryangan and Payamta, "Pengaruh Rasio CAMEL Terhadap Potensi Financial Distress," *Jurnal ASET (Akuntansi Riset)*, vol. 12, no. 2, pp. 332–345, 2020.

[13] Gupta J, Kashiramka S. Financial stability of banks in India: does liquidity creation matter? Pac Basin Finance J. 2020;64:101439.

[14] Mulyati B, Mahmud TA. ANALISIS RASIO KEUANGAN UNTUK MENGUKUR PREDIKSI FINANCIAL DISTRESS (Studi Kasus pada Salah Satu BUMD di Provinsi Banten). Jurnal Ilmiah Akuntansi Universitas Pamulang. 2020;8(2):111.

[15] Rahmayanti S, Hadromi U. "Analisis Financial Distress Pada Perusahaan Manufaktur Yang Terdaftar di Bursa Efek Indonesia Analysis of Financial Distress In Companies Manufacture Listed Indonesia Stock Exchange," *Jurnal Akuntansi dan*. Ekonomika (Nis). 2017;7(1):53–63.

[16] Kusmayadi D. Penilaian Kesehatan Bank Perkreditan Rakyat Dengan Faktor Camel. Jurnal Akuntansi. 2017;12(1):1–19.

[17] Winarti L. Pengaruh Rasio Camel Terhadap Kondisi Financial Distress Pada Perbankan Syariah. 2010;12(36):332–45.

[18] Hermuningsih S, Sari PP, Rahmawati AD. the Influence of Third-Party Funds, Non-Performing Loans (Npl) on Credit Distribution With Profitability As Intervening Variable in Commercial Banks [IJEBAR]. International Journal of Economics, Business and Accounting Research. 2020;4(02):40–50.

[19] Ledhem MA, Mekidiche M. Economic growth and financial performance of Islamic banks: a CAMELS approach. Islam Econ Stud. 2020;28(1):47–62.

[20] Tong Y, Serrasqueiro Z. Predictions of failure and financial distress: A study on portuguese high and medium-high technology small and midsized enterprises. J Int Stud. 2021;14(2):9–25.

[21] Liu B, Ju T, Bai M, Yu CF. Imitative innovation and financial distress risk: the moderating role of executive foreign experience. Int Rev Econ Finance. 2021;71:526–48.

[22] Farooq M, Noor A, Qureshi SF. The impact of corporate social responsibility on financial distress: empirical evidence. Soc Responsib J. 2022;18(5):1050–67.

[23] Kock N. Advanced Mediating Effects Tests, Multi-Group Analyses, and Measurement Model Assessments in PLS-Based SEM. Int J e-Collaboration. 2014;10(1):1–13.

[24] Brania K, Gurgul H. Contagion effects on capital and forex markets around GFC and covid-19 crises. A comparative study. Operations Research and Decisions. 2021;31(2):59–92.