

How Do Financial Performance and Firm Size Influence Financial Distress? A Study of Digital Banks and Traditional Banks Offering Digital Services (2018-2023)

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Financial distress is a decline in financial condition before bankruptcy, one sign of which is negative earnings for two consecutive years. If not handled immediately, this can lead to bankruptcy. This study aims to analyze the effect of independent variables such as Return on Assets (ROA), Loan to Deposit Ratio (LDR), Non-Performing Loan (NPL), Operating Expenses to Operating Income (BOPO), Capital Adequacy Ratio (CAR), and firm size on financial distress in commercial banks that provide digital services and digital banks in the period 2018-2023. The research method used is quantitative method with logistic regression analysis, and the sample is selected by purposive sampling. A total of 66 samples from 11 digital bank companies and commercial banks registered with OJK for the period 2018-2023 were analyzed. The results showed that simultaneously, the variables ROA, CAR, NPL, LDR, BOPO, and company size had a significant effect on financial distress. Partially, only ROA and NPL have a significant effect, while CAR, LDR, BOPO, and company size have no significant effect on financial distress.

Keywords: Financial Distress, digital banks, logistic regression.

1. Introduction

Companies stand with the aim of getting the maximum profit or profit possible. Optimal profits can make the company able to budget for operational costs and company development for the growth of an efficient company. The same thing is also stated by (Natasya & Kristanti, 2019) that companies are established to run their business with the aim

of making a profit. In addition, companies must be able to maintain stable finances and compete with other companies. Under these conditions, a company cannot survive and compete to show good financial performance, which will cause the company to indicate financial difficulties or Financial Distress (Galijot & Mahardika, 2019).

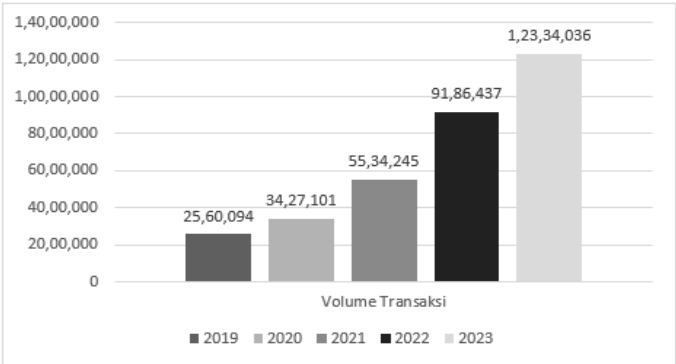
Table 1 Names of Digital Banks and Commercial Banks with Digital Services

No.	Bank Name	Description
1	PT Bank SeaBank Indonesia (SeaBank)	Digital Bank
2	PT Bank Digital Bca (BCA Digital)	Digital Bank
3	PT Allo Bank Indonesia, Tbk.	Digital Bank
4	PT Bank Jago, Tbk.	Digital Bank
5	PT Bank Neo Commerce, Tbk	Digital Bank
6	PT KB Bukopin, Tbk.	Commercial Banks with Digital Services
7	PT Bank JTrust Indonesia, Tbk.	Commercial Banks with Digital Services
8	PT Bank IBK Indonesia, Tbk.	Commercial Banks with Digital Services
9	PT Bank QNB Indonesia, Tbk	Commercial Banks with Digital Services
10	Bank of Indonesia, Tbk	Commercial Banks with Digital Services
11	PT Bank Victoria International, Tbk.	Commercial Banks with Digital Services

Source: www.ojk.go.id (2024)

Table 1 is Commercial Banks that have digital services in accordance with POJK Number 12/POJK.03/2018 related to the Implementation of Digital Banking Services by Commercial Banks and Digital Banks in accordance with POJK Number.12/POJK.03/2021 Chapter IV related to Digital Banks. The difference between the 2 (Two) POJK is in Bank operations, on the operational side where Digital Banks in accordance with POJK are only allowed 1 (one) head office or use limited physical offices, while for Commercial Banks that have digital services there are no restrictions on opening branch offices or sub-branches which must be reported to OJK. This was similarly explained by Partner at Makarim & Taira. S, Maria Sagrado with that there is a difference between Digital Banking and Digital Bank which is in accordance with what is described that Digital Banking Services can be provided by the Bank itself or in collaboration with bank partners of Financial Services Institutions or Non-Financial Institutions while Digital Banks provide and carry out business activities through electronic channels without physical offices other than 1 (one) Head Office and limited Physical Offices (Hukum Online, 2023).

Figure 1 E-Channel Transaction Volume 2019-2023



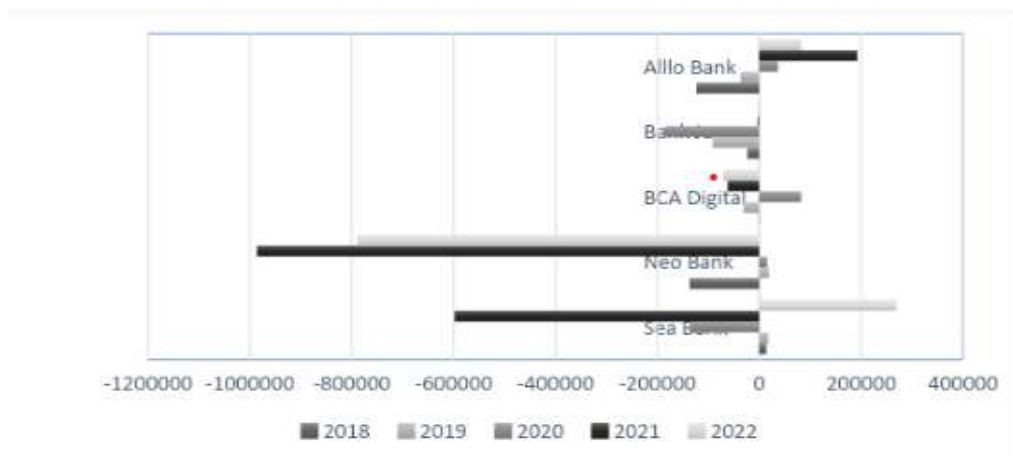
Source: Bank Indonesia Report (2024)

In Figure 1 related to Mobile Banking Transaction Volume from 2019 to 2023, there was a significant increase, the increase from 2019 to 2020 was 33.8%, in 2020 to 2021 there was an increase of 61.48%, in 2021 to 2022 there was an increase of 65.9% and in 2022 to 2023 there was an increase of 34.2%. which has Digital Bank BTPN Bank down 24% in 2023. The most drastic increase occurred in 2021 - 2022, namely 65.9%, which is due to the Covid-19 pandemic which requires customers to access mobile banking or digital services facilitated by banks, this is reinforced by research from Rohmawati, Kuntadi and Pramukty in the Influence of E-Wallet, Mobile Banking, and E-Money on Post-Covid-19 Digital Business Transactions in 2023 which explains that mobile banking affects Post-Covid-19 Digital Business transactions. The same thing was stated by the Assistant Governor of the Head of the BI Payment System Policy Department at kontan.co.id in 2021 that based on Bank Indonesia's records the volume of e-commerce transactions reached 548 million transactions with a nominal value of IDR 88 trillion in March 2021 and the Director of PT Bank CIMB Niaga stated that mobile banking transactions through OCTO Mobile grew 62% yoy with a volume growth of 52% yoy in March 2021 also stated that transactions with the largest volume came from transfers, followed by bill payments and prepaid reloads.

Banking, as a type of company, is defined in the Law of the Republic of Indonesia Article 10 of 1998 as a business entity that collects funds from the public and distributes them in the form of credit to improve the welfare of the community. Banks also act as financial intermediaries, connecting owners and users of funds, both at the macro and micro levels (Arinta, 2016). In line with the rapid development of digitalization, including in the banking industry, driving the 4.0 industrial revolution, which involves smart technology, has changed and will continue to affect people's lifestyles in the future (Maulidya & Afifah, 2021).

In the digital era, many banks are trying to increase fee-based income as a strategy to achieve more stable income. This income does not depend on fluctuations in market interest rates, does not require large capital, and encourages banks to be more creative in offering additional products and services according to customer needs (Niu & Hasan, 2019). Platt & Platt (2002) state that if a company's EBITDA, EBIT, and net income decline for two consecutive years, this is an indication of financial problems. Similar findings were also put forward by Almilia & Kristijadi (2003), who stated that financial difficulties can be seen when companies experience negative net income for several consecutive years. However, in some cases, as seen in the data in Figure 2. related to mobile banking transactions, the increase in the number of transactions is not always directly proportional to the profit earned by digital banks. This suggests that while digital transactions are growing, other factors may be causing a decline in profits, which could be an early sign of financial distress.

Figure 2. Digital Bank Net Profit 2018-2022



Source: Company Financial Statements (data processed by the author, 2024)

In Figure 1, there are 5 (five) companies that have negative profits for two consecutive years, namely Sea Bank, Neo Bank, BCA Digital, Bank Jago and Allo Bank, where the highest negative profit was achieved by Neo Bank in 2021, namely (IDR 986.2 billion) and this continues until 2021 amounting to (IDR 789.059 billion). The negative profit was achieved by Sea bank in 2020 amounting to (IDR 136,500 billion) and this continued until 2021 amounting to (IDR 598,100 billion). BCA Digital bank in 2021 amounted to (IDR 62,157 billion) and is still negative in 2022 amounting to (IDR 71,063). Bank Jago also experienced negative profits for five consecutive years in 2018 - 2022. Finally, Allo Bank achieved negative profit in 2018 - 2019. According to Hautauruk on Kontan.co.id in 2021 stated that based on information from the President Director of Bank Neo Commerce, Tjandra Gunawan, this negative profit was due to BNC's Operating Expenses increasing by 245.6% to IDR 572 Billion in September 2021 until 2022 NeoBank is still experiencing losses and has the second largest negative profit of IDR 789 Billion.

Financial Distress affects the company's financial system and the organization as a whole, causing loss of human resources and liquidation (Kristanti, 2019). Financial Distress can have an impact on investors and creditors to invest. In this case, predicting Financial Distress needs to be done so that the possibility of bankruptcy can be detected early and company management can get information to make the right decisions to anticipate the conditions of bankruptcy. Financial Distress conditions are not only felt by trading companies, but instead service companies including financial services such as banking companies also have the opportunity to experience Financial Distress conditions if they cannot maintain their financial stability (Kristanti et al., 2016).

Previous research on financial distress on Digital Banks still does not exist, while previous research related to Financial Distress in Commercial Banks was conducted by Ferdiansyah & Widyarti (2022) with the title Analysis of CAMEL Ratio on Financial Distress Banking Companies in Indonesia with independent variables, namely CAR (Capital Adequacy Ratio), NPL Ratio (Non-Performing Loan), BOPO Ratio (Operating Costs to Operating Income),

ROA (Return On Assets) and LDR (Loan to Deposit Ratio). Further research conducted by Ginting & Mawardi (2021) with the title Analysis of the Effect of Camel Ratio and Firm Size on Financial Distress in Banking Companies in Indonesia, with independent variables namely CAR, BOPO, NPL, ROA, LDR and Firm Size. Other research according to (Kristanti & Pancawitri, 2024) that overall CAR, BOPO, NPL, LDR, and ROA simultaneously affect financial distress, provides important insights for financial risk management in the banking sector.

Financial distress must be detected as early as possible to save the company from bankruptcy. Analysis of strong predictive ability in providing early warnings about financial distress conditions, thus helping companies to take preventive steps to restore financial stability (Alamsyah et al., 2021). One indicator to determine the company in distress is financial ratios (Kristanti, 2019). Financial ratios are regulated in the regulation of the Circular Letter of the Financial Services Authority of the Republic of Indonesia Number 9 / SEOJK.03 / 2020 concerning Transparency and Publication of Conventional Commercial Bank Reports.

Return On Assets (ROA) ratio is a ratio used to assess the ability of bank management to generate profits or profits from the average total assets owned, the higher the ROA, the higher the occurrence of financial difficulties (Kusdiana, 2014). Research conducted by Chou et al. (2023) shows that the ROA ratio has a significant effect, this is different from the research conducted by Holili et al. (2021) that the ROA ratio has no significant effect.

Capital Adequacy Ratio (CAR) is a bank performance ratio to measure the adequacy of capital owned by the bank to support assets that invite or generate risk, such as loans (Dendawijaya, 2009). Research conducted by Mahariyani et al. (2020) and Ferdiansyah & Widyarti (2022) state that CAR has no significant effect on Financial Distress, this is different from the results of research by Suardika et al. (2023) states that CAR has an insignificant effect on Financial Distress.

Non Performing Loan (NPL) is a loan that is past due or has exceeded the time limit (Iskandar et al., 2023). This ratio explains the ability of the company or bank management to manage non-performing loans provided by the bank. Credit that has been given by the company to the debtor is required to monitor the use of credit and the ability and compliance of the debtor in repaying his obligations. Research conducted by Suardika et al. (Suardika et al., 2023) shows that the NPL ratio has a significant effect on Financial Distress. This is different from the research conducted by Ferdiansyah & Widyarti (Ferdiansyah & Widyarti, 2022) which states that the NPL Ratio has no significant effect on Financial Distress.

The operating cost ratio is used to measure the level of efficiency and ability of banks in conducting their operations (Dendawijaya, 2009). BI Circular Letter No. 3/30 / DPNP dated December 14, 2001 in which the BOPO ratio is measured from the ratio between operating costs to operating income. The higher the BOPO ratio, the more it indicates that the company cannot minimize costs and cannot ensure the efficiency of its operations so that the risk of financial difficulties is higher. Research conducted by Ginting & Mawardi (Ginting & Mawardi, 2021) that the BOPO ratio has a significant effect on Financial Distress, this is different from the research conducted by Ferdiansyah & Widyarti (Ferdiansyah & Widyarti, 2022) that the BOPO ratio has no significant effect on Financial Distress.

Loan to Deposit Ratio (LDR) is a ratio used to assess the smoothness or liquidity of a bank by dividing the amount of credit to be provided by the Bank to third parties to assess the liquidity of a Bank (Herdinigtas & Almilial, 2006). The higher the LDR, the lower the company's liquidity capability so that the occurrence of financial difficulties or financial distress will be greater. Research conducted by Suardika et al. (Suardika et al., 2023) shows that LDR has a significant effect on Financial Distress, this is different from the research conducted by Ginting & Mawardi (Ginting & Mawardi, 2021) which shows that LDR has no significant effect on Financial Distress.

Firm Size is a measure that describes the amount of total assets owned by the company and indicates that the company has reached the maturity stage because at this stage the company's cash flow is positive and is considered to have good prospects in a long enough period of time (Sopian & Rahayu, 2017). Companies with large total assets indicate that the company is able to meet its debts in the future and will minimize financial difficulties (Financial Distress) (Hakim et al., 2021). Research conducted by Ginting & Mawardi (Ginting & Mawardi, 2021) shows that Firm Size has a significant effect and this is inversely proportional to research conducted by Nuranto & Ardiansari (2017) which has no significant effect.

The ratio indicators that the author has explained above are inconsistent with previous research. Previous research whose time span was less than 5 (five) years which is still relevant for further research with a different scope and variable updates. With this, the author will continue more thorough research with the title "Analysis of the Effect of Financial Performance and Firm Size on Financial Distress (Study on Digital Bank Companies and Commercial Banks that have Digital Services Registered with the Financial Services Authority for the Period 2018-2023)"

2. RESEARCH METHODS

This research uses quantitative methods that utilize numerical data. Quantitative research methods are based on the philosophy of positivism and are used to observe certain populations or samples. Data collection in this method is carried out with research instruments, and quantitative data analysis aims to test predetermined hypotheses (Sugiyono, 2017, p. 8). The author chose descriptive and verification types of research. Descriptive research is used to identify independent variables without making a relationship or correlation between the observed variables (Sugiyono, 2017). This study uses secondary data obtained from the financial statements of digital bank companies and commercial banks that use digital services and are registered with the Financial Services Authority (OJK) in the 2018-2023 period. The population in this study were these banks. Data collection techniques were carried out through literature and documentation studies. The data that has been collected is then analyzed to answer research questions and test hypotheses. Based on the theory and research framework previously described, the research hypothesis can be formulated as follows:

H1 : ROA ratio, CAR, NPL, LDR, BOPO and Firm Size simultaneously affect Financial Distress.

- H2 : ROA ratio has a significant effect on Financial Distress.
H3 : CAR ratio has a significant effect on Financial Distress.
H4 : NPL ratio has a significant effect on Financial Distress.
H5 : LDR ratio has a significant effect on Financial Distress.
H6 : BOPO ratio has a significant effect on Financial Distress.
H7 : Firm Size has a significant effect on Financial Distress.

3. RESULTS AND DISCUSSION

RESULTS

Descriptive Statistical Analysis

Descriptive statistics are a type of statistics that aims to analyze data by explaining or describing the data that has been collected, both in general form and as a whole (Sugiyono, 2018: 147). This approach can be applied in research that only aims to describe sample data without making conclusions about the population, with the results presented in the form of mean, standard deviation, variance, maximum, minimum, sum, range, kurtosis, and skewness (Ghozali, 2011: 19), as follows:

Table 1.Results of Descriptive Statistical Testing

	N	Minimum	Maximum	Mean	Std. Deviation
Financial Distress	66	0	1	0.32	0.469
ROA	66	-0.172	0.041	-0.014	0.0345
CAR	66	0.089	15.04	0.707	1.889
NPL	66	0.000	0.1254	0.0366	0.0295
LDR	66	0.000	1.717	0.888	0.3111
BOPO	66	0.520	99.70	5.614	15.620
SIZE	66	27.222	32.238	30.04	1.138
Valid N (listwise)	66				

Source: SPSS output 29 (2024)

In table 1. shows the results of descriptive statistics in Digital Bank companies and Commercial Banks that have Digital services in Indonesia. The ROA variable has a mean or average value of -0.14 which is smaller than the standard deviation which has a value of 0.345, this shows that the data on the ROA variable in this study varies or is not clustered. The ROA variable produces a minimum value of -0.172 which was obtained by the Sea Bank company in 2020. While the maximum value is 0.041 Allo Bank in 2021. The CAR variable has a mean or average value of 0.707, which is smaller than the standard deviation which has a value of 0.469, this shows that the data on the CAR variable in this study varies or is not grouped. The CAR variable has a minimum value of 0.089, which this data belongs to Allo Bank in 2018. The maximum value of the CAR variable is 15.04 which was obtained from BCA Digital Bank in 2020. Furthermore, the NPL variable has a mean or average value of 0.036 which is greater than the standard deviation which has a value of 0.029, this indicates that the variables in the data do not vary or group. The NPL variable has a minimum value of 0.00 owned by Allo Bank, BCA Digital Bank, Bank Jago and Bank QNB

Indonesia. The maximum value in the NPL ratio is 0.036 for the Sea Bank company in 2023. The LDR variable has a mean or average value of 0.888 which is greater than the standard deviation which has a value of 0.3111, this indicates that the data does not vary or group. The maximum value in the LDR Ratio is 0.00 owned by the BCA Digital Bank company in 2020 and the maximum value is 1.71 owned by the QNB Indonesia Bank company. The BOPO variable has a mean or average value of 5.614 which is smaller than the standard deviation which has a value of 15.620, this indicates that the data on the BOPO variable in this study varies or is not grouped. The minimum value in the BOPO Ratio is 0.520, namely the Allo Bank company in 2021 and the maximum value of 99.70 is for the Sea Bank company in 2020. The Firm Size variable has a mean or average value of 30.04, which is greater than the standard deviation which has a value of 1.138, this indicates that the variables in the data do not vary or group. The minimum value on the firm size variable of 27.22 is Bank Jago in 2020, then the maximum value of 32.23 is Bank KB Bukopin in 2019.

Financial Distress

Financial distress in this study is measured using a nominal scale, with positive net income given a dummy value indicator of 0 and negative net income given a dummy value of 1.

Table 2 Financial Distress Test Results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non- Distress	45	68.2	68.2	68.2
	Distress	21	31.8	31.8	100.0
	Total	66	100.0	100.0	

Source: SPSS output 29 (2024)

In table 2. explains that there are companies experiencing financial distress and companies that are not experiencing financial distress, there are 21 companies experiencing distress consisting of Allo Bank in 2018 - 2019, then Bank Jago in 2018 - 2020, Neo Bank in 2021 - 2023, Sea Bank in 2019 - 2021, BCA digital in 2021-2022, Bank KB Bukopin in 2020-2023, Jtrust Bank in 2020-2021, IBK Bank in 2018-2020, QNB Bank in 2020-2022, Bank of India Indonesia in 2020-2021 and then Bank Victoria in 2019-2021 because it has 2 consecutive years of negative profit of 31.8% and the rest are years where the company does not experience 2 consecutive years of negative profits.

Overall Model Test

This overall model test is referred to as the first stage or overall model fit test, which aims to determine whether the designed or hypothesized model is in accordance with the data or not. This test involves comparing the value between -2Log likelihood (-2LogL) at the initial stage (Block number = 0) and the -2Log likelihood (-2LogL) value at the final stage (Block number = 1). In addition, this test also aims to evaluate whether the addition of independent variables to the model can significantly improve data fit (Ghozali, 2011: 332), as follows:

Table 3 Overall Model Fit

-2LogL Block Number = 0	Has a value of 82.565
-2LogL Block Number = 1	Has a value of 53,794

Source: SPSS output 29 (2024)

In table 3. explains the results on the overall model fit in Digital Bank companies and *Nanotechnology Perceptions* Vol. 20 No.6 (2024)

Commercial Banks that have Digital Services with an initial value of -2Log likelihood (Block Number = 1) of 53,794 smaller than the 2Log likelihood (Block Number = 0) of 82,565 with a decrease of 28,771. These results can be concluded that the fit model in this research data, namely the variables ROA, CAR, LDR, NPL, BOPO and Size can significantly improve the fit model.

Regression Model Fit Test

The stage of testing the feasibility of the regression model, namely the Hosmer-Lemeshow Test, is one of the stages in evaluating the regression model which measures how well the model is able to predict the value of the dependent variable based on the independent variables. The model acceptance criteria are determined by the statistical significance value. If the significance value is greater than 0.05, then the model is considered to fit the data, meaning that there is no significant difference between the predicted value of the model and the actual value of the data. Conversely, if the significance value is smaller than 0.05, then the model is considered unsuitable, because there is a significant difference between the predicted value and the actual value, so the model cannot be used to predict new data (Ghozali, 2011: 333). The following are the results of feasibility testing on the regression model:

Table 4. Hosmer and Lameshow Test

Step	Chi-Square	df	Sig.
1	9.535	7	0.217

Source: SPSS output 29 (2024)

Table 4. explains that at this stage the Digital Bank companies and Commercial Banks that have Digital Services in Indonesia have a Chi-Square result of 9.535 with a significance of 0.217, which is greater than 0.05. So it can be concluded, the hypothesis can be accepted or it can be said that it is fit or cannot be rejected and is suitable for analysis at the next stage. This is because there is no difference between the prediction results and the actual reality or it can be said that the classification is correct.

Determination Coefficient Test

The next test is using a summary model, where the researcher will calculate the Nagelkerke's R Square value to see how strong the influence of the independent variable is on the dependent variable in this study. The higher the value, the better the model used to explain the relationship between these variables. With the following results:

Table 5. Model Summary

Step	-2Log likelihood	Cox & Snell R Square	Negelkerke R Square
1	53.794	0.353	0.495

Source: SPSS output 29 (2024)

Table 5. explains that the results in testing for Negelkerke R Square in Digital Bank companies and Commercial Banks that have Digital Services in Indonesia are 49.5% which explains that independent variables including ROA, CAR, LDR, NPL, Bopo and Firm Size ratios can cover or describe variations from the dependent variable, namely Financial Distress and the remaining 50.5% is influenced by external factors from the variables used in

this study.

Simultaneous Significance Test

The Omnibus Test of Model Coefficients analysis aims to test the null hypothesis that all independent variables, namely ROA, CAR, LDR, NPL, BOPO and Size ratios simultaneously have no influence on the dependent variable. If the significance value is less than 0.05, the null hypothesis is rejected, which indicates the simultaneous influence of all independent variables on the dependent variable. Conversely, if the significance value is more than 0.05, the null hypothesis is accepted, which means there is insufficient evidence to state that the independent variables jointly affect the dependent variable (Ghozali, 2011: 98). The following is a simultaneous significance test in this study:

Table 6. Omnibus Test of Model Coefficients

		Chi-Square	df	Sig.
Step 1	Step	28.771	6	0.000
	Block	28.771	6	0.000
	Model	28.771	6	0.000

Source: SPSS output 29 (2024)

In table 6. explains the simultaneous significance test (Omnibus Test of Model Coefficients) on Digital Bank companies and Commercial Banks that have Digital Services in Indonesia with a chi-square of 28,771 with a degree of freedom (df) of 6 and a significance level showing 0.000 (p-value <0.05). This, concludes that the H0 hypothesis is rejected or Ha is accepted simultaneously that the 6 (six) Independent variables in this study on financial distress as the dependent variable.

Partial Significance Test

Partial significance testing in this study aims to determine how the influence of each independent variable on the dependent variable. This test uses the regression coefficient by comparing the significance value (α) of 5% or 0.05. The following are the research results at the partial significance test stage:

Table 7. Variables in The Equation

Step 1a		B	S.E.	Wald	Df	Sig.	Exp(B)	Lower	95% C.I for Exp (B)
	ROA	-52.51	14.74	12.69	1	0.000	0.000	0.000	0.000
	CAR	-0.096	0.552	0.030	1	0.862	0.908	0.308	2.679
	NPL	26.15	13.16	3.94	1	0.047	227957232875.29	1.426	36451542027110350 000000.00 0
	LDR	-1.217	1.537	0.626	1	0.429	0.296	0.015	6.026
	BOPO	-0.037	0.046	0.640	1	0.424	0.964	0.880	1.055
	SIZE	0.105	0.310	0.115	1	0.735	1.111	0.605	2.038
	Constant	-4.693	9.689	0.235	1	62.8	0.009		

Source: SPSS output 29 (2024)

Table 4.7 displays the results of Digital Bank companies and Commercial Banks that have Digital Services in Indonesia using the logistic regression method, with the formula:

$$\text{LnFD1-FD} = (4.693) + (52.51) + (0.096) + 26.15 + (1.217) + (0.037) + 0.105$$

The logistic regression equation in this study mentioned above can provide an explanation
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that the ROA variable (X1) has a significance of 0.000 which is smaller than the 5% significance level (α). This means that H0,1 is rejected or Ha,1 is accepted. In this case, it shows that the ROA variable has a significant effect on financial distress.

The CAR (X2) variable has a significance of 0.862 which is greater than the 5% significance level (α). This means that H0,2 is accepted or Ha,2 is rejected. In this case, it shows that the CAR variable has no significant effect on financial distress.

The NPL variable (X3) has a significance of 0.047 which is smaller than the significance level (α) of 5%. This means that H0,3 is rejected or Ha,3 is accepted. In this case, it shows that the NPL variable has a significant effect on financial distress.

The LDR variable (X4) has a significance of 0.429 which is greater than the 5% significance level (α). This means that H0,4 is accepted or Ha,4 is rejected. In this case, it shows that the LDR variable has no significant effect on financial distress.

The BOPO variable (X5) has a significance of 0.424 which is greater than the 5% significance level (α). This means that H0,5 is accepted or Ha,5 is rejected. In this case, it shows that the BOPO variable has no significant effect on financial distress.

The SIZE variable (X6) has a significance of 0.735 which is greater than the 5% significance level (α). This means that H0,6 is accepted or Ha,6 is rejected. In this case, it shows that the Size variable has no significant effect on financial distress.

4. DISCUSSION

Effect of ROA Ratio on Financial Distress

The results in this study indicate that the ROA ratio in Digital Bank Companies and Commercial Banks that have Digital Services in Indonesia has a negative and significant effect on the possibility of financial distress. It can be interpreted that the lower the ROA ratio, the more likely the company will experience financial distress. An identical low ROA ratio indicates that the company's profits are relatively small, if the company is unable to generate sufficient profits, then the company may not have sufficient resources to finance operations, pay debts, or meet other obligations. This in turn increases the risk of financial distress. This is evidenced by the lowest ROA owned by the Seabank company of -0.17 where the seabank company's profit is negative in 2022, the second lowest owned by Bank Jago of -0.92 with negative profits in 2019 and the third lowest obtained by Bank QNB Indonesia of -0.08 with negative profits in 2021.

The results of research on this variable are in line with Herdinigtyas and Almalia (2006), Wijaya and Melly (2024) which state that ROA ratio has a negative and significant effect on financial distress.

Effect of CAR Ratio on Financial Distress

The results of this study indicate that the CAR ratio in Digital Bank Companies and Commercial Banks that have Digital Services in Indonesia has a negative and insignificant effect on the possibility of financial distress. Capital Adequacy Ratio (CAR) which does not affect financial distress indicates that banks do not utilize the funds raised to be channeled in
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the form of credit and instead store too much capital. This causes a large amount of funds not to be utilized optimally, so that funds that should be used for more productive banking activities do not provide opportunities for banks to achieve higher profits. Although there is a negative relationship, the effect of CAR on financial distress is not significant. This means that, in this study, changes in CAR do not have a strong or meaningful impact in explaining or predicting the occurrence of financial distress in digital bank companies and commercial banks with digital services. In other words, CAR is not the dominant factor or the main determinant of financial distress in this context. The results in this study and period are more than 8% or which means that in this research sample, the CAR ratio is in a healthy area according to the percentage of Bank Indonesia, so it can be concluded that the CAR ratio has no effect on financial distress conditions.

The results of research on this variable are in line with Theodorus and Artini (2018), Zahronyana and Mahardika (2019), Ginting and Mawardi (2021) which state that the CAR ratio has no effect on financial distress.

Effect of NPL Ratio on Financial Distress

The results of this study indicate that the NPL Ratio in Digital Bank Companies and Commercial Banks that have Digital Services in Indonesia has a positive and significant effect on the possibility of financial distress. It can be interpreted that the higher the NPL ratio determines the company is likely to experience financial distress. Changes in the value of NPL (Non-Performing Loan) affect the risk of financial distress, especially since high non-performing loans can affect the bank's ability to meet its financial obligations. Therefore, decisions related to NPL have an impact on the company's financial distress condition. The positive relationship between NPL and financial distress indicates that if NPL increases, the possibility of financial distress will also increase, and conversely, a decrease in NPL will reduce the risk of financial distress, this statement is in line with research conducted by (Ginting, Munthe and Purba, 2024). In this study, it is proven that the highest NPL value has a negative profit in that period, namely at Bank IBK Indonesia in 2019, Allo Bank in 2019 and Neo Bank in 2018.

The results of this study are in line with Suot et al. (2020), Sriyanto and Agustina (2020) and Ginting et al (2024) state that the NPL ratio has a positive effect on financial distress.

Effect of LDR Ratio on Financial Distress

The results in this study indicate that the LDR Ratio in Digital Bank Companies and Commercial Banks that have Digital Services in Indonesia has a negative and insignificant effect on the possibility of financial distress. It can be interpreted that the higher the LDR ratio, the less likely the company will experience financial distress. The higher the LDR ratio, where the bank extends more credit than the funds it raises, tends to reduce the risk of financial distress. This can be interpreted that the greater the number of loans provided by the bank in utilizing its funds to generate income which in turn can reduce the risk of financial distress. This is in line with the explanation given by Ginting and Marwadi (2021). Although the effect is negative, research shows that the effect of LDR on financial distress is not significant. This means that although in theory an increase in LDR tends to reduce the

risk of financial distress, in the context of this study, the relationship is not strong enough or statistically important to actually be the main determinant of financial distress.

The results of this study are in line with Theodorus and Artini (2018), Ginting and Marwadi (2021) which state that the NPL ratio has a positive effect on financial distress. However, different results were produced by Ginting et al., (2024) that the LDR ratio has a negative and significant effect on financial distress.

The Effect of BOPO on Financial Distress

The results in this study indicate that the BOPO Ratio in Digital Bank Companies and Commercial Banks that have Digital Services in Indonesia has a negative and insignificant effect on the possibility of financial distress. The negative relationship indicates that the higher the BOPO, reflecting that the company's likelihood of financial distress tends to decrease. This is in line with the concept that if banks are more efficient in managing their operating costs compared to the income earned, then banks are better able to maintain their financial stability and reduce the risk of financial distress. This is in line with the explanation given by Nuranto and Ardiansari (2017). The BOPO ratio has no effect on financial distress, this illustrates that the overall average bank in this study runs its business with a relatively good level of efficiency. This can be seen from the average value smaller than the criteria given by Bank Indonesia of 85% in accordance with PBI 15/12/PBI/2013.

The results of this study are in line with Nuranto and Ardiansari (2017) and Mugiarti (2019) that the BOPO Ratio has a negative and insignificant effect.

The Effect of Firm Size on Financial Distress

The results in this study indicate that Firm Size in Digital Bank Companies and Commercial Banks that have Digital Services in Indonesia has a positive and insignificant effect on the possibility of financial distress. The positive relationship indicates that the larger the firm size there is a tendency for the risk of financial distress to also increase. This could mean that larger banks have more complexity in operations and possibly higher risks compared to smaller banks, so they tend to be more prone to financial distress. However, the result has no effect on financial distress, the relationship is not strong enough or statistically important. In other words, firm size does not significantly affect the likelihood of financial distress in this study. This is evidenced in the highest firm size data in 2022, namely the KB Bukopin Bank company at 32.13% experienced negative profits and the smallest firm size acquisition, namely BCA Digital Bank in 2018 at 27.5% did not experience negative profits. This explanation is in line with research conducted by Yosandra and Sembiring (2022).

The results of this study are in line with research conducted by Varirera & Adi (2021) and Yosandra and Sembiring (2022) that firm size has a positive and insignificant effect.

5. CONCLUSIONS

The results in this study were conducted by the author using Microsoft Excel 2023 software and SPSS 29, with this software, the following conclusions were obtained, simultaneously, the variables Return on Assets (ROA), Capital Adequacy Ratio (CAR), Non-Performing

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Loan (NPL), Loan to Deposit Ratio (LDR), Operating Expenses to Operating Income (BOPO), and Firm Size have a significant influence on financial distress in digital banks and commercial banks with digital services registered with the Financial Services Authority (OJK) in the 2018-2023 period. The test results show that these ratios affect financial distress by 49.5%, while 50.5% is influenced by other factors outside this study. While partially, ROA and NPL variables are proven to have a significant effect on financial distress. On the other hand, the variables CAR, LDR, BOPO, and company size have no significant effect on financial distress. This shows that although some financial ratios play a role in predicting financial distress, some other ratios and company size do not directly affect the condition.

References

1. Alamsyah, A., Kristanti, N., & Kristanti, F. T. (2021). Early warning model for financial distress using Artificial Neural Network. *IOP Conference Series: Materials Science and Engineering*, 1098(5), 52103.
2. Almilia, L. S., & Kristijadi, K. (2003). Financial Ratio Analysis to Predict Financial Distress Conditions of Manufacturing Companies Listed on the Jakarta Stock Exchange. *Indonesian Journal of Accounting and Auditing*, 7(2), 183-210.
3. Arinta, Y. N. (2016). Comparative Analysis of Financial Performance between Islamic Banks and Conventional Banks (Case Study on Bank Syariah Mandiri and Bank Mandiri). *Muqtasid: Journal of Economics and Islamic Banking*, 7(1), 119-140. <https://doi.org/10.18326/muqtasid.v7i1.119-140>
4. Chou, J.-J., Liu, Y.-L., Su, S.-H., Chuang, S.-T., & Sarahila Bajrey, B. (2023). Effects of Financial Ratios on Financial Distress: Evidence from State-Owned Banks Listed on the Indonesia Stock Exchange. *International Journal of Business Management and Economic Review*, 06(02), 101-115. <https://doi.org/10.35409/IJBMER.2023.3477>
5. Dendawijaya, L. (2009). *Banking Management* (2nd Edition). Ghalia Indonesia.
6. Ferdiansyah, F., & Widyarti, E. T. (2022). Analysis of CAMEL Ratio on Financial Distress Banking Companies in Indonesia. *Diponegoro International Journal of Business*, 5(1), 47-56.
7. Galijot, S. C., & Mahardika, D. P. K. (2019). The Effect of Liquidity Ratio, Leverage Ratio, and Company Size on Financial Distress (Empirical Study of Mining Companies Listed on the Indonesia Stock Exchange for the 2014-2018 Period). *EProceedings of Management*, 6 (2).
8. Ghazali, I. (2011). *Application of Multivariate Analysis with the SPSS Program*. Diponegoro University Publishing Agency.
9. Ginting, D., & Mawardi, W. (2021). Analysis of the Effect of CAMEL Ratio and Firm Size on Financial Distress in Banking Companies in Indonesia (Study on Commercial Banks Listed on the Indonesia Stock Exchange in 2015-2019). *Diponegoro Journal of Management*, 10(4), 1-11.
10. Ginting, N. A. B., Munthe, K., & Purba, A. M. (2024). The Effect of Roa, Roe, Ldr, Cr, and Npl on Financial Distress Conditions in Banking Companies Listed on the Indonesia Stock Exchange for the 2019-2022 Period ". *Kukima: Collection of Management Scientific Works*, 64-83.
11. Hakim, R., Wiralestari, W., & Yetti, S. (2021). The Effect of Company Size, Leverage, Sales Growth, and Profitability on Financial Distress (Empirical Study of Property and Real Estate Sector Companies Listed on the IDX in 2015-2019). *Jambi Accounting Review (JAR)*, 2(2), 128-143.
12. Herdiningtyas, W., & Almilia, L. S. (2006). Analysis of CAMEL Ratios to Predict Troubled Conditions in Banking Institutions for the Period 2000-2002. *Journal of Accounting and Finance*, 7(2), 131-147.

13. Holili, M., Paramita, R. W. D., & Taufiq, M. (2021). The Effect of Return on Assets, Current Ratio, Debt to Equity Ratio, and Return on Equity to Improve Financial Distress. *Counting: Journal of Accounting*, 3(4), 175-180.
14. Iskandar, Y., Suharyanto, S., Zaki, A., & Widhayani, P. S. (2023). The Effect of Non-Performing Loans and Loan Deposit Ratios on Stock Returns Mediated by Profitability: A Study on Commercial Banks Listed on the Indonesia Stock Exchange for the Period 2016-2018. *Journal of Management Applications*, 21(2), 282-295. <https://doi.org/10.21776/ub.jam.2023.021.02.01>
15. Kristanti, F. T. (2019). Financial Distress. *Media Intelligence*.
16. Kristanti, F. T., Effendi, N., Herwany, A., & Febrian, E. (2016). Does corporate governance affect the financial distress of Indonesian companies? A survival analysis using cox hazard model with time-dependent covariates. *Advanced Science Letters*, 22(12), 4326-4329.
17. Kristanti, F. T., & Pancawitri, S. (2024). Some factors affecting financial distress in telecommunication companies in Southeast Asia. *Business: Theory and Practice*, 25(1), 190-199.
18. Kusdiana, Y. (2014). Analysis of CAMEL and Altman's Z-Score Models in Predicting Bankruptcy of Commercial Banks in Indonesia (Study on Commercial Banks Listed on the Indonesia Stock Exchange in 2007-2011). *Journal of Business Management Tepak*, 6(1), 85-94.
19. Mahariyani, N., Wardini, A. K., & Wati, L. N. (2020). Bank Financial Distress Prediction Model With Logit Regression. *Journal of Research in Business and Management*, 8(9), 18-34.
20. Maulidya, G. P., & Afifah, N. (2021). Banking in the new digital era: towards bank 4. 0. *Proceeding of Business Seminar Series V*, 278-288.
21. Mugiarti, T. (2019). The Effect of Risk Profile, Good Corporate Governance, Earnings And Capital (Rgec), And Bopo on Financial Distress Prevention (Empirical Study on Islamic Commercial Banks in 2015-2018) (Doctoral dissertation, Thesis, University of Muhammadiyah Magelang).
22. Natasya, A. C., & Kristanti, F. T. (2019). Determinants of the Cost of Financial Distress. *JAF- Journal of Accounting and Finance*, 3(2), 25-33. <https://doi.org/10.25124/jaf.v3i2.2208>
23. Niu, F. A. L., & Hasan, Y. (2019). Comparison of Fee Based Income in Conventional Banks and Islamic Banks in Indonesia (Financial Statement Study). *Tasharruf: Journal of Economics and Business of Islam*, 4(2), 128-146.
24. Nuranto, A. A., & Ardiansari, A. (2017). The Effect of Financial Ratios, Firm Size and Market Effect on Bankruptcy Level. *Management Analysis Journal*, 6(2), 183-194.
25. Platt, H. D., & Platt, M. B. (2002). Predicting Corporate Financial Distress: Reflections on Choice-Based Sample Bias. *Journal of Economics and Finance*, 26(2), 184-199. <https://doi.org/10.1007/BF02755985>
26. Sriyanto, S., & Agustina, Y. (2020). The Effect of ROA, BOPO, NPL and LDR on Financial Distress in Banking Sector Companies for the 2011-2018 Period. *Indonesian Journal of Economics Application (IJE)*, 2(2), 76-85.
27. Sopian, D., & Rahayu, W. P. (2017). The Effect of Financial Ratios and Company Size on Financial Distress (Empirical Study on Food and Beverage Companies on the Indonesia Stock Exchange). *COMPETITIVE Journal of Accounting and Finance*, 1(2). <https://doi.org/10.31000/competitive.v1i2.240>
28. Suot, A. (2020). Analysis of Environmental Effect on Main Outlet Cooling Tower Water Temperature in Relationship with Turbine Performance of Geothermal Power Plant in Lahendong Unit 3.
29. Suardika, I. W., Endiana, I. D. M., & Pramesti, I. G. A. A. (2023). The Effect of Return On Assets, Capital Adequacy Ratio, Non Performing Loan, Loan To Deposits Ratio, Operating Costs and Operating Income on Financial Distress at BPRs in Denpasar City in 2019-2021.

- Collection of Accounting Student Research Results (KHARISMA), 5 (3), 492-506.
30. Sugiyono. (2017). Quantitative, Qualitative, and R&D Research Methods. Alfabeta.
 31. Sugiyono. (2018). Quantitative, Qualitative, and R&D Research Methods. Alfabeta
 32. Theodorus, S., & Artini, L. G. S. (2018). Study of Financial Distress in Banking Companies on the IDX (Doctoral dissertation, Udayana University).
 33. Varirera, V. V., & Adi, S. W. (2021, June). The effect of debt ratio, profit margin, company size, and liquidity on financial distress in property, real estate and building construction companies listed on the bei. In Proceedings of the National Seminar on Economics and Business (pp. 558-568).
 34. Wijaya, E., & Melly, P. S. (2024). Financial Distress: Financial Ratio Analysis of Transportation Sub-Sector Companies for the Period 2020q1-2022q4. JIMFE (Scientific Journal of Management Faculty of Economics), 10(1), 89-102.
 35. Yosandra, D. S. A., & Sembiring, F. M. (2022). Factors Affecting Financial Distress (Studies on several State-Owned Enterprises in Indonesia). Expansion: Journal of Economics, Finance, Banking, and Accounting, 14(1), 22-41.
 36. Zahronyana, B. D., & Mahardika, D. P. (2018). Capital adequacy ratio, non-performing loans, net interest margin, operating expenses operating income and loan to deposit ratio on financial distress. JRAK, 10(2), 90-98.