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Prediction Model of Financial Distress Based on Financial Performance of Conventional Go-Public Banks in Indonesia

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Abstract:

This study aims to find a prediction model of financial difficulties in the Indonesian banking sector, especially in Conventional Go-Public Banks. The criteria for assessing financial difficulties are divided into two panels, namely the median panel and the mean or average panel. The financial performance assessed in this study is Loan to Deposits Ratio (LDR),Non-Performing Loans (NPL), Operational Costs and Operating Income (BOPO), Return on Assets (ROA) and Capital Adequacy Ratio (CAR). The research sample amounted to forty-five (45) Conventional Go-Public Banks that operating in Indonesia in the period 2013-2017 and selected by using purposive sampling method. Logistic regression is used to analyze the data. The results of this study found that the NPL ratio in the median panel becomes a significant variable in predicting financial difficulties in Conventional Go-Public Banks in Indonesia, while the LDR, CAR and NPL ratios in the mean panel were significant variables in predicting financial difficulties in Conventional Go-Public Banks in Indonesia.

Keywords: Financial Distress, Banking, Logistic Regression, Financial Performance

Background :

According to Hanafi (2014: 278) financial distress can be described from two extreme points, namely short-term liquidity to insolvable. Short-term financial difficulties are usually short-term, but can develop into a severe one. Indicators of financial difficulties can be seen from the analysis of cash flow, company strategy analysis, and company financial statements.

After the banking crisis, governments in various countries including Indonesia focused on bank regulation and supervision. The failure of a bank, especially those that are systemic, will result in disruption of the economy of a country.

The performance evaluation or health of a commercial bank is regulated in the Financial Services Authority Regulation (POJK) Number 4 / POJK.03 / 2016 concerning the Assessment of Soundness Levels of Commercial Banks. The factors that used to assess the wellness of commercial banks include risk profiles, Good Corporate Governance (GCG), rentability (earnings) and capital (capital) with the assessment variables in the form of banking financial ratios. The banking financial ratios that will be used can provide an overview of the financial strength of a bank, and from there it can be known whether the bank that studied or assessed is experiencing financial distress or not.

Financial ratios provide an indication of the financial strength of a company, financial ratio analysis can help business people, the government and other users of financial statements to assess a company's financial condition, including the banking sector, are experiencing financial difficulties or not.

Financial distress is a stage of financial declining condition that occurs before bankruptcy and liquidation happen, the use of information if a bank experiences financial distress has several points that can speed up management actions to prevent problems before the occurrence of bankruptcy, management can take merger or take action so that the bank is able to pay obligations and manage the bank better, and can know the warning of the early bankruptcy in the future.

Based on this background, the author conducted a study of Financial Performance-Based Financial Distress Prediction Model on Conventional Go-Public Banking in Indonesia**.**

Theoretical Review

Liquidity performance as a predictor of financial distress conditions

LDR is a comparison between credit given to third party funds. The LDR ratio that is too high can reflect the credit distribution of a bank that is less effective. The higher the LDR ratio, the greater too the potential for financial difficulties. Based on these explanations above, it can be explained about H1 as the following statement,

H1: LDR can predict financial distress conditions in conventional go public banks in Indonesia.

Asset quality performance as a predictor of financial distress conditions.

NPL is the ratio of comparison between non-performing loans and total loans. If NPL increases, the possibility of a problematic financial condition will also increase. NPL reflects the credit risk, the smaller NPL, the smaller the credit risk borne by the bank too. If the NPL is high, it will increase the cost of both the provision of productive assets and other costs so that the potential for bank losses will eventually increase the likelihood of a condition of financial difficulties at the bank. Based on these explanations above, then H2 is explained as the following statement,

H2: NPL can predict financial distress conditions in conventional public go-to banks in Indonesia.

Efficiency performance as a predictor of financial distress conditions

BOPO is the ratio of operational costs and operating income. The higher BOPO ratio indicates that the greater the operational costs incurred by the bank, which indicates that the bank is less efficient in allocating costs for its operational activities. The higher the BOPO ratio, the greater the potential of a bank to experience conditions of financial difficulties. Based on this explanation above, then H3 is explained as the following statement,

H3: BOPO is able to predict financial distress conditions in conventional public go-to banks in Indonesia.

Profitability performance as a predictor of financial distress conditions

ROA ratio is a ratio used to measure the level of ability of a company or bank to generate profits by managing existing assets. The greater the ROA of a bank, then the level of the bank's ability to generate profits for the continuity of the bank's operations will be greater too. The greater the ROA, the potential for a bank to experience financial distress will be smaller. Based on this explanation, H4 can be explained as the following statement,

H4: ROA can predict financial distress conditions in conventional public go-to banks in Indonesia.

Solvability performance as a predictor of financial distress conditions

CAR is the ratio between capital and risk-weighted assets. If CAR increases, then the possibility of problematic financial conditions will be smaller. If the bank's capital is not able to cover the risk of losses arising from planting in productive assets containing risks and cannot be used for financing plantings in fixed assets and investments, these conditions will create financial distress potential. Based on this explanation, H5 can be explained as the following statement,

H5: CAR is able to predict financial distress conditions in conventional public go-to banks in Indonesia.

Methodology :

Research Population and Samples

The bank population in this study is a conventional go public bank that listed in Indonesia Stock Exchange (IDX) in 2013-2017. The sampling technique used in this research is purposive sampling method, with the following criteria:

a. Banks that have experienced financial difficulties after being determined according to the criteria.

b. Included in the category of bank book 2 (core capital value of Rp. 1.000.000.000.000 or one trillion Rupiah up to Rp. 5.000.000.000.000 or five trillion Rupiah)
c. Banks with positive ROE values, to avoid negative ROE whose value does not meet the logic of financial calculations.

Variable Identification :

The variables used in this study are independent variables and dependent variables which consist of:
1.Dependent variable is symbolized by Y, namely financial distress for the median panel
Y = 1 if the bank experiences financial distress. The criteria for financial distress in this study refer to the research conducted by Zaki et al. (2011). This study uses three criteria to determine whether the bank experiences financial distress, if:
a. The change value of equity in bank is below the median change of equity in all observations.
b. The change value of the bank's NIM is below the median value of the NIM change throughout the observations.
c. The change value of bank's ROE is below the median change in ROE of all observations.

Y = 0 if the bank does not experience financial distress. This study uses three criteria to determine whether the bank does not experience financial distress, if:
a. The change value in bank's equity is above the median change of equity in all observations.
b. The change value of the bank's NIM is above the median value of the NIM's change throughout the observations.
c. The change value of bank's ROE is above the median change in ROE of all observations.

2. Dependent variableis symbolized by Y, which is financial distress for the mean or average panel
Y = 1 if the bank experiences financial distress. This study uses three criteria to determine whether the bank experiences financial distress, if:
a. The change value in bank's equity is below the average value of changes in equity of all observations.
b. The change value of the bank's NIM is below the average value of the NIM's changes throughout the observations.
c. The change value of the bank's ROE is below the average value of changes in ROE of all observations.
Y = 0 if the bank does not experience financial distress. This study uses three criteria to determine whether the bank does not experience financial distress, if:
a. The change value in bank's equity is above the average value of changes in equity of all observations.
b. The change value of the bank's NIM is above the average value of the NIM's changes throughout the observations.
c. The change value of the bank's ROE is above the average value of ROE changes in all observations.
The independent variable is symbolized by X, namely:
a. Loan to Deposit Ratio (LDR) = X_1
b. Non-Performing Loan (NPL) = X_2
c. Operational Income Operating Costs (BOPO) = X_3
d. Return on Assets (ROA) = X_4
e. Capital Adequacy Ratio (CAR) = X_5

Analysis Model and Data Analysis Technique :

This study uses logistic regression analysis. The regression equation that is expected to form in this study are as follows:
P Y / X = 1 + e (1 / β0 + β1X1 + β2X2 + …+ ei)
Information:
α = constant
β = Regression coefficient
ei = Disturbing variable

The Resultsof Statistical Tests :

The subject of this study is a Conventional Go Public Bank with a population of Conventional Go Public Banks in Indonesia are 42 (fourty two) banks during 2013-2017. Through the purposive sampling method or

selection of research samples with certain criteria, the details of sample selection criteria are obtained as shown in the following table

Table 1. Banks as Research Sample

Sample Criteria	Number of Banks
Number of Conventional Commercial Go Public Banks in 2013	35
Conventional Commercial Go Public Banks that do not meet the research criteria and do not completely publish the Financial Statements for 2012 - 2013	26
Number of samples in 2013	**9**
Number of conventionalgoing public commercial banks in 2014	38
Conventional Commercial Go Public Banks that do not meet the study criteria and do not completelypublish financial statements in full-year 2013 - 2014	29
Number of samples in 2014	**9**
Number of ConventionalCommercialGo PublicBanks in 2015	40
Conventional Commercial Go Public Banks that do not meet the study criteria and do not completely publish financial statements in 2014 - 2015	31
Number of samples in 2015	**9**
Number of conventional commercial banks going public in 2016	42
Conventional Commercial Go Public Banks that do not meet the study criteria and do not completely publish financial statements in 2015 - 2016	33
Number of samples in 2016	**9**
Number of conventional commercial go public banks in 2017	42
Conventional CommercialGo Public Banks that do not meet the study criteria and do not completely publish financial statements in full-year 2016 - 2017	33
Number of samples for 2017	**9**
Total number of samples	**45**

Median Panel

Table 2. Descriptive Statistics of Median Panel

Var.	N	Minimum	Maximum	Mean	Std. Deviation
LDR	45	45.72%	140.72%	81.44%	17.87%
NPL	45	0.00%	4.30%	1.34%	1.01%
BOPO	45	33.28%	96.66%	86.81%	10.72%
ROA	45	0.31%	5.14%	1.31%	0.81%
CAR	45	14.15%	87.49%	22.40%	11.49%

The table above shows that the number of Conventional Go-Public Banks in this study are forty-five (45) Banks. LDR with the lowest value in this study was 45.72% and the highest was 140.72%. The average or mean of LDR is 81.44% with a standard deviation of 17.87%. With a standard deviation value that is smaller than the mean value, it can be said that the deviation of the LDR's data is relatively small so that it also shows that the data quality is relatively good.

NPL with the lowest value in this study was 0.00% and the highest was 4.3%. The NPL is 1.34% with a standard deviation of 1.01%. With a standard deviation value that is smaller than the mean value, it can be said that the NPL's data deviation is relatively small so that it also shows that the data quality is relatively good.

BOPO with the lowest value in this study is 33.28% and the highest is 96.66%. The BOPO's mean is 86.81% with a standard deviation of 10.72%. With a standard deviation value that is smaller than the mean value, it can be said that the BOPO's data deviation is relatively small so that it also shows that the data quality is relatively good.

ROA with the lowest value in this study is 0.31% and the highest is 5.14%. The ROA's mean is 1.31% with a standard deviation of 0.81%. With a standard deviation value that is smaller than the mean value, it can be said that the ROA's data deviation is relatively small so that it also shows that the data quality is relatively good.

CAR with the lowest value in this study is 14.15% and the highest is 87.49%. The CAR's mean is 22.40% with a standard deviation of 11.49%. With a standard deviation value that is smaller than the mean value, it can be said that the CAR's data deviation is relatively small so that it also shows that the data quality is relatively good.

Table 3. Equations for Distress Criteria on Median Panel

Types of Equations	Variabelthat Used
Equation 1	The criteria for financial distress equation 1 is the value of changes in bank equity below the value of changes' median in the equity of all observations.
Equation 2	The criteria for financial distress equation 1 is the value of changes in the bank's NIM below the median value of the NIM changes in all observations.
Equation 3	The criteria for financial distress equation 1 is the change value of the bank's ROE below the median value of ROE's changes in all observations.

Table 4. Value of Financial Distress Criteria

The Criteria of*Financial Distress*		Status
Value 0	If the median value of changes in equation 1-3> the median value of changes in all observation	Non-*Financial Distress*
Value 1	If the median value of changes in equations 1-3 ≤ the median value of changes in all observations	*Financial Distress*

The following below is a table that displays the values of Hosmer &Lemeshow's Test and Negel Kerke-R2 from each logit regression equation:

Table 5. Result of Hosmer &Lemeshow's Test

Equation	Hosmer &Lemeshow's Test		Nagel Kerke-R^2
	Chi-Square	Significance	
Equation 1	10.441	0.165	0.327

Equation 2	4.498	0.721	0.121
Equation 3	3.876	0.794	0.203

Table 6. Significance Value

No	Independent Variable	Significance Value		
		Equation 1 (Equity)	Equation 2 (NIM)	Equation 3 (ROE)
1	LDR	0.090	0.471	0.610
2	NPL	0.166	0.136	0.037
3	BOPO	0.840	0.485	0.365
4	ROA	0.858	0.893	0.497
5	CAR	0.056	0.597	0.526

Table 7. Significant and Insignificant Variable

Equation	Significant Variable	Insignificant Variable
Equation 1	None	LDR, NPL, BOPO, ROA, CAR
Equation 2	None	LDR, NPL, BOPO, ROA, CAR
Equation 3	NPL	LDR, BOPO, ROA, CAR

Equation 1

Based on the table above, the value of Chi-Square Hosmer &Lemeshow Test is 10.441 with a significance of 0.165 (greater than 0.1) which means that the model is fit with the data. The Nagel Kerke-R2 value of the first equation is 0.327, means that the variability of the dependent variable which can be explained by the variability of the independent variable is 32.7%. Based on the results of equation table, the results of the study can be explained as the following statement:

a. The testing of LDR variable shows the results of the regression coefficient of -0.064 with a significance of 0.090 (<1 or less than 1). The LDR regression coefficient is negative which indicates that the LDR has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the LDR variable increases, the opportunity for the occurrence of financial distress conditions decreases or the chance becomes small. Therefore, the hypothesis that the LDR can predict the condition of financial distress in this equation cannot be accepted or rejected.

b. The testing of NPL variables shows the results of the regression coefficient of -0.582 with a significance of 0.166 (<1 or less than 1). The NPL regression coefficient is negative which indicates that the NPL has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the NPL variable increases, the opportunity for the occurrence of financial distress conditions decreases or the chance becomes small. Therefore, the hypothesis that NPL can predict financial distress conditions in this equation cannot be accepted or rejected.

c. The testing of BOPO variables shows the results of the regression coefficient of 0.024 with a significance of 0.840 (<1 or less than 1). The BOPO regression coefficient is positive which shows that BOPO has a positive effect (in the same direction) on the condition of bank financial difficulties. It can be explained that if the BOPO variable increases, the opportunity for the occurrence of financial distress conditions will increase or the chances of financial difficulties become large. Therefore, the hypothesis that BOPO can predict the condition of financial distress in this equation is acceptable.

d. The testing of ROA variable shows the results of the regression coefficient of 0.265 with a significance of 0.858 (<1 or less than 1). The ROA regression coefficient is positive, indicating that ROA has a positive effect (in the same direction) on the condition of bank financial difficulties. It can be explained that if the ROA variable increases, the opportunity for the occurrence of financial distress conditions will increase or

the chances of financial difficulties become large. Therefore, the hypothesis that ROA can predict financial distress conditions in this equation is acceptable.

e. The testing of CAR variable shows the results of the regression coefficient of -0.125 with a significance of 0.056 (<1 or less than 1). CAR regression coefficient has a negative sign that indicates that CAR has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the CAR variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that CAR can predict financial distress conditions in this equation cannot be accepted or rejected.

Table 8. Statistics Value for Equation 1

Variable	Regression Coefficient	S.E.	Wald Stat	Significance
LDR	-0.064	0.038	2.878	0.090
NPL	-0.582	0.420	1.921	0.166
BOPO	0.024	0.119	0.041	0.840
ROA	0.265	1.488	0.032	0.858
CAR	-0.125	0.065	3.666	0.056

Equation 2

Based on the table above, the value of Chi-Square Hosmer &Lemeshow Test equation 2 is equal to 4.498 with a significance of 0.721 (greater than 0.1) which means that the model is fit (match) with the data. The Nagel Kerke-R2 value of equation 2 is 0.121, means that the variability of the dependent variable which can be explained by the variability of the independent variable is 12.1%. Based on the result table of equation 2, the results of the study can be explained as the following statement:

a. The testing of LDR variables shows the results of the regression coefficient of -0.020 with a significance of 0.471 (<1 or less than 1). The LDR regression coefficient is negative which indicates that the LDR has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the LDR variable increases, the opportunity for the occurrence of financial distress conditions decreases or the chance becomes small. Therefore, the hypothesis that the LDR can predict the condition of financial distress in this equation cannot be accepted or rejected.

b. The testing of NPL variables shows the results of the regression coefficient of 0.535 with a significance of 0.136 (<1 or less than 1). The NPL regression coefficient is positive, which indicates that the NPL has a positive (unidirectional) effect on the condition of bank financial difficulties. It can be explained that if the NPL variable increases, the opportunity for the occurrence of financial distress will experience an increase or the opportunity for financial difficulties to be large. Therefore, the hypothesis that NPL can predict the condition of financial distress in this equation is acceptable.

c. The testing of BOPO variable shows the results of the regression coefficient of -0.090 with a significance of 0.485 (<1 or less than 1). The BOPO regression coefficient is negative, which indicates that BOPO has a negative effect (having the opposite character) on the condition of bank financial difficulties. It can be explained that if the BOPO variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that BOPO can predict financial distress conditions in this equation cannot be accepted or rejected.

d. The testing of ROA variable shows the results of the regression coefficient of -0.195 with a significance of 0.893 (<1 or less than 1). ROA regression coefficient has a negative sign that indicates that ROA has a negative effect (having the opposite character) on the condition of bank financial difficulties. It can be explained that if the ROA variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that ROA can predict financial distress conditions in this equation cannot be accepted or rejected.

e. The testing of CAR variable shows the results of the regression coefficient of 0.019 with a significance of 0.597 (<1 or less than 1). CAR regression coefficient is positive which indicates that CAR has a positive

effect (in the same direction) on the condition of bank financial difficulties. It can be explained that if the CAR variable increases, the opportunity for the occurrence of financial distress conditions will increase or the chances of financial difficulties become large. Therefore, the hypothesis that CAR can predict the condition of financial distress in this equation is acceptable.

Table 9. Statistics Value for Equation 2

Variable	Regression Coefficient	S.E.	Wald Stat	Signicance
LDR	-0.020	0.028	0.519	0.471
NPL	0.535	0.359	2.227	0.136
BOPO	-0.090	0.129	0.488	0.485
ROA	-0.195	1.451	0.018	0.893
CAR	0.019	0.036	0.280	0.597

Equation 3

Based on the table above, the value of Chi-Square Hosmer &Lemeshow Test equation 3 is equal to 3,876 with a significance of 0.794 (greater than 0.1) which means that the model is fit with the data. The Nagel Kerke-R2 value of equation 3 is equal to 0.203, means that the variability of the dependent variable which can be explained by the variability of the independent variable is 20.3%. Based on the table of results of equation 3, the results of the study can be explained as the following statement:

a. The testing of LDR variable shows the results of the regression coefficient of -0.015 with a significance of 0.610 (<1 or less than 1). The LDR regression coefficient is negative which indicates that the LDR has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the LDR variable increases, the opportunity for the occurrence of financial distress conditions decreases or the chance becomes small. Therefore, the hypothesis that the LDR can predict the condition of financial distress in this equation cannot be accepted or rejected.

b. The testing of NPL variables shows the results of the regression coefficient of 0.871 with a significance of 0.037 (<1 or less than 1). The NPL regression coefficient is positive, which indicates that the NPL has a positive (unidirectional) effect on the condition of bank financial difficulties. It can be explained that if the NPL variable increases, the opportunity for the occurrence of financial distress will experience an increase or the opportunity for financial difficulties to be large. Therefore, the hypothesis that NPL can predict the condition of financial distress in this equation is acceptable.

c. The testing of BOPO variable shows the regression coefficient of -0.109 with a significance of 0.365 (<1 or less than 1). The BOPO regression coefficient is negative, which indicates that BOPO has a negative effect (having the opposite character) on the condition of bank financial difficulties. It can be explained that if the BOPO variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that BOPO can predict financial distress conditions in this equation cannot be accepted or rejected.

d. The testing of ROA variable shows the regression coefficient of -1.005 with a significance of 0.497 (<1 or less than 1). ROA regression coefficient has a negative sign that indicates that ROA has a negative effect (having the opposite character) on the condition of bank financial difficulties. It can be explained that if the ROA variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that ROA can predict financial distress conditions in this equation cannot be accepted or rejected.

e. The testing of CAR variable shows the results of the regression coefficient of -0.024 with a significance of 0.526 (<1 or less than 1). CAR regression coefficient has a negative sign that indicates that CAR has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the CAR variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that CAR can predict financial distress conditions in this equation cannot be accepted or rejected.

Table 10. Statistics Value for Equation 3

Variable	Regression Coefficient	S.E.	Wald Stat	Significance

LDR	-0.015	0.030	0.261	0.610
NPL	0.871	0.418	4.335	0.037
BOPO	-0.109	0.120	0.822	0.365
ROA	-1.005	1.479	0.462	0.497
CAR	-0.024	0.038	0.402	0.526

Table 11. Accuracy of Model Prediction

Equation	Percentage of The Appropriate Financial Distress Prediction (1)	Percentage of The Appropriate Non-Financial Distress Prediction (0)	Percentage of the Accuracy of the Overall Model Prediction
Equation 1	82.1%	47.1%	68.9%
Equation 2	70.8%	52.4%	62.2%
Equation 3	76%	65%	71.1%

From the three logit regression equation results, equation 3 is a model that has the best percentage value of financial distress prediction in Conventional Go Public Banks in Indonesia in 2013-2017 with a prediction accuracy percentage of 71.1% along with predictor ratios, namely NPL.

MeanPanel :

Table 12. Equations for Distress Criteria on Mean Panel

Types of Equations	Variable Used
Equation 1	Criteria for financial distress equation 1 is the value of changes in bank equity below the mean or the average change in equity of all observations.
Equation 2	Criteria for financial distress equation 1 is the value of changes in the bank's NIM below the mean or the average NIM change of all observations.
Equation 3	Criteria for financial distress equation 1 is the change in value of bank ROE below the mean or average change in ROE of all observations.

Table 13. Value of Financial Distress Criteria

Criteria of*Financial Distress*		Status
Value 0	If the mean or the average change in equations 1-3> the mean or change of the average in all observations	Non-*Financial Distress*
Value 1	If the mean or the average changes in equations 1-3 the mean the average change in all observations	*Financial Distress*

Table 14. Result of Hosmer &Lemeshow Test

Equation	Hosmer &Lemeshow's Test		Negel Kerke-R^2
	Chi-Square	Significance	
Equation 1	3.696	0.814	0.638
Equation 2	13.846	0.054	0.076
Equation 3	4.491	0.722	0.149

Table 15. Significance Value

No	Independent Variable	Significance Value		
		Model 1 (Equity)	Model 2 (NIM)	Model 3 (ROE)
1	LDR	0.013	0.710	0.980
2	NPL	0.527	0.239	0.093
3	BOPO	0.449	0.672	0.335
4	ROA	0.151	0.985	0.378
5	CAR	0.017	0.486	0.652

Table 16. Significant and Insignificant Variable

Equation	Significant Variable	InsignificantVariable
Equation 1	LDR, CAR	NPL, BOPO, ROA
Equation 2	None	LDR, NPL, BOPO, ROA, CAR
Equation 3	NPL	LDR, BOPO, ROA, CAR

Equation 1

Based on the table above, the value of the Hosmer &Lemeshow Test Chi-Square is 3.696 with a significance of 0.814 (greater than 0.1) which means that the model is fit with the data. The Negel Kerke-R2 value of the first equation is 0.638, means that the variability of the dependent variable which can be explained by the variability of the independent variable is 63.8%. Based on the results table equation, the results of the study can be explained as the following statement:

a. The testing of LDR variables shows the results of the regression coefficient of -0.253 with a significance of 0.013 (<1 or less than 1). The LDR regression coefficient is negative which indicates that the LDR has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the LDR variable increases, the opportunity for the occurrence of financial distress conditions decreases or the chance becomes small. Therefore, the hypothesis that the LDR can predict the condition of financial distress in this equation cannot be accepted or rejected.

b. The testing of NPL variables shows the results of the regression coefficient of -0.359 with a significance of 0.527 (<1 or less than 1). The NPL regression coefficient is negative which indicates that the NPL has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the NPL variable increases, the opportunity for the occurrence of financial distress conditions decreases or the opportunity becomes smaller. Therefore, the hypothesis that NPL can predict financial distress conditions in this equation cannot be accepted or rejected.

c. The testing of BOPO variables shows the results of the regression coefficient of 0.113 with a significance of 0.449 (<1 or less than 1). The BOPO regression coefficient is positive which shows that BOPO has a positive effect (in the same direction) on the condition of bank financial difficulties. It can be explained that if the BOPO variable has increased, the opportunity for the occurrence of financial distress conditions has increased too or the chance for financial difficulties become big. Therefore, the hypothesis that BOPO can predict the condition of financial distress in this equation is acceptable.

d. The testing of ROA variable shows the regression coefficient of 3.355 with a significance of 0.151 (<1 or less than 1). The ROA regression coefficient is positive, indicating that ROA has a positive effect (in the same direction) on the condition of bank financial difficulties. It can be explained that if the ROA variable increases, the opportunity for the occurrence of financial distress conditions increases too or the chances of financial difficulties become big. Therefore, the hypothesis that ROA can predict financial distress conditions in this equation is acceptable.
e. The testing of CAR variable shows the results of the regression coefficient of -0.305 with a significance of 0.017 (<1 or less than 1). CAR regression coefficient has a negative sign that indicates that CAR has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the CAR variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that CAR can predict financial distress conditions in this equation cannot be accepted or rejected.

Table 17. Statistic Result for Equation 1

Variable	Regression Coefficient	S.E.	Wald Stat	Significance
LDR	-0.253	0.102	6.104	0.013
NPL	-0.359	0.568	0.400	0.527
BOPO	0.113	0.149	0.574	0.449
ROA	3.355	2.335	2.065	0.151
CAR	-0.305	0.128	5.717	0.017

Equation 2

Based on the table above, the value of Chi-Square Hosmer &Lemeshow Test equation 2 is 13,846 with a significance of 0.054 (smaller than 0.1) which means that the model is not fit with the data. The Negel Kerke-R2 value of equation 2 is 0.076, means that the variability of the dependent variable which can be explained by the variability of the independent variable is 7.6%. Based on the table of results of equation 2, the results of the study can be explained as the following statement:
a. The testing of LDR variable shows the results of the regression coefficient of -0.010 with a significance of 0.710 (<1 or less than 1). The LDR regression coefficient is negative which indicates that the LDR has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the LDR variable increases, the opportunity for the occurrence of financial distress conditions decreases or the chance becomes small. Therefore, the hypothesis that the LDR can predict the condition of financial distress in this equation cannot be accepted or rejected.
b. The testing of NPL variables shows the results of the regression coefficient of 0.414 with a significance of 0.239 (<1 or less than 1). The NPL regression coefficient is positive, which indicates that the NPL has a positive (unidirectional) effect on the condition of bank financial difficulties. It can be explained that if the NPL variable increases, the opportunity for the occurrence of financial distress conditions will increase or the chances of financial difficulties become big. Therefore, the hypothesis that NPL can predict the condition of financial distress in this equation is acceptable.
c. The testing of BOPO variables shows the results of the regression coefficient of -0.048 with a significance of 0.672 (<1 or less than 1). The BOPO regression coefficient is negative, which indicates that BOPO has a negative effect (having the opposite character) on the condition of bank financial difficulties. It can be explained that if the BOPO variable increases, the opportunity for the occurrence of financial distress conditions decreases or the chance becomes small. Therefore, the hypothesis that BOPO can predict the condition of financial distress in this equation cannot be accepted or rejected.
d. The testing of ROA variable shows the results of the regression coefficient of -0.025 with a significance of 0.985 (<1 or less than 1). ROA regression coefficient has a negative sign that indicates that ROA has a negative effect (having the opposite character) on the condition of bank financial difficulties. It can be explained that if the ROA variable increases, the opportunity for the occurrence of financial distress conditions decreases or the chance becomes small. Therefore, the hypothesis that ROA can predict financial distress conditions in this equation cannot be accepted or rejected.
e. The testing of CAR variable shows the results of the regression coefficient of 0.027 with a significance of 0.486 (<1 or less than 1). CAR regression coefficient is positive which indicates that CAR has a positive

effect (in the same direction) on the condition of bank financial difficulties. It can be explained that if the CAR variable increases, the opportunity for the occurrence of financial distress conditions will increase or the chances of financial difficulties become big. Therefore, the hypothesis that CAR can predict the condition of financial distress in this equation is acceptable.

Table 18. Statistic Result for Equation 2

Variable	Regression Coefficient	S.E.	Wald Stat	Significance
LDR	-0.010	0.027	0.138	0.710
NPL	0.414	0.351	1.389	0.239
BOPO	-0.048	0.114	0.180	0.672
ROA	-0.025	1.375	0.000	0.985
CAR	0.027	0.039	0.485	0.486

Equation 3

Based on the table above, the value of the Chi-Square Hosmer &Lemeshow Test equation 3 is equal to 4.491 with a significance of 0.722 (smaller than 0.1) which means that the model is fit with the data. The Negel Kerke-R2 value of equation 3 is 0.149, meaning that the variability of the dependent variable which can be explained by the variability of the independent variable is 14.9%. Based on the table results of equation 3, the results of the study can be explained as the following statement:

a. The testing of LDR variable shows the results of the regression coefficient of 0.001 with a significance of 0.980 (<1 or less than 1). The LDR regression coefficient is positive, indicating that the LDR has a positive (unidirectional) effect on the condition of bank financial difficulties. It can be explained that if the LDR variable increases, the opportunity for the occurrence of financial distress conditions will increase or the chances will be large. Therefore, the hypothesis that the LDR can predict the condition of financial distress in this equation is acceptable.

b. The testing of the NPL variable shows the regression coefficient of 0.631 with a significance of 0.093 (<1 or less than 1). The NPL regression coefficient is positive, which indicates that the NPL has a positive (unidirectional) effect on the condition of bank financial difficulties. It can be explained that if the NPL variable increases, the opportunity for the occurrence of financial distress will experience an increase or the opportunity for financial difficulties to be large. Therefore, the hypothesis that NPL can predict the condition of financial distress in this equation is acceptable.

c. The testing of BOPO variables shows the results of the regression coefficient of -0.106 with a significance of 0.335 (<1 or less than 1). The BOPO regression coefficient is negative, which indicates that BOPO has a negative effect (having the opposite character) on the condition of bank financial difficulties. It can be explained that if the BOPO variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that BOPO can predict financial distress conditions in this equation cannot be accepted or rejected.

d. The testing of ROA variable shows the regression coefficient of -1.238 with a significance of 0.378 (<1 or less than 1). ROA regression coefficient has a negative sign that indicates that ROA has a negative effect (having the opposite character) on the condition of bank financial difficulties. It can be explained that if the ROA variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that ROA can predict financial distress conditions in this equation cannot be accepted or rejected.

e. The testing of CAR variable shows the results of the regression coefficient of -0.017 with a significance of 0.652 (<1 or less than 1). CAR regression coefficient has a negative sign that indicates that CAR has a negative effect (having the opposite nature) on the condition of bank financial difficulties. It can be explained that if the CAR variable has increased, the opportunity for the occurrence of financial distress conditions has decreased or the chance has become small. Therefore, the hypothesis that CAR can predict financial distress conditions in this equation cannot be accepted or rejected.

Table 19. Statistic Result for Equation 3

Variable	Regression Coefficient	S.E.	Wald Stat	Significance

LDR	0.001	0.028	0.001	0.980
NPL	0.631	0.376	2.818	0.093
BOPO	-0.106	0.110	0.930	0.335
ROA	-1.238	1.403	0.778	0.378
CAR	-0.017	0.038	0.204	0.652

Table 20. Accuracy of Overall Model Prediction

Equation	Percentage of The Appropriate Financial Distress Prediction (1)	Percentage of The Appropriate Non-Financial Distress Prediction (0)	Percentage of the Accuracy of the Overall Model Prediction
Equation 1	94.1%	63.6%	86.7%
Equation 2	76.9%	31.6%	57.8%
Equation 3	59.1%	69.6%	64.4%

From the three logit regression equation results, equation 1 is a model that has the percentage value of the best predictions of financial distress in Conventional Commercial Go Public Banks in Indonesia in 2013-2017 with a percentage of prediction accuracy of 86.7% along with predictor ratios, namely LDR and CAR.

Ending :

Based on the research that has been carried out, it can be concluded that there are significant financial ratios and can be used as predictors of conditions of financial difficulties in Conventional Go-Public Banks in Indonesia in 2013-2017. The explanation is as follows:

1. Median Panel

Equation 3 with the percentage of prediction model accuracy of 71.1% and the NPL ratio as the ratio predictor of financial difficulties.

2. Mean Panel (average)

Equation 1 with the percentage of accuracy of the prediction model is 86.7% along with the ratio of LDR and CAR as the ratio of predictors of financial difficulties.

Recommendation for the next research is to enrich the range (year) of research and variables used, so the research become more various and become more specified.

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