FINANCIAL PERFORMANCE AND MACRO ECONOMIC ENVIRONMENT AS PREDICTORS OF FINANCIAL DISTRESS NATIONAL PRIVATE BANKS IN INDONESIA

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Abstract

The condition of bankruptcy is one that will be contacted by any banking company, even in large companies that have long been operating it still has the potential to experience it. Causing identification of financial problems is very important because it can be an early problem before bankruptcy occurs. This condition can be predicted using a model that has been developed by many researchers. This study aims to analyze and describe the influence of finance and the economic environment on the financial condition of foreign exchange banks in the period 2013-2017. The variables used in this study consisted of CKPN, NIM, IPR, IRR, PDN, BOPO, FBIR, INFLATION and JIBOR. The sample consisted of 100 banks categorized as foreign exchange banks in Indonesia in the period 2013-2017, taken by purposive sampling. The data analysis technique used is logistic regression. Declining value levels, investment policy ratios, and interest rate ratios have a significant effect on bank financial distress conditions. While the ratio of operating expenses to operating income, the ratio of cost-based income, net interest margin, net open position, net interest margin and macro variables, namely the increase, the interbank interest rate offered by Jakarta has no significant effect on financial difficulties.

Keywords: Financial Difficulties, Bankruptcy, Logistic Regression, and Financial Ratios

INTRODUCTION

The condition of bankruptcy is one of the possibilities that will be experienced by any company, even in large companies that have long been operating there is still the potential to experience it. In this case, it is indeed very important to analyze the symptoms of bankruptcy to anticipate the future conditions of a company. One way is to analyze the company's financial ratios. In some ways it is due to the fact that several companies stopped due to bankruptcy. Financial distress occurs before the company fails, this condition is a financial condition where the company's finances are in an unhealthy situation or crisis. Financial distress that is enough to disrupt the company's operational activities must be anticipated and steps must be taken immediately. Judging from the financial condition there are three conditions that cause it, namely the existence of a factor of capital shortages, a debt burden that is too large and the company suffers a sustained loss. (Ahmad Rodoni and Ali 2010: 176).

Research conducted by Chen Jianguo at. Al (2006) in China shows that the ratio that has a significant effect on financial distress is EBITDA, EPS, TDTA, price to book ratio and current ratio. Rr. Iramani (2008) conducted a research on prediction models of financial distress of companies going public in Indonesia, showing that the debt to asset ratio (DAR) had a significant effect on financial distress. Alifiah's research (2013) in Malaysia shows that the debt ratio, total asset turnover, working capital ratio, base lending ratio and net income to total asset ratio affect

financial distress. The Harahap study (2015) shows that ROA and NIM ratios can be used to predict financial distress. Furthermore, Laely's (2016) research shows that only the LDR ratio is the most appropriate to be used to determine financial distress. Research conducted by Shidiq Imaduddin and Buddi Wibowo (2017) shows that the ratio of AGDP, LLP, ROE, BOPO, LDR and NPL affects the probability of financial distress. While the research of Darmawan and Joko (2018) shows that the ratio of WCTA, RETA, EBIT and BVOE has a positive effect on the company's financial difficulties.

The results of previous studies about the effect of financial ratios on conditions of financial difficulties that are not consistent. So it is necessary to retest using different samples or additional research variables and different time periods. Retesting is expected to provide more evidence that financial ratios affect the condition of financial distress, and are expected to make the Financial Distress prediction model more complex and the choice of more variables. This model is also expected to contribute to banking companies to avoid bankruptcy, and management to carry out quick and accurate anticipatory actions before actually being declared bankrupt. The difference between this research and the previous one lies in the number of ratios with more types of ratios used and the four components of the bank's risk profile that will be investigated, namely liquidity risk, credit risk, market risk and operating risk, which in previous studies have not been evaluated as a whole. This is also different in terms of sample selection, which focuses more on national private commercial banks in Indonesia and longer period research. This research is expected to contribute to the regulator and bank management to establish a system of financial stability to avoid financial distress.

FORMULATION OF THE PROBLEM
From the background described above, it can be formulated as follows: "Are financial performance and macroeconomic environment simultaneously and partially affecting financial distress in National Private Commercial Banks in Indonesia?"

RESEARCH PURPOSES
Based on the formulation of the problem above, the purpose of this research is to determine the financial performance and macroeconomic environment simultaneously affecting financial distress in National Private Commercial Banks in Indonesia

LITERATURE REVIEW

Bankruptcy
Bankruptcy (bankcruptcy) is a failure of the company in carrying out the company's operations to generate profits, while according to Law No. 4 of 1998 is where an institution is declared by a court decision if the debtor has two or more creditors and does not pay at least one debt that is due and can be collected. according to Lesmana (2003: 174) the definition of bankruptcy is as follows "the risk of bankruptcy is related to uncertainty regarding the ability of a company to continue its operations if the financial condition held has decreased.

Financial Distress

Financial distress is a condition where operating cash flows in a company cannot repay current liabilities such as debt or interest expense. Financial distress is a disruption of company liquidity, which must be overcome by changing the size of the company's operations or structure. Hanafi, M, and Halim (2005) describe the conditions of actual financial difficulties between two extremes, namely difficulties in terms of short-term (the lightest) liquidity, and bankruptcy (most severe). Financial difficulties in the short term are usually temporary, but can develop if there is no improvement

Macroeconomics

Macroeconomics is an economy that studies the economy of a country comprehensively. In other words, in macroeconomics it is explained about the economic changes of a country that have an impact on their society and markets. According to Budiono (2001), macroeconomic theory is the study of the subject of economics, both short and long term covering the stability and economic growth of a country. According to Robert S. Pindyck and Daniel L. Rubinfeld the notion of macroeconomics is an economics that handles economic aggregate variables, such as: Level and average growth of national production, unemployment, interest rates, inflation.

Financial performance

Financial performance can be measured by ratios calculated based on historical accounting data. There are 6 financial performance used in this study namely profitability performance, liquidity performance, credit performance, operational performance, market performance, inflation and interest rates (JIBOR). Profitability performance measures how much the company's ability to generate profits both from assets and equity. Liquidity performance measures how much the company is able to return its short-term liabilities to third party funds. Credit performance measures how well the company maintains its credit quality. Operational performance measures how efficient the company is in managing its income and expenditure. Market performance can measure how sensitive the company is to changes in the market to prices.

The financial performance can be explained in the table below:

Table 2.3

Operational Definition of Financial Performance Variables

| Variable	Operational Definition of Variable	Measurement
CKPN	Credit performance to measure credit risk or a ratio that measures the total portion of CKPN, which is a combined value of several loans serving confidential collectability 3 or substandard, collectibility and collectability which are doubtful 4 or 5 or stuck	(*Allowance for Impairment Losses of Credits / Total Kredit*) × 100%

IPR	Liquidity performance to calculate how well the company pays its obligations. IPR (Investing Policy Ratio) is used to assess the extent to which banks are able to meet the maturity-obligation obligations held	(Surat Berharga / Total Pihak Ketiga) X 100%
IRR	Market performance measures the sensitivity of banks to changes in markets between price levels	IRSA (*Interest rate Senssitivity Asset*) / IRSL (*Interest Rate Sensitivity Liabilities*) X 100%
PDN	Market performance to measure the sensitivity of banks to changes in exchange rates on the market	(*Net Open Position / Total Equity*) X 100%
BOPO	Operational performance to measure the difference between operating income and operating costs	(*Operational Cost / operational Revenue*) X 100%
FBIR	Operational performance to measure bank efficiency in maximizing non-interest operating income to generate revenue operations	(*Operating revenue no Interest / Operating revenue*) X 100%
NIM	Profitability performance measures the ability of banks to generate net interest income from productive assets	(*Net Interest revenue / Produktif Asset*) X 100%
INFLATION	Macro variable to measure the effect on the financial condition of the company because the company must increase costs for purchasing production materials, while the company cannot directly increase the selling price because it can have an impact on product sales.	The inflation value at the end of the year is based on Bank Indonesia data (in percentage)
JIBOR	Variable Macro to measure how much interest rates are set by Bank Indonesia as a benchmark money market rate, which is a reflection of interest rates that occur in the money market, which is calculated periodically, available weekly, monthly or yearly.	Value of interest at the end of the year based on quoted interest rates, indicative of loans offered by the Contributor bank (offer rate) to Bank Indonesia (in percentage)

Financial Distress	Company performance that shows negative profitability (EBIT) performance, NPL performance ≥ 8%, ROA performance ≤ 0.5% and LDR performance> 100% (Bank Indonesia Circular No. 6/23 / DPNP 2004)	Variables are categorized as Financial Distress if EBIT is negative; NPL ≥ 8%; ROA ≤ 0.5%; LDR> 100% is given a value of 1 (Y = 1) The variable is categorized as Non Financial Distress if EBIT is positive; NPL <8%; ROA> 0.5%; LDR ≤100% is given a value of 0 (Y = 0)

Source: SEBI no. 13/30/2011; 6/23 / DPNP 2004

THOUGHT FRAMEWORK

The mindset in this study can be explained and described as follows:
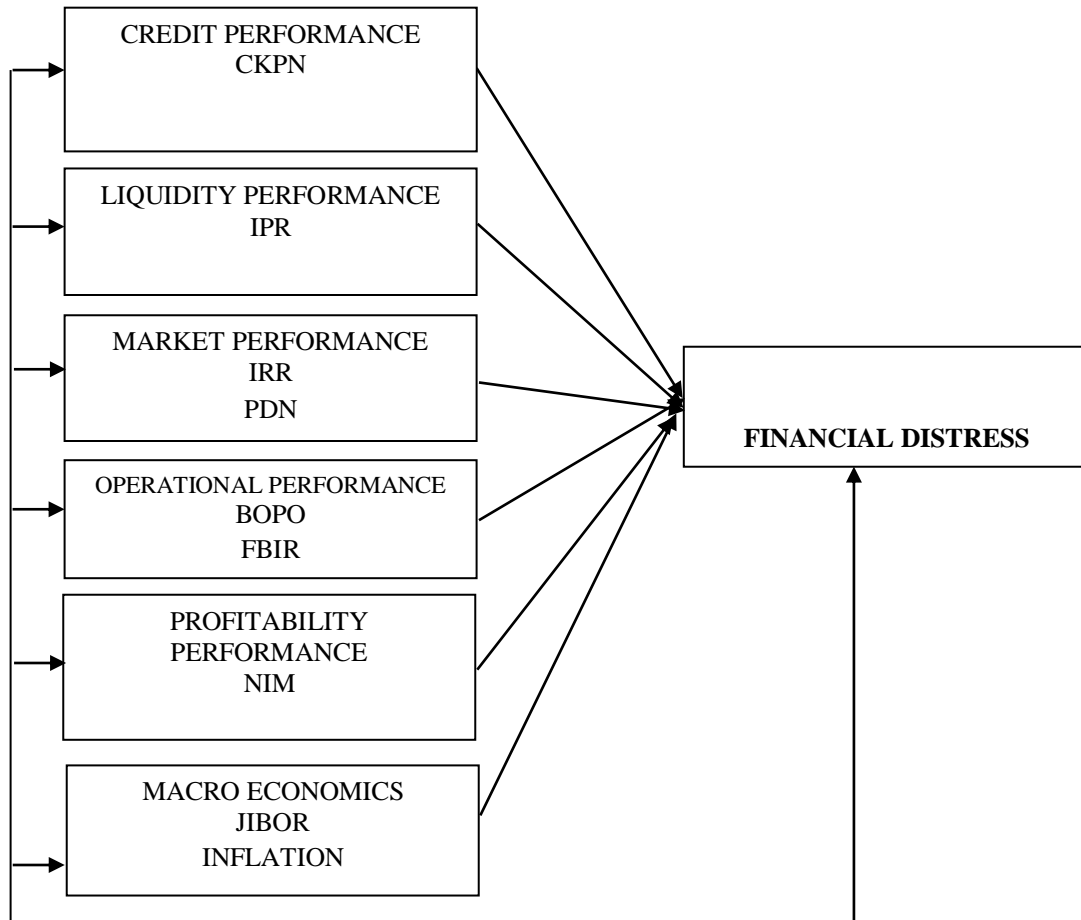
Picture 1
Framework

RESEARCH METHODS

Sample classification

The population of this study is the entire company financial statements of banking companies. The sample in this study is a list of names of National Private Commercial Banks in Indonesia in the period 2013-2017. Sample samples the lection technique in this study used a purposive sampling technique. Specific considerations for sampling are: banks operating in the period of 2013 to 2017, banks that have financial statements with the financial year ending 31 December and have gone through an audit process, banks that do not change their status to other bank groups.

The characteristics of the research data used in this study are as follows:

a. Determination of 2014 financial distress and financial performance data used in 2013

b. Determination of 2015 financial distress and financial performance data used in 2014

c. Determination of 2016 financial distress and financial performance data used in 2015

d. Determination of 2017 financial distress and financial performance data used in 2016

Research data

This study uses secondary data obtained from financial reports from Banking Companies in Indonesia for the period 2013-2017. The method of data collection uses the method, because the data needed and collected is secondary to Bank Indonesia published data in the form of financial statements.

Research variable

This includes the dependent variable Financial Distress (Y) and independent variable (X) consisting of CKPN (X1), IPR (X2), IRR (X3), PDN (X4), BOPO (X5), FBIR (X6)), NIM (X7), INFLATION (X8), JIBOR (X9).

Analysis Tool

To analyze the data provided is descriptive analysis and logistic regression analysis. Descriptive analysis is used to see the variables studied, including Financial Distress, CKPN, IRR, PDN, IPR, BOPO, FBIR, NIM, INFLATION and JIBOR variables. Logistic regression analysis is used to determine the expected results, then the regression equation:

$$(P/1\text{-}P) \quad = \quad \alpha + \beta 1X1 + \beta 2X2 + \ldots + \beta 9X9 + e \qquad (1)$$

So that:

$$P \quad = \quad \frac{1}{e^{-(\alpha + \beta 1X1 + \beta 2X2 + \ldots + \beta 9X9)}} \qquad (2)$$

$$1 \quad + \quad$$
$$2$$

Where:

Pi = Probability of the company to experience financial distress

Xin = Variables - financial ratio variables

α = Constanta

β1, β9 = regression coefficient

e = foreign factor / disturbing variable outside free vaiabel

RESULTS AND DISCUSSION
Descriptive Test

Descriptive analysis provides an overview of all research variables as independent variables (independent variables) in predicting significantly for the possibility of financial distress. Using descriptive analysis can be obtained various information including mean or average, standard deviation, minimum and maximum values, variance, sum, range, kurtosis and skewnes, as in the table of descriptive test results below:

Table 4.2 Descriptive Statistics of Research

Description	Condition	N	Minimum	Maximum	Mean	Std. Dev.
CKPN	NFD	83	.05	7.56	1.5020	1.21646
	FD	17	.37	12.00	2.0275	2.72309
IPR	NFD	83	0.00	51.23	15.6813	8.82601
	FD	17	6.52	38.07	16.6500	7.93619
BOPO	NFD	83	55.33	98.88	84.2440	9.13703
	FD	17	63.59	150.77	82.9377	21.39424
FBIR	NFD	83	.68	61.61	14.7486	12.43413
	FD	17	.05	42.48	17.7647	14.35666
IRR	NFD	83	67.74	179.95	102.9295	15.93740
	FD	17	95.26	159.39	126.5510	19.53573
PDN	NFD	83	.01	6.09	1.6072	1.66429
	FD	17	.21	19.67	2.2535	4.59917
NIM	NFD	83	.01	7.99	2.7368	2.39719
	FD	17	-.70	8.24	3.7897	3.12509
INFLASI	NFD	83	.03	.08	.0492	.02197
	FD	17	.03	.08	.0434	.01929
JIBOR	NFD	83	.06	.08	.0691	.00984
	FD	17	.06	.08	.0720	.00963
Valid N (*listwise*)		100				

Source: secondary data reprocessed

The lowest CKPN value for nonfinancial distress banks is 0.05 percent and the highest CKPN value is 7.56 percent. Overall, the average CKPN from 2013 to 2017 is 1.502 percent. While the lowest value of CKPN is the condition of bank financial distress of 0.37 percent and the highest value of CKPN is 12.00 percent. Overall, the average CKPN from 2013 to 2017 is 2.02 percent.

The lowest IPR value for nonfinancial distress banks is 0.0 percent and the highest IPR value is 51.23 percent. Overall, the average IPR from 2013 to 2017 is 15.68 percent. While the lowest IPR value of financial distress banks is 6.52 percent and the highest IPR value is 38.07 percent. Overall, the average IPR from 2013 to 2017 is 16.65 percent.

The lowest BOPO value of nonfinancial distress banks is 55.33 percent and the highest BOPO value is 98.88 percent. Overall, the BOPO average from 2013 to 2017 is 84.24 percent. While the lowest BOPO value of financial distress banks is 63.59 percent and the highest BOPO value is 150.77 percent. Overall, the BOPO average from 2013 to 2017 is 82.93 percent.

The lowest FBIR value is non-financial distress bank at 0.68 percent and the highest FBIR value is 61.61 percent. Overall, the average FBIR from 2013 to 2017 is 14.74 percent. While the lowest FBIR value of financial distress banks is 0.05 percent and the highest FBIR value is 42.48 percent. Overall, the average FBIR from 2013 to 2017 is 17.76 percent.

The lowest IRR value of nonfinancial distress banks is 67.74 percent and the highest IRR value is 179.95 percent. Overall, the average IRR from 2013 to 2017 is 102.92 percent. While the lowest IRR value of financial distress banks is 95.26 percent and the highest IRR value is 159.39 percent. Overall, the average IRR from 2013 to 2017 is 126.55 percent.

The lowest PDN value of nonfinancial distress bank is 0.01 percent and the highest PDN value is 6.09 percent. Overall, the average PDN from 2013 to 2017 is 1,607 percent. While the lowest PDN value of bank financial distress is 0.21 percent and the highest NOP value is 19.67 percent. Overall, the average PDN from 2013 to 2017 is 2.25 percent.

The lowest NIM value for nonfinancial distress banks is 0.01 percent and the highest NIM value is 7.99 percent. Overall, the average NIM from 2013 to 2017 is 2.736 percent. While the lowest NIM value for financial distress banks was -0.70 percent and the highest NIM value was 8.24 percent. Overall, the average NIM from 2013 to 2017 is 3,879 percent.

The lowest INFLATION value of nonfinancial distress banks is 0.03 percent and the highest INFLATION value is 0.08 percent. Overall, the average INFLATION from 2013 to 2017 is 0.492 percent. While the lowest INFLATION value of bank financial distress was 0.03 percent and the highest INFLATION value was 0.08 percent. Overall, the average INFLATION from 2013 to 2017 is 0.434 percent.

The lowest JIBOR value for nonfinancial distress bank is 0.06 percent and the highest JIBOR value is 0.08 percent. Overall, the average JIBOR from 2013 to 2017 is 0.691 percent. While the lowest JIBOR value of bank financial distress is 0.06 percent and the highest JIBOR value is 0.08 percent. Overall, the average JIBOR from 2013 to 2017 is 0.072 percent.

Goodness Fit Model test results

The model that is hypothesized is fit or not, we can see the Log Likelihood value of 2 at the beginning of block or block 0 is 91,177 while the Log Likelihood value of -2 in block 1 is 60,193, here it decreases by 30,984 so it can be said that the model hypothesis is fit. To see whether the empirical data matches the model or not, it can be seen in the table below:

Table 4.3 Testing Results *Goodness Fit Model Hosmer and Lemeshow Test*

Step	Chi-square	df	Sig.
1	10.894	8	.208

The table above shows the Sig value of 0.208 greater than 0.05, which means that H0 is accepted.

Table 4.4 Results of measurement of Accuracy of Prediction

Classification Table[a]

		Predicted		
		KONDISI		Percentage Correct
	Observed	NON FD	FD	
Step 1	KONDISI NON FD	80	3	96.4
	FD	8	9	52.9
	Overall Percentage			89.0

a. The cut value is .500

The table above explains that the sample of banks that did not experience financial distress consisted of 83 bank data samples, while the results of model predictions in the table showed that there were 80 banks which were non financial distress while there were only 3 other banks experiencing financial distress. So, there are 3 predictions that are wrong and the accuracy of classification is 96.4%, where this value comes from 80/83. Then, the number of samples of banks experiencing financial distress from 17 bank samples, while from the model prediction results in the table above shows that there are only 9 bank data which are financial distress. So, there are 8 false predictions and the accuracy of the classification is 52.9%, where this value comes from 9/17.

Thus, overall, this model has classification accuracy of 89.0%. This means that from the 100 observations made by the research, there were 89 observations that were appropriate in their classification by the logistic regression model.

Table 4.5 The results of measuring the accuracy of predictions

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	CKPN	.567	.288	3.864	1	.049	1.763	1.002	3.102
	IPR	-.096	.045	4.604	1	.032	.908	.832	.992
	BOPO	-.011	.035	.093	1	.760	.989	.923	1.060
	FBIR	.046	.028	2.781	1	.095	1.047	.992	1.105
	IRR	.074	.019	14.714	1	.000	1.076	1.037	1.118
	PDN	-.019	.168	.013	1	.909	.981	.706	1.363
	NIM	.304	.161	3.564	1	.059	1.355	.988	1.859
	INFLASI	-8.367	41.014	.042	1	.838	.000	.000	189517166915429150000000000000000000.000
	JIBOR	-14.190	88.456	.026	1	.873	.000	.000	1.353E+69
	Constant	-8.757	8.913	.965	1	.326	.000		

a. Variable(s) entered on step 1: CKPN, IPR, BOPO, FBIR, IRR, PDN, NIM, INFLASI, JIBOR.

From the table above, it can be seen that the sig values for the variables BOPO, FBIR, PDN, NIM, INFLATION, JIBOR are 0.760, 0.095, 0.909, 0.059, 0.838, 0.873 which are above 0.05. This means that the six variables are not proven to influence or cannot predict the financial distress of a bank. Whereas for the CKPN, IPR, IRR variables with sig values of 0.049, 0.032, 0,000 which are below 0.05 so it can be concluded that CKPN, IPR and IRR can influence or can be used to predict the financial distress conditions of a bank.

Table 4.6 The magnitude of the influence of independent variables against Dependent Variables

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	60.193[a]	.266	.445

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

The values of Cox and Snell R Square and Nagelkerke R Square listed in the table above can be used to see the ability of the independent variable to explain the dependent variable. The magnitude of the influence of the independent variable on the dependent variable is 44.5% while the rest is influenced by other factors.

Credit Performance (CKPN) as a predictor of Financial Distress
Based on table 4.5 above shows that the liquidity ratio that is proxied by CKPN obtained results that are not significant at 0.049, and has a positive regression coefficient of 0.567. Then it can be concluded that the CKPN ratio has a significant influence or can be used as a predictor of financial distress and H1 conditions accepted. The results of this study are in line with the study of Laely Aghe Africa (2016) which states that CKPN does not significantly influence financial distress.

Liquidity Performance as a predictor of Financial Distress
Based on table 4.5 above shows that the liquidity ratio is proxied by IPR obtained a significant result of 0.032, and has a positive regression coefficient that is equal to 0.908. Then it can be concluded that investing policy ratio has a significant influence or can be used as a predictor of financial distress and H2 conditions accepted. The results of this study are in line with the study of Laely Aghe Africa (2016) which states that IPR does not significantly influence financial distress.

Market Performance as a predictor of Financial Distress
Based on table 4.5 above shows that the market ratio proxied by IRR obtained a significant result of 0,000, and has a positive regression coefficient that is equal to 0.074. Then it can be concluded that the IRR ratio has a significant effect or can be used as a predictor of financial distress and H3 conditions in the region. This is consistent with the study of Laely Aghe Africa (2016) which states that IRR has no effect or cannot be used as a predictor of financial distress.

Based on the results of the logistic regression analysis above shows that market ratios proxied by PDN obtained a non-significant result of 0.909, and has a negative regression coefficient that is equal to -0.019. Then it can be concluded that the PDN ratio does not have a significant effect or cannot be used as a predictor of financial distress and H4 conditions are rejected. This is consistent with the study of Laely Aghe Africa (2016) which states that PDN has no effect and cannot be used as a predictor of financial distress.

Operational Performance as a predictor of Financial Distress
Based on table 4.5 above shows that the operational ratios proxied by BOPO obtained results that are not significant at 0.760, and have a negative regression coefficient which is equal to -0.011. Then it can be concluded that the BOPO ratio does not have a significant effect or can be used as a predictor of financial distress and H5 conditions are rejected. This is consistent with the study of Laely Aghe Africa (2016) which states that BOPO has no effect or cannot be used as a predictor of financial distress.

Based on the results of the logistic regression analysis above shows that the operational ratios proxied by FBIR obtained results that are not significant at 0.095, and have a positive regression coefficient of 0.046. Then it can be concluded that the FBIR ratio does not have a significant effect or cannot be used as a predictor of financial distress and H6 conditions are rejected. This is consistent with the study of Laely Aghe Africa (2016) which states that it has no effect and cannot be used as a predictor of financial distress.

Profitability Performance as Predictor of Financial Distress.
Based on table 4.5 above shows that the profitability ratio proxied by NIM obtained a non-significant result of 0.059, and has a positive regression coefficient that is equal to 0.304. So it can be concluded that net interest margin does not have a significant effect or cannot be used as a predictor of financial distress and H7 conditions rejected. The results of this study are not in line with Ali Machsum Harahap's research (2015) which states that NIM has a significant effect on financial distress.

Macroeconomic Performance (JIBOR and Inflation) as predictors of Financial Distress
Based on table 4.5 above shows that macroeconomic variables that are proxied by JIBOR are not significant results of 0.873, and have a negative regression coefficient that is equal to -14.190. Then it can be concluded that the JIBOR ratio does not have a significant influence or can be used as a predictor of financial distress and H8 conditions rejected. This is not in line with the research of Mohd Norfian A (2014) which states that the base lending rate has a significant effect or can be used as a predictor of financial distress. However, the results of the study are in line with Djumahir (2007) and Rr. Iramani (2008) states that macroeconomic conditions proxied by interest rate sensitivity cannot predict financial distress of a company.

Based on the results of the analysis using logistic regression shows that macro variables that are proxied by inflation are not significant results of 0.838, and have a negative regression coefficient of -8.376. Then it can be concluded that inflation does not have a significant effect or cannot be used as a predictor of financial distress and H9 conditions are rejected. This result is in

line with the research conducted by Rahmidani (2013) which shows that macroeconomic indicators do not significantly influence financial distress.

CONCLUSION, IMPLICATION, ADVICE AND LIMITATIONS

The results of testing the hypothesis of this study are that the variable impairment loss, investing policy ratio, and interest rate ratio have a significant influence on the condition of financial distress at the national foreign exchange private bank. While other variables such as the ratio of operating expenses to operating income, fee based income ratio, net open position, net interest margin, and macro variables namely inflation, Jakarta interbank offered rate have no effect on financial distress.

In this study there are still limitations that affect the results of the study, namely the use of samples is only limited to national foreign exchange private banks, factors other than financial ratios used only inflation and JIBOR as macroeconomic variables.

Based on the conclusions and limitations that exist, then the suggestions that can be given to the next researcher are:

1. The researcher can then expand the number of samples from the entire population, for example using all national and non-foreign national private banks.
2. The next researcher can add macro variables that are used such as economic growth, unemployment rate and political parameters
3. The next researcher is expected to be able to add independent variables in order to add information about other financial ratios that can have a significant effect on financial distress conditions.
4. For investors to pay attention to financial ratios to assess a bank whether it is experiencing financial distress or not, before investors invest.

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