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THE IMPACT OF CAR, CREDIT RISK, ROA, LDR, AND OWNERSHIP STRUCTURE TOWARDS FINANCIAL DISTRESS

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ABSTRACT

This study aims to determine the effect of Capital Adequacy Ratio (CAR), Credit Risk, Return on Assets (ROA), Loan-to-Deposit Ratio (LDR), Institutional Ownership and Managerial Ownership on Financial Distress in the conventional commercial banking sector listed on the Indonesia Stock Exchange (IDX) during the 2018-2020. This study used 15 conventional commercial banks as samples, which were then analyzed with multiple linear regression analysis techniques and panel data models. The results of this study show that CAR, ROA, and LDR have a positive and significant effect on Financial Distress; Credit Risk and Institutional Ownership have a negative and insignificant effect on Financial Distress; and Managerial Ownership has a positive and insignificant effect on Financial Distress. Other results, namely CAR, Credit Risk, ROA, LDR, Institutional Ownership, and Managerial Ownership simultaneously have a significant influence on Financial Distress.

Keywords: *Capital Adequacy Ratio, Credit Risk, Return on Assets, Loan-to-Deposit Ratio, Institutional Ownership, Managerial Ownership, Financial Distress*

1. INTRODUCTION

Every company, both in the non-financial sector such as manufacturing, tourism, and others as well as the financial sector such as banking, of course has the main goal of maintaining business continuity [1]. By maintaining the sustainability of a company, it not only benefits the company, but also has a good impact on the country's economy. As stated in the [2], the banking sector is expected to play a maximum role in improving and strengthening the national economy. Thus, the sustainability of the banking sector is considered to have an important role in the economic growth of a country, which previously attached to [3]. To maintain the sustainability of banking, this can be done by avoiding the risk of bankruptcy, and predicting financial distress conditions or Financial Distress so that internal and external parties can find out how the financial condition and performance of the banking sector are, and ways to overcome them can be made if needed [4]. Furthermore, there are several factors, both internally and externally, that can cause Financial Distress conditions, such as (1) low liquidity levels; (2) there is bad credit; (3) lack of company revenue; and (4) poor management performance within the company [3, 5, 6]. Not only that, with conditions such as the outbreak of coronavirus disease (COVID-19) and a decline in financial aspects such as ROA can also cause Financial Distress.

Related Work

In prior studies, [3] and [7] stated that CAR has a negative and significant impact on Financial Distress. Meanwhile, [5] stated that CAR has a positive and significant impact on Financial Distress. Furthermore, for Credit Risk, [3] and [6] stated that Credit Risk has a positive and significant impact on Financial Distress. Meanwhile, [8] stated that Credit Risk has a negative and significant impact on Financial Distress. ROA stated by [3] and [7], there is a negative and significant impact on Financial Distress. However, [5] stated that ROA has

a positive and significant impact on Financial Distress. For LDR, [3] and [9] stated that there was a positive and significant impact on Financial Distress. However, different results were stated by [8], namely LDR has a negative and significant impact on Financial Distress. Apart from using financial aspects, this research also adds another aspect, namely share ownership. For Institutional Ownership, [4] stated that there was a positive and significant impact on Financial Distress. However, [9] and [10] stated that Institutional Ownership has a negative and significant effect on Financial Distress. Furthermore, for Managerial Ownership, [4] stated that Managerial Ownership has a positive and significant influence on Financial Distress. However, [10] stated that Institutional Ownership has a negative and significant influence on Financial Distress.

Our Contribution

There are several additions compared to the research conducted by [3] earlier. Where in this study using the conventional commercial banking sector on the Indonesia Stock Exchange (IDX) during the 2018-2020 period, and using the same variables as the prior study such as Capital Adequacy Ratio, Credit Risk, Return on Assets and Loan-to-Deposit Ratio, with some additional variables as the Ownership Structure, namely Institutional Ownership and Managerial Ownership.

Paper Structure

Moreover, this paper is designed as follows: Section 2 contains the grand theories, variables, and hypotheses used in this study. Section 3 describes sampling and surveying methods. Section 4 describes the results and considerations achieved. Lastly, Section 5 describes future conclusions and suggestions.

2. BACKGROUND

Signaling Theory

Signaling theory is based on the existence of information asymmetry that is known to internal parties with external parties of the company, where the understanding of internal parties is considered better. This can lead to instability in the capital structure. With the understanding and ability of internal parties such as managers, they can provide an assessment of the company's prospects, which will then be sent a sign or signal to external parties such as stock offerings and voluntary disclosure of financial statement information [11]. Not only that, [12] stated that the voluntary financial reporting initiative can indicate the company has a credible performance and overcomes the uncertainty of external parties such as the public, government, other companies and investors on company information.

Agency Theory

Agency theory is based on the agency relationship and the importance of ownership structure in a company. Furthermore, agency theory is stated as there are differences in goals and interests between management and parties not involved in management decisions [12, 13]. The difference in interest in question is that the management aims to maximize their welfare, while the owner aims to maximize the value of the company. As a result of these differences in objectives, there are conflicts and agency costs, which need to be minimized by disclosing financial statement information and monitoring the company's performance.

Financial Distress

Financial distress is stated as the company's inability to meet its financial obligations to creditors, stated by [3]. In addition, [11] state that financial distress is related to the lack of a company's cash flow rate. Thus, financial distress can be concluded as a condition that can give a signal that the company is experiencing a financial deficit and is likely to experience financial difficulties, even bankruptcy. In other words, this condition can also give a signal to investors about the condition of the company.

Capital Adequacy Ratio

[8] defines the Capital Adequacy Ratio (CAR) as a ratio to determine the capital adequacy of the bank in bearing the risk of the credit provided. In banking, capital adequacy is an important aspect that must be considered. This is because a lack of capital or poor quality of capital can hinder the defense of a bank [1]. Furthermore, the minimum CAR that banks must have is 8% [5]. Where the higher the CAR level, it indicates the bank has more credit to offer which can increase the bank's profits, so that the bank's ability to bear risks is getting better, and can reduce the possibility of financial distress. Under these conditions, CAR is considered to have a relationship with signaling theory, because increasing CAR can give a positive signal to investors [6].
H1: CAR has a negative and significant effect on Financial Distress.

Credit Risk

[14] defines credit risk as the risk resulting from a borrower's failure to fulfil its obligations to the bank. In other words, credit risk has the ability to manage financing that has risk. Thus, credit risk is considered as one of the important aspects in banking sustainability [3]. Where the higher the level of credit risk, it can increase the cost to cover the risk of loss, and can reduce the level of profit of a bank, and can increase the possibility of financial distress ([3]). Under these conditions, credit risk is considered to have a relationship with signaling theory, where increasing credit risk can give a bad signal to investors [8].
H2: Credit Risk has a positive and significant impact on Financial Distress.

Return on Assets

[5] define Return on Assets (ROA) as a ratio used to determine the performance of company management, especially regarding profitability, where a good level of profitability indicates a bank is able to bear the risks that may occur [3]. Furthermore, based on [15], the minimum ROA that banks must have is 1.5%. Where the higher ROA level indicates an increasing level of profit and asset processing is considered more efficient, so that it can strengthen bank capital and bear the risk of loss, as well as reduce the possibility of financial distress. Under these conditions, ROA is considered to have a relationship with signaling theory, where increasing ROA can provide a good signal to investors [5].
H3: ROA has a negative and significant impact on Financial Distress.

Loan-to-Deposit Ratio

[16] defines the Loan-to-Deposit Ratio (LDR) as a ratio to measure the company's liquidity level, by measuring the bank's ability to channel funds to related third parties. Furthermore, the minimum LDR that banks must have is 78-92% [8]. Where the higher the LDR level

indicates the decreasing ability of bank liquidity, and can increase the possibility of financial distress [3]. Under these conditions, the LDR is considered to have a relationship with signaling theory, where the higher the LDR level can give a bad signal to investors.
H4: LDR has a positive and significant impact on Financial Distress.

Institutional Ownership

[17] defines Institutional Ownership as the capacity of shares owned by non-bank institutions or entities, both domestic and foreign, which have the function to control management activities and the effectiveness of asset use [4]. Where the higher the level of Institutional Ownership indicates the tighter supervision carried out by investors on the company's performance, so as to increase profits, and reduce the possibility of financial distress. Under these conditions, Institutional Ownership is considered to have a relationship with agency theory, where the higher the level of Institutional Ownership, it can increase supervision over management performance, and reduce agency conflicts and costs, as well as prevent management from doing work and making decisions only for their own interests [10, 18].
H5: Institutional Ownership has a negative and significant impact on Financial Distress.

Managerial Ownership

[4] define Managerial Ownership as the amount of shareholder capacity by the management, including the board of directors, whose functions such as providing added value to the company because managers directly bear the risk and decisions will be based on the interests of the company ([17]). Where the higher the level of Managerial Ownership, it can increase the responsibility of the management in making decisions, and improve the company's performance, as well as reduce the possibility of financial distress. Under these conditions, Managerial Ownership is considered to have a relationship with agency theory, where the higher level of Managerial Ownership can make managers feel the risks and responsibilities of shareholders, so that the interests of both parties are aligned, and can reduce conflicts and agency costs, due to the existence of increased supervision of management performance [10, 18].
H6: Managerial Ownership has a negative and significant impact on Financial Distress.

3. METHODS

The sample of this study is 15 conventional commercial banks listed on the Indonesia Stock Exchange (IDX) during the 2018-2020 period. This study uses a purposive sampling technique, using secondary data in the form of financial and annual reports contained in the BEI and on the website of each bank, to determine the effect of Capital Adequacy Ratio, Credit Risk, Return on Assets, Loan-to-Deposit Ratio, Institutional Ownership, and Managerial Ownership of Financial Distress, which was then analyzed using the EViews 12 Student Version program.

Variables' Operationalization

Financial Distress

[3] states that the Modified Altman Z-Score is more suitable for predicting the financial health condition of companies in the manufacturing and non-manufacturing industries, including banking, namely:

$$Z'' = 6.56\ (X1) + 3.26\ (X2) + 6.72\ (X3) + 1.05\ (X4)$$

Description:
X1 : Net Working Capital / Total Asset
X2 : Retained Earnings / Total Asset
X3 : EBIT / Total Asset
X4 : Equity Market Value / Book Value of Debt

[19] states that the results of the Z-Score model are assessed based on the following criteria: (1) Z > 2.99, indicating a "Safe" Zone; (2) 1.81 > Z < 2.99, indicating "Grey" Zone; and (3) Z < 1.81, indicating the "Distress" Zone.

Capital Adequacy Ratio

$$CAR = \frac{\text{Capital}}{\text{Risk Weighted Assets}}$$

Description:
CAR : Capital Adequacy Ratio

Credit Risk

$$RAROC = \frac{\text{Return}}{\text{Risk Weighted Assets}}$$

Description:
RAROC : Credit Risk

Return on Assets

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$$

Description:
ROA : Return on Assets

Loan-to-Deposit Ratio

$$LDR = \frac{\text{Loan}}{\text{Total Third Fund Party (Deposit)}}$$

Description:
LDR : Loan-to-Deposit Ratio

Institutional Ownership

$$INS = \frac{\text{Institutional Ownership}}{\text{Total Shares Outstanding}} \times 100\%$$

Description:
INS : Institutional Ownership

Managerial Ownership

$$\text{MNG} = \frac{\text{Managerial Ownership}}{\text{Total Shares Outstanding}} \times 100\%$$

Description:
MNG : Managerial Ownership

Data Analysis Methods

This study uses data analysis techniques such as descriptive statistical and multiple linear regression analysis [20], and uses a panel data model. [21] stated the advantages of using panel data, among others: (1) it can take into account individual heterogeneity explicitly; (2) can be used to test and build more complex behavioral models; (3) can be used in research with dynamic conditions; (4) can provide more informative, varied data, reduce collinearity between variables, increase degrees of freedom, and the results obtained are more efficient; (5) can be used to study complex behavioral models; and (6) can minimize bias due to the aggregation of individual data. For these advantages, it is stated that there is no need to test the classical assumptions.

Descriptive Statistical Analysis

According to [22], descriptive statistics are statistical techniques used to describe data that has been collected or in samples. Descriptive statistical techniques include data presentation, both with tables, graphs, and diagrams, as well as data calculations, which include mode, median, mean, decile, percentile, standard deviation, and percentage calculation.

Multiple Linear Regression Analysis

According to [20], multiple linear regression analysis is a statistical technique that is carried out to create models, find out and investigate the direction and influence between two or more independent variables (X) on the dependent variable (Y). Multiple linear regression analysis models used in this study is:

$$Y = a + b1\ X1 + b2\ X2 + \ldots + bn\ Xn + e$$

4. FINDINGS AND DISCUSSIONS

Descriptive Statistical Analysis Results

Based on Table 1, it is known that the average Financial Distress (FD) is 2.042219, which indicates the average financial condition of banks is between 1.81 > Z < 2.99, which means they are in the “Grey” Zone; Capital Adequacy Ratio (CAR) of 0.220356, which indicates an average bank capital adequacy of > 8%, which is 22.04% so that it is considered to meet the minimum required requirements; Credit Risk (RAROC) of 0.019658, which indicates that the average ability of banks to manage credit risk is relatively low at 1.97%; Return on Assets (ROA) is 0.013372, which indicates that the bank's average profitability is < 1.5%, which is 1.34% so it does not meet the required minimum ROA; Loan-to-Deposit Ratio (LDR) of 0.909609, which indicates the average ability of banks to disburse loans with funds to third

parties is between 78-92%, which is 90.96% so that it is still within the required LDR safe limit; Institutional Ownership (INS) of 0.614653, which indicates the average institutional ownership of banks is considered relatively high with a percentage of 61.47%; and Managerial Ownership (MNG) has a mean value of 0.003532, which indicates that the average bank managerial ownership is considered relatively low with a percentage of 0.35%.

Table 1. Descriptive Statistical Analysis Results

	FD	***CAR***	***RAROC***	***ROA***	***LDR***	***INS***	***MNG***
Mean	2.042219	0.220356	0.019658	0.013372	0.909609	0.614653	0.003532
Median	2.082137	0.212090	0.018570	0.013531	0.885972	0.627095	0.000173
Maximum	3.623223	0.472930	0.040799	0.031343	1.622960	0.971062	0.048663
Minimum	0.622412	0.154547	0.000205	0.000185	0.557106	0.060309	0.000016
Std. Dev.	0.675172	0.059749	0.012754	0.008408	0.198862	0.306298	0.012159
Skewness	0.415148	2.332066	0.194887	0.159810	1.557812	-0.353656	3.465798
Kurtosis	2.669301	9.510838	1.935861	2.208942	6.737193	1.682429	13.03415
Jarque-Bera	1.497662	120.2721	2.408092	1.364867	44.38823	4.193031	278.8711
Probability	0.472919	0.000000	0.299978	0.505386	0.000000	0.122884	0.000000
Sum	91.89986	9.916033	0.884608	0.601745	40.93241	27.65938	0.158956
Sum Sq Dev	20.05771	0.157079	0.007158	0.003110	1.740034	4.128018	0.006505
Observations	45	45	45	45	45	45	45

Multiple Linear Regression Analysis Results

According to the results of Multiple Linear Regression Analysis, the Multiple Linear Regression Analysis Model used in this study is:

$$FD_{it} = \alpha + \beta_1 CAR_{it} + \beta_2 RAROC_{it} + \beta_3 ROA_{it} + \beta_4 LDR_{it} + \beta_5 INS_{it} + \beta_6 MNG_{it} + \varepsilon_{it}$$

Coefficient of Determination (R^2) Results

Table 2. Coefficient of Determination (R^2) Results

R-squared	0.566745
Adjusted R-squared	0.498336

Based on Table 2, the value of Adjusted R^2 is 0.498336 or 49.83%, which tends to approach zero so that the independent variable is more limited in explaining the dependent variable, which is 49.83%, and the remaining 0.501664 or 50.16% can be explained by other independent factors or variables other than those used in this study.

Simultaneous Significance Test (F-Test) Results

Table 3. Simultaneous Significance Test (F-Test) Results

F-statistics	8.284691
Prob (F-statistics)	0.000009

Based on Table 3, the probability value of F is 0.000009, indicating the probability value of F < significance value of 0.05 (α = 5%). Thus, it can be concluded that the regression analysis model has met the 95% confidence level and the independent variables used simultaneously have a significant effect on the dependent variable used.

Partial Regression Coefficient Test (t-Test) Results

Table 4. Partial Regression Coefficient Test (t-Test) Results

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	-0.723000	0.548289	-1.318648	0.1952
CAR	5.592067	1.568699	3.564779	0.0010
RAROC	-36.23689	21.14088	-1.714067	0.0947
ROA	72.39718	30.93672	2.340170	0.0246
LDR	1.581273	0.440624	3.588715	0.0009
INS	-0.295505	0.219454	-1.346550	0.1861
MNG	5.804977	8.250625	0.703580	0.4860

Based on Table 4, it can be seen that the CAR is known to have a t-test significance value of 0.0010, where the significance value of the t-test < 0.05 significance value (α = 5%), indicates a significant effect, and it is known that the regression coefficient value is 5.592067, indicating that there is a positive influence. Thus, it can be said that CAR has a positive and significant effect on Financial Distress, and H1 is rejected. This proves the statement of [5, 8, 9], namely the higher of CAR level implies the higher the risk of financial distress in the bank. In addition, the higher the CAR level indicates the bank can give a positive signal to investors because the bank has sufficient capital, so that the risk of loss due to credit can be overcome and can minimize the possibility of financial distress.

Second, Credit Risk (RAROC) is known to have a t-test significance value of 0.0947, where the significance value of the t-test > 0.05 significance value (α = 5%), indicates that there is no significant effect, and it is known that the regression coefficient value is -36,23689, indicating a negative influence. Thus, it can be concluded that there is a negative and insignificant effect between Credit Risk on Financial Distress, and H2 is rejected. This proves the statement of [23], where the Credit Risk value cannot absolutely explain the existence of financial distress conditions, because the credit provided only includes third party credit. In addition, the level of credit risk cannot give any signal to investors because the higher the level of credit risk does not result in the bank experiencing financial distress, and vice versa.

Third, ROA is known to have a t-test significance value of 0.0246, where the significance value of the t-test < 0.05 significance value (α = 5%), indicates a significant effect, and the known regression coefficient value is 72.39718, indicating a positive influence. Thus, it can be said that ROA has a positive and significant effect on Financial Distress, and H3 is rejected. This proves the statement of [5, 9], namely the higher the level of ROA cannot guarantee that there is no possibility of financial distress to the bank. In addition, the higher the ROA level indicates the bank can give a positive signal to investors because the bank is considered able to manage its assets effectively, so as to reduce the possibility of financial distress.

Fourth, LDR is known to have a t-test significance value of 0.0009, where the significance value of the t-test < 0.05 significance value (α = 5%), indicates a significant effect, and it is

known that the regression coefficient value is 1.581273, indicating a positive influence. Thus, it can be said that LDR has a positive and significant effect on Financial Distress, and H4 is accepted. This proves the statement of [3, 9], where the higher the LDR level, the lower the bank's liquidity ability and can increase the possibility of financial distress, and vice versa. In addition, the higher the LDR level can give a negative signal to investors because the possibility of financial distress also increases.

Fifth, Institutional Ownership (INS) is known to have a t-test significance value of 0.1861, where the t-test significance value > 0.05 significance value (α = 5%), indicating that there is no significant effect, and the known regression coefficient value is -0.295505, indicating a negative influence. Thus, it can be said that there is a negative and insignificant effect between Institutional Ownership on Financial Distress, and H5 is rejected. This proves the statement of [17], namely that share ownership by institutions is considered centralized and does not play an active role in controlling its management. In addition, the results of this study reject agency theory, because the level of INS does not have a significant effect between the two variables [24].

Lastly, Managerial Ownership (MNG) is known to have a t-test significance value of 0.4860, where the significance value of the t-test > 0.05 significance value (α = 5%), indicates that there is no significant effect, and it is known that the regression coefficient value is 5.804977, indicating that there is a positive influence. Thus, it can be said that there is a positive and insignificant effect between Managerial Ownership on Financial Distress, and H6 is rejected. This proves the statement of [24], namely that there are limitations to the policy of implementing share ownership by the management. In addition, the results of this study reject agency theory, because the MNG level does not have a significant effect between the two variables.

5. CONCLUSIONS

The conclusions obtained from the results of this study are:
1) CAR, ROA, LDR have a positive and significant impact on Financial Distress.
2) Credit Risk and Institutional Ownership have a negative and insignificant impact on Financial Distress.
3) Managerial Ownership has a positive and insignificant impact on Financial Distress.
4) Independent variables used, such as Capital Adequacy Ratio, Credit Risk, Return on Assets, Loan-to-Deposit Ratio, Institutional Ownership, and Managerial Ownership simultaneously have a significant influence on the dependent variable, namely Financial Distress.

Implications for further research are: (1) Use other sectors to see the effect of possible occurrence of Financial Distress such as the manufacturing sector; (2) Use a longer research period so that the results are more accurate; (3) The coefficient of determination's result in this study is 49.83%, while 50.16% cannot be explained by the independent variables in this study. Therefore, other independent variables can be used for further investigation to cover both financial and non-financial aspects.

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