

The Role of Profit Management as an Intervening Variable in Mediating the Effect of Credit Risk on Financial Distress

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Abstract: The purpose of this paper is to build a predictive model of financial distress in the banking sector with accrual-based earnings management as an intervening variable in mediating the effect of credit risk on financial distress. The sampling method used in determining the sample is 'purposive sampling'. The number of sample selected in this paper was 36 conventional commercial banks which experienced a decrease in profits during the 2016-2020 period with a total of 180 observations. To analyze the data, the panel data regression method was applied. The result shows that ROA and LDR have an effect positively on financial distress. Likewise, credit risk as the main factor has an effect negatively on financial distress, and credit has an effect positively on earnings management.

Keywords: Earnings Management, Financial Distress.

JEL Classification: E51, M10, M41, M48.

1. INTRODUCTION

The Covid 19 pandemic has been running for 3 years and has significantly changed social life around the world. In particular, the financial sector is part of the economy that needs banking services, but the lockdown policy that has been enforced almost all over the world has had an impact on decreasing banking activity, thereby reducing bank revenues, due to a large number of non-performing loans and restrictions on international transactions. Garr (2013), Gup, Giziroglu, and Kirkan (2007), and Zribi and Boujelbène (2011) stated that banks should be able to manage and control credit risk properly and effectively because it is the main goal of banks and an important component of risk management for the long-term success of every bank activity.

Banking has functions as a financial intermediary institution, because banks are considered capable of accommodating the needs of fund owners and fund users. Its function is as an agent by collecting third-party funds that contain monitoring costs, liquidity costs and price risk arise, in addition to the emergence of information asymmetry which will cause conflicts of interest. Baldwin and Mason (1983) argued that when a company or a business cannot fulfill its financial obligations, it can be said to be entering a condition of financial distress. It is supported by several studies which state that credit risk has an effect positively on financial distress, including Berger and DeYoung (1997), Brownbridge (1998), Fukuda, Kasuya, and Nakajima (2006), Rahman et al.

(2004), and Zaki, Bah, and Rao (2011). While research results have a negative effect, named Abdelaziz, Rim, and Helmi (2022), Kablay and Gumbo (2021), Lee and Mullineaux (2004), and Migliardo and Forgiione (2018). An example is research of Isanzu (2017) argued that non-performing loans in Chinese banking in the 2008-2014 period had an influence negatively on financial performance. Research result from Gadzo, Kportorgbi, and Gatsi (2019) found that credit risk had a negative impact on financial performance in an empirical study of 24 universal banks in Ghana.

There are still inconsistent results regarding the influence of credit risk on financial distress, so this research takes the topic of financial distress by placing the earnings management variable as the mediating effect of credit risk on financial distress. Apart from credit risk, other factors can affect financial distress, including Returns on Asset and Loan to Deposits ratio. This paper aims to analyze and determine the influence partially of credit risk, returns on asset, loans to deposit ratio, and earning management that could mediate the effect of credit risk on financial distress using a sample of conventional commercial banks in Indonesia for the 2016-2020 period.

2. LITERATURE REVIEW

2.1. Financial Distress

Baldwin and Mason (1983) argue that the condition of a corporate that is unable to fulfill its financial obligations means that the company is entering a condition of financial distress. Whitaker (1999) and Elloumi and Gueyié (2001) define financial distress as cash flow in the first year, less

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than “current maturities' long-term debt”. Banks that can fulfill their obligations will avoid financial distress. It is similar to Andrade and Kaplan (1998), Asquith, Gertner, and Scharfstein (1994), Whitaker (1999), and Wruck (1990) which define financial distress as a company's failure to fulfill its obligations.

2.2. Credit Risk

Credit risk was the most substantial risk faced operationally by a bank. In other word, the success of business for a bank depends on careful measurement and a higher level of efficiency in managing credit risk than any other risk (Giesecke, 2004). Credit risk is a total or partial loss of loans disbursed (outstanding loans) due to failure to manage credit (default risk). Therefore, Gups et al. (2007) state that the important factor of bank failure is credit risk. Credit risk is a non-performing loan (NPL) where the greater the NPL rate, the higher the formation of the cost of allowance for impairment losses on earning assets which is it would reduce the profit (Rahman et al., 2004). Managing the credit risk in a banking industry was a main component of risk management. Therefore, it should be managed efficiently (Zribi and Boujelbène, 2011). Based on the description that has been stated above, we formulate the first hypothesis:

H₁: Credit risk has an effect negatively on financial distress (Z-Score)

2.3. Profit Management

Beneish (2001) argues that earnings management is the impact of an imbalance of interests between owners and management. Shippers (1989) put forward an intervention on earnings management reporting on external financial reporting methods with a specific purpose and intentionally for several personal gains called earnings management, without causing a change in profitability (Fischer and Rosenzweig, 1995). Healy and Wahlen (1999) stated that it is presented to stakeholders to determine the company's contract decisions. Measurement of earning management in this paper uses the total accrual formula of Healy (1985). Profit is net income (Hornrgren, Jensen, and Beaver, 1997). Profits are often the target of engineering to maximize personal interests and will harm shareholders (Eisenhardt, 1989). Shippers (1989) stated that the engineering is done by intervening in external financial reports. Based on the above description, we propose the hypothesis:

H₂: Credit risk has an effect positively on earnings management

Conditions of financial difficulties could be caused by a company in reporting the reduced and increased the earnings. Such opportunistic actions are called earning management. This aims to manipulate the amount of profit reported to several stakeholders about the company's performance. It could be to influence the results of agreements or contracts which are very dependent on the reported accounting numbers. Based on the description that has been stated above, the hypothesis could be formulated as follows:

H₃: Earnings management has an effect negatively on financial distress (Z-Score)

2.4. Profitability

Profitability is an ability of corporate to create profit. Assuming the bank increases its credit loss reserves, there will be a decrease in reported profits and affect bank profitability (Rahman et al., 2004). Opinion from Hofer (1980) and Whitaker (1999) suggest that companies that lose in several periods will cause financial distress. Based on the description that has been stated above, we formulate the fourth hypothesis:

H₄: Profitability has an effect positively on financial distress

2.5. Liquidity

In unstable economic conditions, banks will strengthen their capital structure by adding to existing capital. The greater the capital, the stronger it will be in facing risk. Following the theory of risk absorption, namely a bank in difficult conditions will further strengthen its capital and be careful in extending credit (Berger and DeYoung, 1997). Based on the description of this variable, we develop the hypotheses formulation as follow:

H₅: Liquidity has an effect positively on financial distress

H₆: Profit management can mediates the relationship between credit risk and financial distress

According to explanation and development of the hypothesis, we create the research model as shown at Fig. (1).

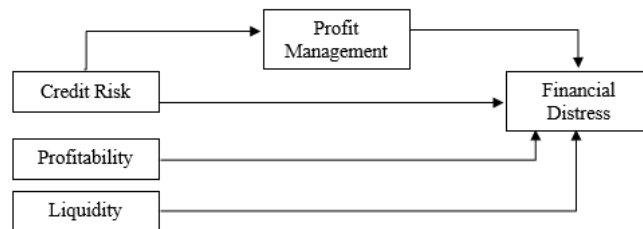


Fig. (1). Research Model.

3. RESEARCH METHODOLOGY

This research is a causality research that aims to test the hypothesis about a causal relationship between one or more variables with one of several other variables. This study develops a model that is expected to explain causality between the variables analyzed.

3.1. Population and Sample

A population is a group consisting of all elements that can be used to make some conclusions (Schindler and Cooper, 2006). An object, a group of people, all members, an organization, or a collection that has been formulated by researchers is a population. The population in this paper includes all conventional commercial banks operating in Indonesia as of 31 December 2020 based on data from the Financial Service Authority.

The sample size should be as large as possible, because the larger the sample size, the more it could represent the shape and characteristic of population (Gay and Diehl, 1992). To determine the sample, we use nonprobability sampling method, namely purposive sampling. This method is a way

to determine the sample applying certain consideration (Sugiyono, 2013). The criteria used in this paper are (1) all conventional commercial banks registered to the Otoritas Jasa Keuangan during the 2016-2020 period, (2) all conventional commercial banks that publish complete annual financial reports during the 2016-2020 period, namely 92 banks, (3) all banks have the complete data needed for measuring the research variables.

3.2. Data Collection Technique

To collect the data analyzed in this paper, the techniques used were literature and documentation studies. Literature study in this paper by looking for relevant and valid references. Meanwhile, documentation is carried out by collecting secondary data, namely time-series set data in the form of financial report annually from all conventional commercial banks operating in Indonesia for the period 2016-2020.

3.3. Data Analysis Technique

After all the variables are calculated, a descriptive analysis is performed using the mean, median, maximum, minimum, and standard deviation (Winarno, Hidayati, and Darmawati, 2015). Descriptive analysis was also carried out by presenting tables and graphs of the results of the observations made. This descriptive analysis is used to find out what variables cause financial distress in conventional banking in Indonesia.

Warp PLS is used for testing paper hypotheses, by determining conceptual models, algorithm methods, resampling, path diagrams, model evaluation, and reporting the results found (Ulum, Ghozali, and Purwanto, 2014). To find out the value of path analysis, Warp PLS 4 software is used to analyze. Hypothesis testing is used by determining a 95 percent confidence level or an alpha of 5 percent.

4. RESULTS AND DISCUSSION

4.1. Results

From the existing criteria, 36 samples of conventional commercial banks were obtained from a population of 151 conventional commercial banks in Indonesia with a total of 180 observations. This paper aims to develop new theoretical approaches. This study seeks to resolve the conceptual controversy from the different results regarding the effect of credit risk as an exogenous variable on financial distress as an endogenous variable. Several exogenous variables are used to identify conditions of financial distress other than credit risk, namely profitability (ROA), liquidity (LDR), and earnings management. Descriptive statistics on research variables are presented in Table 1.

Table 1. Descriptive Statistics.

| Variables | Minimum | Maximum | Average | Std. Dev |
|-----------------------------|---------|---------|---------|----------|
| Financial Distress(Z-Score) | -1.4575 | 4.3896 | 1.3341 | 0.6204 |
| Credit Risk(Net NPL) | 0.1100 | 9.9200 | 1.8495 | 1.4327 |
| Earnings Management(TAit) | -0.2758 | 0.2552 | -0.0038 | 0.0615 |

| Variables | Minimum | Maximum | Average | Std. Dev |
|--------------------|---------|---------|---------|----------|
| Profitability(ROA) | -7.4700 | 4.9600 | 1.3233 | 1.9126 |
| Liquidity(LDR) | 55.3500 | 119.76 | 89.7075 | 11.7890 |

Financial Distress. The dependent variable, financial distress has a Z-Score in conventional banking ranging from -1.4575 to 4.3896 with an average value of 1.3341. The non-manufacturing Z-Score Altman Z-Score is categorized into 3 categories, namely:

- If Z-Score value is less than 1.22, the company is in a distress zone.
- If Z-Score value between 1.22 and 2.9, it is in the gray zone.
- If Z-Score is more than 2.9, the company is in the safe zone.

Based on the descriptive analysis in general, conventional banking in Indonesia, of the total sample, has an average value of 1.3341, which is included in the "gray" category. When viewed individually the Z-Score results vary, meaning that there are banks that are experiencing distress and some are not experiencing distress or are in a safe zone.

Credit Risk (Net NPL). The results of descriptive statistics for the credit risk variable suggest that the range value is from 0.11 to 9.92. This research measures credit risk using a proxy of net non-performing loan. The higher the net non-performing loan value indicates that the credit risk experienced by banks is higher, due to problematic or bad credit. Based on the results of descriptive statistics, the average non-performing value for all sample companies is 1.8495 percent. It means that in general, non-performing loans of conventional banking in Indonesia is still relatively safe (still below 5 percent).

Earnings Management. Table 1 informs that earning management value has a range from -0.2758 to 0.2552, and the average value is -0.0038. The total accrual value is negative, indicating that the company is carrying out earnings management practices to make the company's profits lower, while the total accrual value is positive, indicating that the company is practicing earnings management by making higher profits. Based on the average total accrual value it is known to be -0.0038. From this description, it can be interpreted that there are indications that conventional banking in Indonesia practices earnings management by making company profits lower.

Profitability (ROA). Descriptive statistical results for the profitability variable, amounted to -7.47 percent to 4.96 percent, with an average value of 1.3233 percent. In this study, the measure of profitability uses ROA (Return on Assets) as the proxy. A negative ROA indicates that the company is experiencing losses, while a positive ROA indicates that the company can record profits. Based on the results of descriptive statistics, the most severe losses experienced by banks in the research sample were -7.47 percent, and the highest bank profits in the research sample were 4.96 percent. The average shows the the ROA value is 1.3233, meaning that in Indonesia the banking conditions are categorized as good, because they can record positive profits.

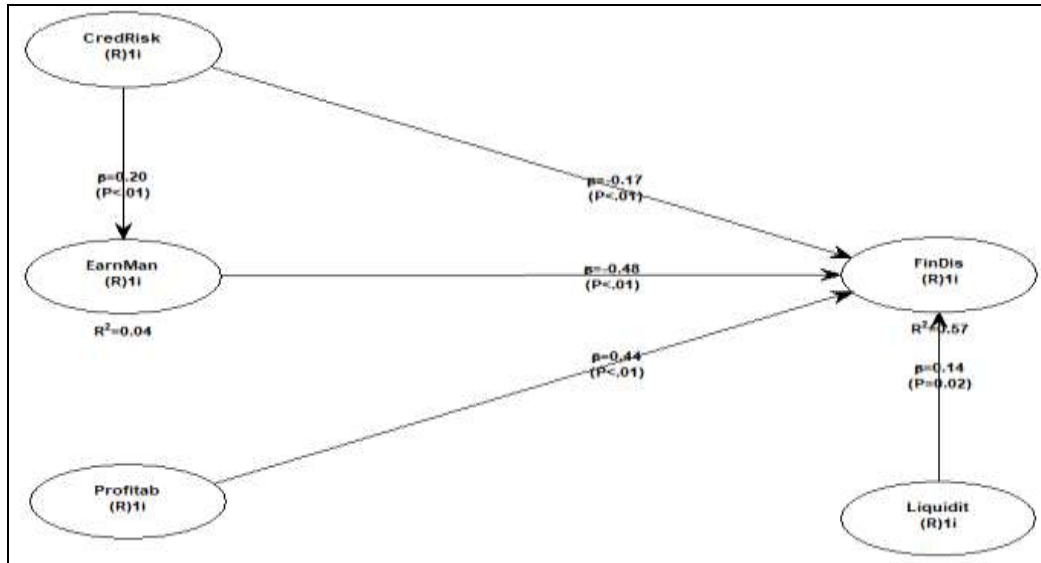


Fig. (2). Results of Analysis with PLS Warp.

Table 2. Results of Causality Analysis between Variables.

| Causality between Variables | Relationship Direction | Coefficient (β) | P-Value | Hypothesis Decision |
|---|------------------------|-------------------------|---------|---------------------|
| Credit risk → Financial distress | - | -0.170 | 0.007 | Be accepted |
| Credit risk → Earnings management | + | 0.203 | 0.002 | Be accepted |
| Earning management → Financial distress | - | -0.479 | 0.001 | Be accepted |
| Profitability → Financial distress | + | 0.441 | 0.001 | Be accepted |
| Liquidity → Financial Distress | + | 0.139 | 0.021 | Be accepted |

To conduct the Sobel test

Details can be found in Baron and Kenny (1986), Sobel (1982), Goodman (1960), and Mackinnon, Warsi, and Dwyer (1995). Insert the a , b , s_a , and s_b into the cells below and this program will calculate the critical ratio as a test of whether the indirect effect of the IV on the DV via the mediator is significantly different from zero.

| Input: | Test statistic: | Std. Error: | p-value: |
|-------------|---------------------------|-------------|------------|
| a 0.203 | Sobel test: -2.74864481 | 0.03537634 | 0.00598422 |
| b -0.479 | Arolian test: -2.72546144 | 0.03567726 | 0.00642117 |
| s_a 0.068 | Goodman test: -2.77243004 | 0.03507284 | 0.00556395 |
| s_b 0.068 | Reset all | Calculate | |

Fig. (3). Mediation Calculation Results with the Sobel Method.

Liquidity (LDR). Descriptive statistical results for the liquidity variable range from 55.35 to 119.76 percent, and the average value is 89.70 percent. This study uses LDR (Loan to Deposit Ratio) as a proxy for liquidity. LDR is a comparison between the credit extended by banks and third-party funds collected by banks (savings deposits, current accounts, and time deposits). LDR provisions based on Bank Indonesia regulations are 78 percent to 92 percent. Based on the results obtained, the lowest LDR value was 55.35 percent, and the highest value was 119.76. However, when viewed as a whole, the loan-to-deposit ratio of the total sample is 89.70 percent, meaning that it is in accordance with the provisions required by Bank Indonesia.

Path Diagrams. After the model is completely formed and data is collected according to the needs of the research variables, then data analysis is carried out using Warp PLS soft-

ware. The results of data analysis in the form of a PLS Warp chart can be seen in Fig. (2).

Model Evaluation. Evaluation of the model is carried out by analyzing the path coefficient and the significance of the path coefficient, both direct and indirect influence analysis. The results of the causality significance analysis between the independent variables and the dependent variable are presented in Table 2.

Report The Results of The PLS Analysis. The hypothesis on the result of the analysis using Warp PLS is tested by focusing at the path coefficient and prob-value of each exogenous variable. The results of testing hypotheses 1-5 are acceptable because the prob-value is lower than 0.05. Meanwhile, the effect of mediation in this paper is shown in Fig. (3).

Based on Fig. (3), the Sobel test statistic is -2.748 with a significance of 0.05. Thus earnings management mediates the causality from credit risk towards financial distress. In other word, it could be interpreted that credit risk affects financial distress through earnings management. Furthermore, mediation testing uses the VAF method. The following is a mediation test calculation using VAF as shown in Table 3.

Table 3. Testing the Effects of Earning Management Mediation.

| | |
|---|-------------------------------|
| Indirect influence $ 0.203 \times -0.479 $ (RC → EM = 0.203; EM → FD = -0.479) | -0.0972 |
| Direct influence (RC → FD = -0.170) | -0.170 |
| Total Impact | -0.2672 |
| VAF = Indirect Effect/Total Effect = $-0.0972 / -0.2672$ | 0.3639 |

According to Table 3, the VAF value is 0.3639 or if converted into a percentage it is 36.39 percent. It indicates that earnings management partially mediates the causality from credit risk towards financial distress. Based on this result, the sixth hypothesis is accepted.

4.2. Discussion

The effect of banking credit risk on financial distress. The result of hypothesis testing shows that net NPL has a negative effect significantly on the Z-Score, so the first research hypothesis is accepted. This result means that the greater the banking credit risk, the smaller the Z-Score (the more distressed). Conversely, the lower the net NPL, the higher the Z-Score (the less distressed). A low NPL will generate high profits, so it can absorb risk.

The result of this study strengthen the view of Garr (2013) as well as supports some previous researches (Brownbridge, 1998; Kablay and Gumbo, 2021; Lee and Mullineaux, 2004; Migliardo and Forgione, 2018; Zaki et al., 2011). The result of this study might answer the various contradictions in the findings of empirical study on the effect of credit risk on financial distress and it is proven that the relationship between credit risk (Net NPL) is negative to the Z-Score (FD) after considering earnings management as a mediator.

The effect of banking credit risk on earning management. The role of earning management as an intervening variable for the influence of credit risk on financial distress is a new concept of modeling. Earnings arrangement could be interpreted as a positive or a negative earnings arrangement, where credit risk is the cause of earnings management actions. When the NPL is higher, positive arrangement would be carried out. When the NPL is lower, negative arrangement would be carried out. Earnings management is calculated using the total accruals method of Healey (1985). Earnings management is carried out in the short term, but in the long term there is no earnings management action.

The effect of earnings management on financial distress. The test result shows that earning management has an effect negatively on financial distress. The result of this analysis

provides an interpretation that earnings management can manipulate profits, namely by reducing or increasing profits so that financial distress does not occur. Previous researches support this finding (Campa, 2015; Etemadi, Davison, and Irvani, 2012; Sayidah, Assagaf, and Faiz, 2020). Thus the hypothesis of a negative causality from earning management on financial distress is accepted.

The effect of profitability on financial distress. The coefficient value of profitability variable proxied by ROA on Z-Score value was 0.441 and the prob-value appears lower than 0.001. Based on the result of statistical test, it is empirical evidence that ROA (profit) has an effect positively on financial distress. It means that the higher the ability of a bank to record profits, the higher the Z-Score (low financial difficult). However, the higher the retained earnings will increase the ability of own capital to be able to absorb the risks faced. This variables relationship is stated on some researches (Abdullah and Ahmad, 2005; Al-Khatib and Al-Horani, 2012; Chen and Du, 2009; Nurazi and Evans, 2005).

The effect of liquidity on financial distress. The coefficient value of the effect of LDR as proxy of liquidity on the Z-Score was 0.139 and the prob-value was 0.021. The statistical test result provides an empirical evidence that liquidity has a significantly positive effect on the Z-Score. It means that the higher the banking liquidity, the higher the Z-Score (low financial difficult). However, with higher liquidity, banks can overcome the risks that will occur. This variable relationship is based on previous studies have been conducted (Al-Saleh and Al-Kandari, 2012; Baklouti, Gautier, and Affes, 2016; Rahman et al., 2004).

The role of earning management as mediating the effect of credit risk on financial distress. The evidence of this paper suggests that earning management can mediate the causality of credit risk on financial distress. It can explain the empirical researches that have shown different findings on the influence of banking credit risk on financial distress. Many previous researches state that banking credit risk has a positive influence on financial distress (Allen, DeLong, and Saunders, 2004; Brownbridge, 1998; Lee and Mullineaux, 2004; Migliardo and Forgione, 2018; Zaki et al., 2011). On the other hand, some findings state that banking credit risk has a positive influence on financial distress (Fukuda et al., 2006; Karimi and Walter, 2015; Rahman et al., 2004).

5. CONCLUSION

This study found a theoretical model to overcome differences in inconsistent findings about the effect of credit risk on conventional banking financial distress. After conducting a literature review, several variables found could influence the occurrence of financial distress, namely 1) Credit risk, 2) Profitability proxied by ROA (Return on Assets); 3) Liquidity proxied by LDR (Loans to Deposit Ratio). These three variables are associated with financial distress, presumably influencing financial distress.

Credit risk has a significant effect negatively on financial distress. It suggests evidence that the higher the credit risk experienced by a bank, the lower the Z-Score, meaning that it is increasingly experiencing financial distress. In addition, credit risk has an effect positively on earnings management.

It suggests evidence that the higher the credit risk, the more likely it is to take earnings management actions. Furthermore, earnings management has an effect negatively on financial distress. It shows that the higher the bank's management in carrying out earnings management actions, it will impact financial distress.

Profitability proxied by ROA has a significant effect positively on the Z-Score. This finding proves that the greater the ability of banks to record a profit, the less they experience financial difficulties. In addition, liquidity proxied by LDR has an effect and significant positively on financial distress. This shows that the higher the banking liquidity, the less experiencing financial difficulties.

The test result shows that earning management could partially mediate the effect of credit risk on financial distress. The model has a partial mediation effect, meaning that credit risk could influence it directly without going through or involving earnings management variables. It also means that the existence of earnings management plays an important role in the relationship between credit risk and financial distress.

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