

The Effects of Credit Risk and Financial Performance to Financial Distress Prediction of Listed Banks in Indonesia

Bimo Ario Tejo^{1,*} Dewi Hanggraeni¹

¹Faculty of Economics and Business Universitas Indonesia

*Corresponding author. Email: at.bimo@gmail.com

ABSTRACT

This study aims to look at the effects of credit risk and financial performance on the bank financial distress prediction, in which the bank as a financial institution in the scope of its business of fundraising and lending to debtors is exposed to several risks; the main one discussed in this study is credit risk. In addition to credit risk, the bank's financial performance becomes a barometer that needs to be maintained, in which banks, especially conventional commercial banks that are listed on the Indonesia Stock Exchange (IDX) (which are the study population) have responsibilities both to customers and the public as stockholders. In Indonesia, the Financial Services Authority (OJK) has an important role as a regulator in overseeing and regulating several regulations to maintain the financial quality of banks to avoid defaults. Both credit risk and financial performance can have an impact on a condition that causes bankruptcy (financial distress) of a bank. In this study, the researchers used the CAMEL rating as an indicator of financial distress predictions. The data used are secondary data obtained through the OJK website in the form of financial reports and financial ratios reported by each bank periodically. In this study, the researchers conducted an analysis of several banks in several periods (cross section and time series). This research used the panel data regression method to see the effect between these variables. The researchers also added several control variables to neutralize their effects on the dependent variable. From the data collected and successfully analyzed, it was found that the NPL indicator in the credit variable and ROE financial performance has a significant influence on the prediction of financial distress, but the ROA variable has no significant effect. While the control variable consisting of bank size and liquidity has a significant effect, time period does not have a significant effect on financial distress predictions as the dependent variable in this study.

Keywords: Bank, Credit Risk, Non-performing Loan, Financial Performance, Financial Distress, CAMEL

1. INTRODUCTION

The banking industry has a strategic and significant role for a country in supporting economic growth and creating equity. Over time, the banking industry in Indonesia has experienced significant developments from year to year, one of which can be seen from the Indonesian Banking Statistics data released by the Financial Services Authority (OJK) where the distribution of funds (credit) from banks grows significantly every year. Seeing the increasingly dynamic growth of the banking industry and economy, it requires the business sector to increase its ability to minimize risks associated with each other.

From the analysis of credit growth statistics, it is known that in the last 14 years, the provision of credit from commercial banks to non-bank third parties has increased positively by an average of 17.14% per year, which is directly proportional to the increase in bank credit risk. 7.88% per year. In 2012 to 2014 Δ NPL increased drastically and began to decline in 2015 to 2017. It was noted that 2014 was the peak of the NPL increase of 36.22%, where in that year, credit growth was only recorded at 11.58%.

Based on indicators of economic growth and credit allocation, there are indications that credit acts as a stimulator in economic growth. The role of credit is considered very important in encouraging the role of the real sector as a derivative of fiscal and monetary policy

that is able to accelerate the economy in the real sector. In this regard, OJK in mid-November 2014 launched several regulations in the banking sector in line with the rapidly growing financial sector. Altunbas et al. [1] in their research measured credit quality through non-performing loans (NPL). According to Berger and DeYoung [2] and Van Hoose [3], this variable can capture the quality of credit monitoring. In this case, credit risk is an unwanted output, which for financial institutions is usually proxied through NPLs. This variable describes credit risk, which is very important for long-term bank activities [4].

Credit risk is proxied by the ratio of NPL, which is the ratio between total non-performing loans and total loans. A high NPL will increase the cost of provision for earning assets and other costs so that it will have an impact on the decline in bank financial performance. In addition, banks are required to maintain their financial performance to account for the collected customer funds. The OJK as a regulatory body requires each bank to report its business activities and financial performance in a certain period, in which the OJK will carry out a monitoring function to maintain the quality of banking in Indonesia.

Haddad et al [5] in their research explained that the factors of capital and financial risk are considered to have an important role in explaining the phenomenon of bank bankruptcy. Through risk management, the bank's financial performance can be well managed, and the bank can perform its functions properly so that it can avoid bankruptcy or financial distress. Banks as service institutions prioritize trust from third parties or customers in their business, where one of the indicators considered by customers to entrust their funds to the bank is through the soundness level of the bank itself. The soundness level of a bank can be measured by various indicators, one of which is the CAMEL rating which is also used in this study as a predictor of financial distress.

Apart from the problem of non-performing loans, during the research period there were also several issues in banking, one of which was the rush money issue in 2016 and 2018, where an increase in non-performing loans accompanied by rush money would have a fatal impact on banking liquidity. Based on the background of these problems, it can be concluded that the bank is an institution that plays an important role in the economy, and that the provision of credit is considered to increase the economic growth of a country. Along with the increase in lending, credit risk also increases.

Credit risk, which is closely related to financial performance, is considered to be able to influence the financial distress of a bank which in turn can have an impact on the economic stability of a country. From these conclusions, this study aims to see the effect of credit risk and financial performance on financial

distress predictions, which as described, in addition to credit risk, banks are also exposed to other risks so that researchers consider it necessary to examine how significant the effect of credit risk is to banks' financial performance against prediction of banking financial distress.

Based on the description above, the identification of problems in this study is in line with the increase in credit provision by banks which also increases the risks faced by banks. In this case, credit risk is considered to have a large enough exposure to the business nature of the bank itself, so research is needed. How significant will the effect of credit risk and financial performance be on the prediction of bankruptcy or financial distress? This has a domino effect on the economy of a country. If a bank is faced with bankruptcy, it will cause a liquidity failure, which leads to the failure of the bank to return third party funds.

2. LITERATURE REVIEW

A bank is a financial institution whose main activity is to collect funds from customers and channel these funds in the form of credit and provide other services [6]. In another sense, a bank is an agency or institution that accepts credit, receives deposits from the public in the form of demand deposits, time deposits and savings, which are then managed by channelling them in the form of investments and credit to private or governmental enterprises (Pierson, in the 2005 Hasibuan Book). Frederic [7], states that banks are financial institutions that accept deposits and provide loans, including commercial banks and savings and loan associations.

Risk can be interpreted as an uncertainty that can cause a situation that causes loss, due to insufficient or insufficient information. All activities carried out may carry risks, especially in business activities that are closely related to risk. According to the Committee of Sponsoring Organizations of the Treadway Commission ("COSO", 2004) risk is the possibility that an event will occur that has a negative impact on the achievement of a goal. Meanwhile, according to Lam [8], risk is a variable that can cause a deviation of the expected results, as can affect the achievement of goals and the performance of the entire organization. Eddie Cade [9] states that the definition of risk varies depending on the objectives. The exact definition of risk from its perspective is seen from the exposure to income uncertainty. Meanwhile, according to Philip Best [10], risk is financial loss, either directly or indirectly.

One type of risk that has a large enough exposure in banking activities is credit risk, which in POJK No. 1 / POJK.05 / 2015 financing risk or credit risk is defined briefly as the risk that arises due to the failure of the debtor and / or other parties in fulfilling obligations to

the financing company. Credit risk can also be defined as the risk of economic loss caused by the failure of the other party (counterparty) to fulfill its contractual obligations [11]. According to Ferry and Sugiarto [12], credit risk is defined as the risk of loss in relation to the borrower (counterparty) being unable and unwilling to fulfill the obligation to repay the borrowed funds in full at maturity or afterwards. Meanwhile, according to Kasmir [13], credit risk arises as a result of uncollectible loans that have passed a predetermined time for repayment (period).

Meanwhile, according to Fahmi [14], financial performance is an analysis carried out to determine the extent to which the company has implemented it using financial implementation rules correctly and correctly. Company performance is a description of the financial condition of a company that is analysed with financial analysis tools, so that it can be seen about the good or bad financial condition of a company that reflects work performance in a certain period.

Financial distress is a prediction seen from the condition in which the company's finances are or will be in an unhealthy state or crisis. Platt and Platt in Luciana [15] define financial distress as a stage of deteriorating financial conditions that occurs before bankruptcy or liquidation occurs. Ross and Westerfield [16] in Andree Boy [17] state that financial distress is a situation where the company's operating cash flow is not sufficient to meet current obligations and the company is forced to take corrective action. Financial difficulties can cause the company to fail in a contract or agreement, where it can result in financial restructuring between the company, creditors and investors. Gandhi, Loughran, and McDonald [18], in their research, stated that bank credit fluctuations, driven by bank distress conditions, can affect aggregate consumption and investment, and may have a significant effect on the macro economy.

The Codification of Bank Indonesia Regulations, regarding the Rating of Bank Soundness attaches the CAMEL rating as an indicator to see the soundness of a bank has several factors in the form of Capital, Asset Quality, Management, Earnings, and Liquidity, where each of the five factors has a respective weight, and from the calculation of the components of these factors, a rating ranging from one to five (healthy to unhealthy) will be given based on the applicable provisions.

2.1. Research Hypotheses

Hypotheses in this research are:

H1: NPL has a positive significant effect on financial distress prediction

H2: ROA has a negative significant effect on financial distress prediction

H3: ROE has a negative significant effect on financial distress prediction.

2.2. Research Model

Based on the problem identification and research limitations discussed in the previous chapter, the authors analysed the effect of credit risk and financial performance on the prediction of financial distress for conventional commercial banks listed on the IDX, where to measure the financial performance of the authors used indicators in the form of Return on Assets (ROA), Return on Equity (ROE) and Capital Adequacy Ratio (CAR), while to predict financial distress, the CAMEL rating is used which is considered to represent various aspects relevant to the banking business as used by banking regulatory agencies in Indonesia until the 2016 period.

The first step is to collect data in the form of financial reports and financial ratios from the research object in the period of 2005 to 2018. Based on this data, the authors processed data by means of calculating the financial ratios required in the indicators of each variable to be tested. After the data is ready to be processed, the researcher used statistical software to see the influence between variables, so that the results are obtained to answer the research questions.

3. RESEARCH METHODOLOGY

The research method is a scientific way of obtaining data for specific purposes and uses. The research that the authors have done is a quantitative research that is processed using descriptive statistical analysis, specifically, research analysis techniques by interpreting and describing the data that has been collected to make conclusions from the study, and statistical analysis using a panel regression approach.

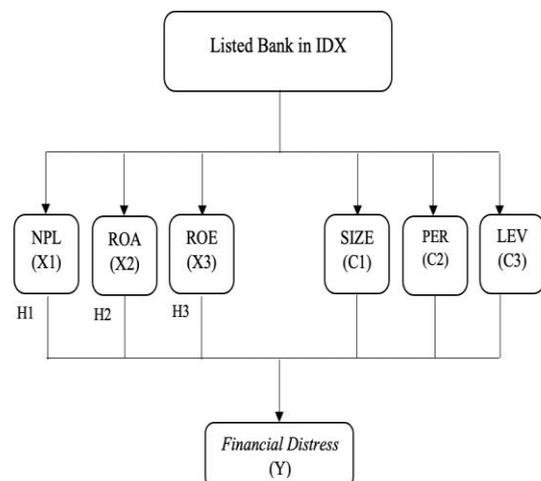


Figure 1 Research Model.

The type of data used in this research is secondary data in the form of quantitative data, of which the quantitative data in question is data in the form of numbers. The secondary data that was used is panel data or object data and time series (cross-sectional & time series), in which there are 40 banks that were used as research samples with six different research variables during the 14-year research period, namely, 2005 to 2018.

3.1. Research Population

The author determines all conventional commercial banks listed on the IDX as the study population. The following are the criteria for determining the research sample:

- The research population is all conventional commercial banks listed on the IDX from 2005 to 2018.
- The research sample bank publishes an annual report containing information about non-performing loans and a complete financial report containing a balance sheet, income statement, and cash flow statement for the period ended December 31, 2005 to 2018.

3.2. Data Collection

The author uses documentation techniques, namely through reading, recording, and observing directly secondary data from the research sample by utilizing several sites such as the Indonesia Stock Exchange (IDX), Bank Indonesia website, and the Financial Services Authority (OJK) website to collect the data required. In addition, the authors also conducted library research (Library Research), namely the technique of collecting theories or data by studying and reading literature related to the problem as a theoretical basis in the preparation of research.

4. RESULTS

Based on the data obtained from the official website of Bank Indonesia, out of a total of 110 banks, as of December 2018 there were 42 banks listed on the Indonesia Stock Exchange, of which 2 of them were banks with Sharia stock ownership so that they were not included in the study sample. Of the total 42 banks, the majority were national private commercial banks (BUSN) at 83%, while 10% were state-owned enterprises (BUMN), and 7% were regional development banks (BPD). During the study period, the assets of banks listed on the Indonesia Stock Exchange experienced significant growth with an average of 15.13% per year, where the largest growth occurred in 2014 with a growth of 23.56%.

Table 1. F test result

R-squared	0,2183
Adjusted R-squared	0,2073
S.E. of regression	0,3669
F-statistic	19,9190
Prob(F-statistic)	0,0000

In this study, panel data regression was used in which the population of the studied bank was used as a cross section aspect, and the period of the study year was used as a time series aspect, where the results of the Hausman and likelihood tests indicated that the random effects model was chosen to estimate panel data regression to be the model choice. right. After selecting the model, the research was continued by conducting other tests in the form of the f test, t test, determination coefficient test, and analysis of the determinant factors.

The f test was carried out on the panel data regression model with a time period of 2005 to 2018, using independent variables in the form of NPLgross, ROA and ROE, with the results of the f test as shown in table 1.

From the f statistical test, the result shows that the p-value is Prob (F-statistic) of 0.0000 (p-value <0.05) for all research variables. These results indicate that simultaneously, all independent variables used in the panel data regression model have an influence on the dependent variable.

The t-statistic value is the partial value of panel data regression per each variable, where the t value shows the effect of the independent variables, namely NPLgross, ROA and ROE on the dependent variable, namely financial distress individually. Based on the test results from the panel data regression results in the period 2005 to 2018, it is known that the independent variable has an influence on the dependent variable. The coefficient of determination can show how well an estimated model explains the dependent variable, where the test results show that the adjusted R-square value of 0.20 shows that the independent variable used is able to explain its effect by 20% on the dependent variable.

5. DISCUSSION

From these results, it is known that the NPLgross variable has a significant positive relationship with financial distress, which is in accordance with the initial hypothesis which from the results of previous research by Prasetyo [19], it is known that NPL has a significant positive effect on banking financial distress conditions. This condition was caused by the larger NPL, indicating that the larger non-performing loans were extended or within the collectability level of three and above. This is a bad indication in the banking world, because non-performing loans can become uncollectible loans or

commonly known as bad loans and cause losses from the results of the write-off of financial assets. In the long term, bad credit can create big liquidity problems for banks.

The ROA variable has a positive and insignificant relationship, whereas previous research conducted by Kurniasari and Ghozali [20] on a sample of 85 banks in Indonesia with the period 2009 to 2012 showed a similar finding. These results also indicate that both the increase and decrease in return on assets does not absolutely affect banking financial distress, where the decrease in ROA is not absolutely caused by a decrease in profit, but on the other hand it is also influenced by an increase in assets which is more significant than profit. This increase did not only come from equity but also from bank liabilities, so that in some cases when ROA decreased, the level of financial distress still showed a healthy rating, because from the side of the bank's profit it had also increased.

The ROE variable shows a significant negative relationship, which is in accordance with the research hypothesis. The increase in ROE indicates that the net profit that has been obtained from bank equity has increased. This indicates that a bank that manages ROE well can have a direct impact on banking health and the level of financial distress, which in this study is measured using the CAMEL rating.

Apart from the independent variables, the control variables in the form of size, leverage and period showed insignificant positive effects on the independent variables. From these results, it is known that in terms of size and leverage it does not have a significant effect, as well as the crisis period that occurred from 2007 to 2009.

6. CONCLUSION

From the results of the analysis of the effect of credit risk and banking financial performance on financial distress predictions, which are analyzed using panel data regression method, it has answered questions from the study, which shows that the independent variable in the form of NPL has a significant positive effect on the prediction of financial distress with the CAMEL rating method. This indicates that a higher NPL level has a negative impact on the soundness of the banking system. Meanwhile the independent variable in the form of ROE has a significant negative effect on the independent variable, which shows that the higher the ROE generated by the bank, the better its impact on the level of bank soundness. The results also show that ROA has an insignificant positive effect, which indicates that the increase or decrease in ROA does not necessarily have an impact on the CAMEL rating. In addition, control variables such as SIZE, DER and

PERIOD are considered not to have a significant effect on the prediction of financial distress.

The results of this study have provided an overview of the influence between these variables, but in this study, there are still the following limitations:

1. There are actually several indicators that can be used to measure the level of financial distress, including the Z-Score, Bankometer, Risk Based Bank Rating (RBBR), and others, but this study has limitations in using these other indicators, so it only uses the CAMEL rating which is also was used as a measuring tool for banking health by Bank Indonesia and OJK until 2016, before it was eventually replaced by RBBR.
2. Research limitations on the use of indicators or variables, such as CAR which are commonly used to measure financial performance but have been used as one of the indicators in the CAMEL rating related to capital or capital.
3. Limitations of the study in examining the bank population which are limited to conventional commercial banks listed on the IDX.
4. Regarding point number 2, the use of panel data also has limitations in that of the total 40 listed banks that were the study population, not all of them have been registered since 2005, so this study uses unbalanced panel data.

REFERENCES

- [1] Y. Altunbas, M. Liu, P. Molyneux and R. Seth, "Efficiency and risk in Japanese banking", *Journal of Banking & Finance*, vol. 24, pp. 1605-1628, 2000.
- [2] A. Berger and R. DeYoung, "Problem Loans and Cost Efficiency in Commercial Banks", *Finance and Economics Discussion Series*, vol. 1997, no. 08, pp. 1-29, 1997. Available: 10.17016/feds.1997.08.
- [3] D. Van Hoose, *The Industrial Organization of Banking*. Berlin: Spingler. 2010.
- [4] "Range of methodologies for risk and performance alignment of remuneration", *Basel Committee on Banking Supervision*, 2011. [Online]. Available: <http://www.bis.org/publ/bcbs194.pdf>. [Accessed: 18- Feb- 2020].
- [5] M. D. Haddad, W. Santoso, Sarwedi, H. Sukarno, M. Adenan, "Model Prediksi Kepailitan Bank Umum di Indonesia. *Jurnal Riset Biro Stabilitas Sistem Keuangan Bank Indonesia*", Bank Indonesia, 2004. [Online]. Available: <http://www.bi.go.id/NR/rdonlyres/734CC2E4-028F.../Kepailitanbank.pdf>. [Accessed: 18- Feb- 2020].

- [6] Kasmir. Analisis Laporan Keuangan. Jakarta: Rajawali Pers. 2008
- [7] F. Mishkin. Economics of Money, Banking and Financial Markets, 11th Edition. 2016.
- [8] J. Lam, Enterprise Risk Management: From Incentives to Controls, 2nd Edition (Hoboken, NJ: John Wiley & Sons, 2014
- [9] E. Cade, Managing Banking Risks. England: Cornwall, 2002.
- [10] Philip Best, Implementing Value at Risk, Wiley, 2000
- [11] Peraturan Otoritas Jasa Keuangan (POJK) No. 1 / POJK.05 / 2015
- [12] Ferry N, Idroes and Sugiarto. Manajemen Risiko Perbankan. Yogyakarta: Graha Ilmu. 2006.
- [13] Kasmir. Manajemen Perbankan. Jakarta: Rajawali Pers. 2010.
- [14] F. Irham, Analisis Kinerja Keuangan: Panduan Bagi Akademisi, Manajer, dan Investor Untuk Menilai dan menganalisa Bisnis Dari Aspek Keuangan. Bandung: ALFABETA. 2011.
- [15] L. S. Almilia. "Prediksi Kondisi Financial Distress Perusahaan Go Public dengan Menggunakan Analisis Multinomial Logit". Jurnal Ekonomi dan Bisnis, Vol. XII, No.1.2006.
- [16] R. Jordan and J. Westerfield. Corporate Finance Core Principle in Applications. Mc Graw Hill-Irwin. 2007.
- [17] A. Boy. Analisis rasio keuangan untuk memprediksi financial distress perusahaan properti dan real estate yang terdaftar di Bursa Efek Indonesia. Skripsi. Jakarta: UIN Syarif Hidayatullah. 2009.
- [18] P. Gandhi, T. Loughran and B. McDonald, "Using Annual Report Sentiment as a Proxy for Financial Distress in U.S. Banks", Journal of Behavioral Finance, vol. 20, no. 4. 2019. Available: 10.1080/15427560.2019.1553176.
- [19] E. A. Prasetyo, "Faktor-faktor Yang Mempengaruhi Kondisi Financial Distress Perusahaan Perbankan Yang Listing di BEI", 2011
- [20] C. Kurniasari, and I. Ghazali, "Analisis Pengaruh Rasio Camel Dalam Memprediksi Financial Distress Perbankan Indonesia," Diponegoro Journal of Accounting, vol. 0, pp. 98-107, Sep. 2013. [Online].