FINANCIAL DISTRESS ANALYSIS USING EXTENDED SEBRA MODEL TO PREDICT THE BANKING SOUNDNESS

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Abstract: Financial Distress Analysis Using Extended SEBRA Model to Predict The Banking Soundness. *This research aims to see the influence of six variables in the extended SEBRA Model, they are earnings, equity, liquidity, unpaid tax to total assets, firm size, and firm age. This research was conducted at conventional commercial banks listed on the Indonesia Stock Exchange. The sampling technique used was purposive sampling technique. The financial distress in this research is proxied as the soundness value of the bank of each bank in the year concerned. The results of this research are the earnings ratio has a positive effect on financial distress, the liquidity ratio has a negative effect on financial distress, while the other four variables which include equity ratio, unpaid tax to total assets, firm size, and firm age have no effect on financial distress. Meanwhile, simultaneously, extended SEBRA Model affecting financial distress as much as 63.2% and the rest is influenced by other factors.*

Keywords*: Financial Distress, SEBRA Model, Financial Ratios, Conventional Banks*

INTRODUCTION

Banking has a vital role in the growth and stability of the country's economy. If the country's economic sector is experiencing a decline, then the banking sector will be restructured through various government policies. In line with the rapid development of the Indonesian economy, it has led to many banks in Indonesia. Society increasingly needs an institution that can be trusted to regulate, collect, and distribute its funds. The number of bank establishments with various facilities and services owned by each bank creates high competition between banks. Banks must be able to maintain public trust by maintaining positive performance and maintaining good company stability. Problems that arise in bank performance can result in financial distress, which can lead to bankruptcy.

Not only in non-banking companies but also in banking companies, financial distress can also be experienced. Financial distress is an early symptom before bankruptcy occurs. The health condition of the bank can assess the financial distress condition in the banking. The economic conditions in which the bank operates also indicate the bank's possibility of experiencing failure within four years.

In Indonesia the ratio used in assessing bank soundness has changed several times, there are CAMEL methods and RGEC methods. While in international research, there are various financial distress prediction method which some of them has good

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accuracy to predict financial distress in non-banking sector and banking sector. One of them is SEBRA Model by Bernhardsen and Larsen. The model consists of earnings, liquidity, equity, trade payables to total assets, tax payable to total assets, firm size, and firm age.

Based on Bernhardsen (2001), both SEBRA models have good predictive power and successfully predict aggregate bankruptcy rates in the corporate sector. The basic ratio consists of earnings, liquidity, and equity ratios. Meanwhile, the extended ratio consists of the basic ratio plus four variables, namely trade payables to total assets, unpaid tax to total assets, firm size, and firm age.

Basic SEBRA is more suitable for predicting potential bank loan losses than Extended SEBRA. Meanwhile, Extended SEBRA has a higher level of accuracy than Basic SEBRA in assessing company bankruptcy. A model with many of analyzed financial ratios will be able to predict financial difficulties more accurately because of the increasing number of comparison ratios. The SEBRA model, which uses many variables in predicting the occurrence of bankruptcy in a company, is expected to provide more accurate prediction results to be used as an alternative way of predicting bankruptcy.

In Indonesia, research on financial distress prediction using the SEBRA Model has conducted by Weningtyas Priastiwi (2016)

and Sofi Nuria Melati (2011). Research conducted by Sofi Nuria Melati (2011) shows that the basic SEBRA model can predict bankruptcy with a prediction accuracy of 66.7%. Meanwhile, research conducted by Weningtyas Priastiwi shows that the extended SEBRA model has a high level of accuracy to predict bankruptcy with an accuracy of 78.1% for predictions the last two years and 81.3% for predictions of the last one year. Better accuracy than the Altman model in predicting the last two years. However, these two studies prefer to use non-banking companies in their research so that further research expect to be able to conduct financial distress prediction research using the SEBRA Model in financial or banking companies.

Therefore, researcher are interested in examining financial distress prediction, especially in conventional banking, using the Extended SEBRA Model. This study aims to test the empirical findings regarding financial distress prediction by using the variables in the SEBRA Model development ratio and to determine the effect of the extended SEBRA Model in predicting financial distress in conventional commercial banks listed on the Indonesia Stock Exchange for the period 2014-2018 and also to find out whether the extended SEBRA Model can be used to predict financial distress so that it can be used as an alternative way of measuring financial distress predictions in Indonesia. The

financial distress in this study is proxied as bank health.

LITERATURE REVIEW

According to Brian, Certo, and Ireland (2011), signalling theory is useful for describing behavior when two parties (individuals or organizations) have access to different information. One party (the sender) must choose whether and how to communicate that information while the other party (the receiver) must choose how to interpret the signal. Based on the signalling theory, financial statements can be used to give positive signals (good news) and negative signals (bad news) to the user. Financial statements can be used to assess the performance and financial condition of each company so that they can predict the potential for bankruptcy in the future. In banking, the signal given by the bank in the form of their financial report can show the bank's financial condition to the customer so that the customer can then decide to save their funds with the bank or not.

Juniardi (2017) states that financial distress is an entity experiencing a condition where the company's finances are in an unhealthy state but have not yet reached the bankruptcy stage. Platt and Platt (2002) define financial distress as the final stage of a company's decline that precedes a major changing event such as bankruptcy or liquidation. Financial distress occurs before bankruptcy.

According to Totok Budisantoso & Nuritomo (2017), the health of a bank can be defined as the ability of a bank to carry out regular banking operations and fulfill all its obligations properly in ways that are by applicable banking regulations. Assessment of a bank's soundness is the result of a qualitative assessment through an assessment of capital, asset quality, management, profitability, liquidity, and sensitivity to market risk.

Bank health assessment aims to determine whether the bank is in a healthy condition, healthy enough, unhealthy, or unhealthy. With an assessment of a bank's soundness, it is expected that the bank will always be in a healthy condition so that it will not cause losses to other parties.

According to Bernhardsen and Larsen (2007), the SEBRA Model Development Ratio (Extended SEBRA) develops the original model or SEBRA Basic. The SEBRA Model Basic Ratio consists of earnings ratios, equity ratios, and liquidity ratios. The SEBRA Model Development Ratio consists of earnings ratios, equity ratios, liquidity ratios, trade payables to total assets, tax payable to total assets, firm size, and firm age.

Earnings ratio in the SEBRA Model is to compare earnings before depreciation with the company's total liabilities. The earnings

ratio can show how the company fulfills its obligations in that year with the earnings that have been generated and knows how much debt capacity the company has. A high earnings ratio shows that its ability to pay its obligations using earnings is getting better.

The equity ratio in the SEBRA Model is total equity divided by total assets. The equity ratio shows a comparison between capital and assets owned by the company. A high equity ratio indicates that the company has adequate financial strength. The equity ratio can show the financial strength of a company.

The liquidity ratio in the SEBRA model is the total current assets minus short-term liabilities divided by operating revenues. The liquidity ratio can show how the company fulfills its current obligations. The greater the liquidity ratio, the more liquid the company is. In bank, the short-term liabilities numbers can be calculated from liabilities payable immediately plus deposits.

The unpaid tax to total assets in the SEBRA Model is used to determine a company's liquidity by looking at its tax payments. If this ratio is higher, it shows the company is not paying its taxes on time and indicates low liquidity.

The company's total assets indicate the firm size in the SEBRA Model. Firm size can indicate the size of the company. The bankruptcy rate is generally higher for small companies than for large companies because small firms have less total assets. Larger amount of size, which is represented by total asset, will protect the bank to cover their future obligations or potential bankruptcy. However, sometimes it depends on how the manager manage company asset.

The firm age in the SEBRA Model is calculated from the year the company was founded. The company's age can show the company's ability to maintain its existence to remain competitive by increasing its performance. A newly established company has a higher bankruptcy rate than a long-established company.

There are one more variable in Extended SEBRA Model, it is trade account payable. This research does not use variable trade account payable because banking is not a manufacturing company, so banks do not have trade account payable accounts in their financial reports. this study only uses six variables SEBRA model development ratio.

RESEARCH METHOD

This research is a causal associative study. The research method used is quantitative research. Research with a quantitative approach emphasizes its analysis of numerical data (numbers), processed by statistical methods (Saifuddin Azwar, 2016). This research was conducted at conventional banks listed on the Indonesia Stock Exchange for the period 2014-2018 by taking secondary

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data in the form of financial reports of each related bank through the respective bank's website and each bank's health value based on the assessment conducted by the Research Bureau Info Bank. This research was conducted from February to May 2020.

The type of data used in this study is secondary data. Secondary data used in this research is data in the form of financial reports from each conventional bank listed on the Indonesia Stock Exchange for the 2014-2018 period obtained from the websites of each bank and data on the results of assessments conducted by the Bank Info Research Bureau, which is based on financial performance published in info bank magazine. Other data needed in this study also come from print media and the internet. The data collection technique used is the documentation method. The data analysis techniques in this study used descriptive statistical tests, classic assumption test, and multiple linear regressions.

RESEARCH RESULT AND DISCUSSION

Table 1: Result of Descriptive Statistics

	Min	Max	Mean	Std. Deviation
Ear-ning	-0.094	0.050	0.018	0.019
Eq.	0.070	0.385	0.150	0.050
Liq.	-20.13	-2.11	-5.45	1.89
UT/TA	0.000	0.004	0.001	0.000
Size	14.48	20.93	17.722	1.670
Age	6	123	47.79	25.89
FD	41.66	97.15	83.89	10.86

a. Earnings

Based on the table above, it shows that the amount of Earnings for the 2014-2018 period is between -0.09424 and 0.05057. The average value (mean) is 0.0184239, and the standard deviation is 0.01935367. The company with the lowest Earnings value was Bank MNC Indonesia Tbk in 2017 with a value of -0.09424, while the highest Earnings was Bank Mestika Dharma Tbk in 2014 with a value of 0.05057.

b. Equity

Based on the table above, it shows that the amount of Equity for the 2014-2018 period is between 0.07000 and 0.38554. The average value (mean) is 0.1504263, and the standard deviation is 0.05036546. The company with the lowest Equity value was Bank Bukopin Tbk in 2017 with a value of 0.07000, while the highest Equity was Bank Ina Perdana Tbk in 2017 with a value of 0.38544.

c. Liquidity

Based on the table above, it shows that the amount of liquidity for the 2014-2018 period is between -20.13879 and -2.11026. The average value (mean) is -5.4536181, and the standard deviation is 1.89661727. The company with the lowest liquidity

value was Bank Woori Saudara Indonesia Tbk in 2014, with a value of -20.13879. The highest liquidity was Bank Mega Tbk in 2016, with a value of -2.11026.

d. Unpaid Tax to Total Assets

Based on the table above, it shows that the amount of Unpaid Tax to Total Assets for the 2014-2018 period is between 0.00000 and 0.00441. The average value (mean) is 0.0013123, and the standard deviation is 0.00084660. The company with the lowest value of Unpaid Tax to Total Assets was Bank Panin Tbk in 2017 with a value of 0.00000, while the highest Unpaid Tax to Total Assets was Bank Yudha Bhakti Tbk in 2016 with a value of 0.00084660.

e. Firm Size

Based on the table above, it shows that the amount of Firm Size for the 2014-2018 period is between 14.48 and 20.93. The average value (mean) is 17.7228, and the standard deviation is 1.67004. The company with the lowest firm size value was Bank Ina Perdana Tbk in 2014, with a value of 14.48. The highest firm size was Bank Republik Indonesia Tbk in 2014, with a value of 20.93.

f. Firm Age

Based on the table above, it shows that the amount of firm age for the 2014-2018 period is between 6 and 123. The average value (mean) is 47.79, and the standard deviation is 25.890. The company with the lowest firm age value was Bank Jtrust

Indonesia Tbk in 2014, with a value of 6. The highest firm age was Bank Republik Indonesia Tbk in 2014, with a value of 123.

g. Financial Distress

Based on the table above, it shows that the amount of financial distress for the 2014-2018 period was between 41.66 and 97.15. The average value (mean) is 83.8948, and the standard deviation is 10.86306. The company with the lowest financial distress value was Bank Jtrust Indonesia Tbk in 2014, with a value of 41.66. The highest financial distress was Bank Central Asia Tbk in 2016, with a value of 97.15.

Table 2: The Result of Multiple Regression

	Unstadardized Coefficients	t_{count}	Sig.
(Constant)	59.017	6.985	0.000
Earnings	413.422	7.527	0.000
Equity	-19.204	-1.433	0.155
Liquidity	-1.150	-3.407	0.001
UT/TA	584.360	0.815	0.417
Size	0.705	1.655	0.101
Age	0.027	1.160	0.248
R^2			0.632
F_{count}			32.63
Sig-F			0.000

Based on the table above, the influence of earnings, equity, liquidity, unpaid tax to total assets, firm size, and firm age to financial distress is formulated with the following formula: FD = 59.017+413.422EARNINGS

+19.204EQ.–1.150LIQ+584.360UTTA+ 0.750SIZE + 0.027AGE ε

a. First Hypothesis Test

Based on the hypothesis test, the value of t count is 7.527 compared with the t-table at a significance level of 0.05, which is 1.980, so the t-count is higher than the t-table (7.527 > 1.980). The significance probability value of 0.000 indicates a smaller amount than the value at the predetermined significance level, namely 0.05 (0.000 < 0.05). It shows that the earnings ratio has a significant positive effect on financial distress.

This study's results are inconsistent with the results of research by Sofi Nuria Melati (2012), which states that the earnings ratio has a negative effect on financial distress. In this study, the earning ratio has a positive effect on financial distress, indicating that the higher its earning ratio, the better its ability to pay its obligations using the accumulated earnings. In the SEBRA model, the company's profit on debt is important to determine how much profit the company has to cover its debt. Profits that continue to increase can impact bank capital, where growing profits can affect bank operational activities. Customers will be more interested in saving their funds. This condition is supported by Rodoni and Ali's (2010) research, which states that three conditions cause financial distress, namely the factor of insufficient capital or lack of capital, the amount of debt and interest, and suffering losses.

b. Second Hypothesis Test

Based on the table, it can be seen that the value of t count is -1.433 when compared with t table at a significance level of 0.05, which is 1.980, then t count is smaller than the t-table (-1.433 <1.980). The significance probability value of 0.155 indicates a value greater than the predetermined significance level value, namely 0.05 (0.155> 0.05). It shows that the Equity variable does not affect the financial distress.

This study's results are not in accordance with the research conducted by Sofi Nuria Melati (2012), which states that the equity ratio has a negative effect on financial distress. In this study, the equity ratio does not affect financial distress because a bank with a high equity ratio can still have a low bank soundness level, indicating that it has poor finances. Assessment of bank soundness consists of several aspects, not only equity. Although the equity ratio value is high, it is not sure that the other ratios are high. So that equity alone cannot be used as a determining factor in seeing the bank's financial condition.

Banks' equity is not necessarily used by companies to generate profits, so high equity does not necessarily indicate good financial performance. Increasing profits can have an impact on bank capital, where growing profits can affect bank operational activities.

It is in line with Suldiarta's (2012) research, which states that equity does not affect ROA.

c. Third Hypothesis Test

Based on the table, it can be seen that the value of the t-count is -3.407 when compared with the t-table at a significance level of 0.05, which is 1.980, then the t-count is smaller than the t-table (-3.407 < 1.980). The significance probability value of 0.001 indicates a smaller amount than the predetermined significance level value, namely 0.05 (0.001 < 0.05). It shows that the liquidity variable has a negative effect on financial distress.

The results of this study are consistent with research by Sofi Nuria Melati (2012), Chrissentia (2018), and Theodorus (2018), which states that the liquidity ratio has a negative effect on financial distress. In this study, the liquidity ratio in the SEBRA model can have a negative effect because the value of current assets minus current debt is much smaller by the amount of income held. An increase in revenue was higher than the current assets-short term debt, so that the liquidity ratio was low and reached a minus value. The value of current assets, which is higher than current debt ensures that the company can pay its current debts. The banks sampled in this study have a current asset value smaller than the current debt so that it has a low liquidity ratio value.

In the SEBRA model, companies that have a high liquidity ratio value are increasingly liquid. However, the low liquidity value in this study's results could be due to there may be differences in the results of using the sebra model in banking and the use of the sebra model in non-banking company due to the different financial statement account and different account classification. In banking, assets owned are cash, receivables, and placements with other banks. Banks must keep the NPL value low so that the level of risk on credit is low enough where this credit is a bank receivable.

d. Fourth Hypothesis Test

Based on the table, it can be seen that the value of t count is 0.815 when compared to t table at a significance level of 0.05, which is 1.980, then the t-count is smaller than the t-table (0.815 < 1.980). The significance probability value of 0.417 indicates a value greater than the predetermined significance level value, namely 0.05 (0.417 < 0.05). It shows that unpaid tax to total assets does not affect financial distress.

Thus, this study's results are in accordance with research conducted by Weningtyas Priastiwi (2016), which states that unpaid tax on total assets does not affect financial distress. It is because banks that are experiencing financial difficulties can have smaller unpaid tax than companies that are not currently experiencing financial

problems. The results of research evidence it by Weningtyas Priastiwi (2016), which shows companies that do not fail have higher unpaid tax than companies that fail. Besides, the small amount of unpaid tax cannot be used as a benchmark in assessing a company's financial condition, including banking. It is because there are many manipulations of corporate financial statements to reduce taxes, one of which is by increasing debt so that debt interest expenses can reduce for tax purposes.

e. Fifth Hypothesis Test

Based on the table, it can be seen that the value of t count is 1.655 when compared with t table at a significance level of 0.05, which is 1.980, then the t-count is smaller than the t-table (1.655 < 1.980). The significance probability value of 0.101 shows a value greater than the predetermined significance level value, namely 0.05 (0.101 > 0.05). It shows that the size of the company does not affect the financial distress.

Thus, the results of this study do not support the research conducted by Theodorus (2018). His study results indicate that bank size has a negative but insignificant effect in predicting financial distress in banks. The bank size does not affect financial distress because the bank's size does not always guarantee the health of the bank but must also be supported by the bank's management and performance. The

company's operational complexity will increase with the size of the company so that without good management and performance from the bank, the bank may experience financial difficulties. This study's results support research conducted by Dian Sastriana (2013), Alfiah (2018), and Ananto (2017), which show that firm size does not affect financial distress.

f. Sixth Hypothesis Test

Based on the table, it can be seen that the value of the t-count is 1.160 when compared with the t-table at a significance level of 0.05, which is 1.980, then the t-count is smaller than t-table (1.160 < 1.980). The significance probability value of 0.248 indicates a value greater than the predetermined significance level value, namely 0.05 (0.248 > 0.05). It shows that firm age does not affect financial distress.

Thus, this study's results do not support the research conducted by Weningtyas Priastiwi (2016). The results of his research indicate that firm age has a negative effect on financial distress. This study's results support the research conducted by Astuti and Pamudji (2015), which shows that firm age does not affect financial distress. It is because it does not rule out the possibility that a newly established bank can compete with a company that has been established for a long time. After all, there are other factors, such as company performance, that can affect financial distress. From banks

sampled in this study, some banks experience financial distress even though they have long been established. However, based on Ramadhani and Lukviarman's (2008) research, companies that are less than 30 years old have a higher potential for financial distress.

g. The Influence of Extended SEBRA Model Simultaneously to Financial Distress

Based on the coefficient determination test, the coefficient of determination is 0.632, which indicates that independent variables can explain 63.2% of Financial Distress. The rest (100% -63.5% = 36.8%) is defined by other factors outside the variables not included in this study.

Based on the F test, the F-count value is 32.635 when compared to Ftable at a significance of 5%, namely 2.18, then the value of the f-count is higher than the f-table (32.635 > 2.18). The significance value is 0.000, which is less than 0.05. Thus, based on the hypothesis test results, it can be concluded that Earnings, Equity, Liquidity, Unpaid Tax to Total Assets, Firm Size, and Firm Age simultaneously affect the Financial Distress of conventional commercial banks listed on the Indonesia Stock Exchange (IDX) in 2014-2018.

The results of the adjusted R^2 test in this study obtained a value of 0.632. It shows that the SEBRA model development ratio affects conventional commercial banks' financial distress by 63.2%, while other factors influence the remaining 36.8%.

CONCLUSIONS AND SUGGESTIONS

Based on the research results on the effect of the SEBRA model development ratio in predicting financial distress in banks by looking at the soundness value of the bank, several conclusions can be drawn, namely:

1. The earnings ratio has a significant positive effect on financial distress. The company's profit on debt is important to determine how much profit the company has to cover its debt. Profits that continue to increase can impact bank capital, where growing profits can affect bank operational activities.

2. The equity ratio does not affect financial distress. Bank with a high equity ratio can still have a low bank soundness level which indicating poor finances. Assessment of bank soundness consists of several aspects, not only equity.

3. The liquidity variable has a negative effect on financial distress. This is due to an increase in revenue was higher than the current assets-short term debt, so that the liquidity ratio was low and reached a minus value. The current asset value smaller than the current debt so that it has a low liquidity ratio value.

4. The unpaid tax to total assets does not affect financial distress. It is because banks that are experiencing financial difficulties can have smaller unpaid tax than companies that are not currently experiencing financial problems.

5. Firm size does not affect financial distress. The bank's size does not always guarantee the health of the bank but must also be supported by the bank's management and performance.

6. The firm age does not affect financial distress. It does not rule out the possibility that a newly established bank can compete with a company that has been established for a long time. There are other factors, such as company performance, that can affect financial distress.

7. The SEBRA model development ratio is not appropriate to use as an alternative to the financial distress test approach to banking by testing the variables in the SEBRA model development ratio to the bank's soundness level, as indicated by the test results show that there tends to be no significant effect. It is because the components that exist in each variable in the SEBRA model development ratio are not appropriate for use in banking. There are differences in banking and non-banking companies' valuation components due to differences in accounts in the financial statements.

Besides, other factors can affect the bank's financial condition outside of the SEBRA model variables, such as management and human resource performance.

Some suggestions that researchers can convey based on the results of the analysis that have been carried out to further research are:

a) This study uses multiple linear regression as an analysis tool. Other alternative methods or different analytical tools can be used for further research, for example, by logistic regression analysis.

b) This study only examines banking companies, namely conventional commercial banks listed on the Indonesia Stock Exchange in 2014-1018. In further research, it may be possible to examine companies from other financial sectors and expand the research span.

c) Future research may use different financial distress criteria.

d) Future research can test other new financial distress prediction models.

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