PREDICTION OF FINANCIAL DISTRESS WITH FINANCIAL RATIO ANALYSIS

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Abstract

This study aims to prove the effect of liquidity, profitability and leverage on financial distress. The study was conducted in mining companies listed on the Indonesia Stock Exchange. The population of this study was the financial statements of mining companies listed on the Indonesia Stock Exchange in 2014-2019. The sample was determined using purposive sampling using certain criteria. The test was carried out using multiple regression analysis with SPSS software assistance. The results of this study indicate that the liquidity variable has no effect on financial distress, while profitability and leverage have an effect on financial distress.

Keywords: financial distress, financial ratio, mining company.

1. INTRODUCTION

Financial distress is the company's financial condition in an unfavorable situation and occurs when the company experiences a loss (Nugraha and Fajar, 2018). Financial distress is caused by the company's inability to maintain financial performance stability, a decline in sales, this causes the company's losses during the year. In order to maintain the company and its operations and restore normal financial conditions, the company can make changes to assets, net income and earnings per share. (Assaji and Machmuddah, 2017).

Garcia and Appendini (2018) in their research found that companies with strong balance sheets prey on weaker rivals to improve their market position. Companies in bankruptcy will impose indirect costs on competitors by increasing the cost of credit and limiting access to credit and investment. Companies that are in bankruptcy will result in a level of executive compensation. This impact is emphasized on companies

with high bank debt and shows that banks, as creditors, monitor and directly influence the compensation given to executives (Chen, J., et al., 2017).

Financial distress has been experienced by SOEs in various industries and agriculture in 2019, this is shown by the low Altman Z score index which is below 1.23, where the Ministry of Finance uses return on equity (ROE) and debt to equity (DER) as indicators. One of the reasons is the lack of current assets, besides that, profit before interest and taxes are not sufficient to face economic pressures (Rachmatarwata, 2019). Bankruptcy also occurred in coal mining company Murray Energy, which is the largest coal mining company in the United States. Murray did with his creditors, this restructuring agreement represents about 60% of Murray's debt service obligations amounting to US $ 1.7 billion (approximately Rp 23.8 trillion). In addition Murray has also received a credit of US $ 350 million (approximately Rp 4.9 trillion) to keep his business running even though it has gone bankrupt.

The factors that cause financial difficulties include high interest rates, low cash flow, and low profit margins, as well as poor credit management (Edwards et al.,2017). Financial difficulties will occur if the company does not have sufficient cash to pay debts when they fall due, the current cash flow situation should be a good indicator of possible financial difficulties, if current cash flows reflect future financial status (Cheng Chi-Bin et al (2006).

Financial distress was experienced by State-Owned Enterprises of Various Industries and Agriculture in 2019, this is indicated by the low Altman Z score index which is below 1.23, where the Ministry of Finance uses return on equity (ROE) and debt to equity (DER) as indicators. One of the reasons is the lack of current assets, besides that, profit before interest and taxes are not sufficient to face economic pressures (Rachmatarwata, 2019).

Accounting information is very important in evaluating company performance, one of which can use financial ratios because it can reveal the financial condition and performance that has been achieved by the company in a certain period (Widarjo and Setiawan, 2009). Ratio analysis such as profitability, liquidity, leverage and solvency can detect financial difficulties. This research wants to empirically prove the effect of liquidity, profitability and leverage on financial distress.

2. LITERATURE REVIEW

Financial Distress

Financial distress is a situation where companies cannot service their debt flows, companies experiencing financial difficulties must meet more costs than normal companies (Wijantini, 2007). Financial distress implies a situation where the company faces financial difficulties to the point that it fails to carry out daily operational activities smoothly (Ally and Bwana, 2019). Financial failure is defined as the company's inability to pay its obligations due to inadequate working capital (Zeytınoglu and Akarım, 2013). From several definitions of financial distress, it can be concluded that financial distress is a condition where the company has difficulty fulfilling its obligations due to a significant decline in profits from year to year and even causes a deficit and if this situation is not followed up, the company will experience bankruptcy.

Liquidity

Liquidity is the ability of a company to pay off financial obligations (Putri and Merkusiwati, 2014). According to Sanjaya et al., (2015), the company's ability to meet its debts can be seen from how much the company has assets that can be converted into cash if the company goes into liquidation (Nugraha and Fajar, 2018). Corporate liquidity is beneficial for creditors, because it will provide guarantees for creditors to provide further loans (Suprapto and Hariyati, 2018).

Profitability

Profitability is the company's ability to earn profits that can describe the company's existence (Ervina, 2017). Profitability also describes the company's financial performance in relation to the interests of the owners (Dewi, 2015). Profitability measures can be of various kinds, such as operating profit, net income, rate of return on investment/assets, and rate of return on owner's equity.

Leverage

According to Setiawan and Amboningtyas (2018), the leverage ratio describes the extent to which the company is financed by debt, then Curry and Banjarhanor (2018) state that the leverage ratio shows the company's ability to meet its obligations. The potential for financial distress will increase if leverage cannot be handled properly. The leverage ratio is a ratio to measure the comparison of the funds provided by the

owner with funds borrowed from the company's creditors which aims to measure to what extent the company's assets are financed by debt (Rohmadini et al., 2018).

The Effect of Liquidity Ratio on Financial Distress

The liquidity ratio describes the company's ability to pay its short-term obligations (Setiawan and Amboningtyas, 2018). The more liquid a company is, the more it avoids the threat of financial distress (Sunarwijaya, 2017), similarly expressed by (Abubakar et al., 2018) that the increasing the company's liquidity, the potential for financial distress will decrease.

H_1 : Liquidity ratio has a negative effect on financial distress.

The Effect of Profitability Ratios on Financial Distress

Profitability is the level of success or failure of the company over a certain period of time (Setiawan and Amboningtyas, 2018). The profitability ratio describes the company's ability to earn a profit, and the profitability ratio can be measured through Return on Assets (ROA). Companies that have a high profitability value, the less likely the company is experiencing financial distress (Setiawan and Amboningtyas, 2018).

H_2 : Profitability ratio has a negative effect on financial distress.

The Effect of Leverage Ratio on Financial Distress

Leverage reflects the availability of company funds through loans. The amount of leverage indicates the management's inability to manage debt to finance the company's operations (Suprapto and Hariyati, 2018). If the debt is greater than the own capital, there will be a risk of payment difficulties in the future (Arie et al., 2018). Companies that have large debts will find it difficult to release the debt burden (Setiawan and Amboningtyas, 2018). The amount of the company's total debt will result in financial distress (Hidayat and Meiranto, 2014).

H_3: Leverage ratio has a positive effect on financial distress.

3. RESEARCH METHODS

The population of this study is the financial statements of mining companies listed on the Indonesia Stock Exchange, for the period 2014-2019, totaling 50 companies. The sample was determined using purposive sampling with certain criteria.

Determination of the sample is done by using purposive sampling with the following criteria:

Table 1

Sample Criteria

No	Sample Criteria	Number of Samples
1	Mining companies listed on the IDX with observation year 2014-2019	50
2	Companies experiencing delisting	3
3	Companies whose IPOs are over 2014	5
4	Companies that do not use Rupiah in their financial statements	30
5	Number of observation samples	12
6	Research period	6
7	Total sample	72

Source: Data Processed, 2021.

The number of companies that met the criteria were 12 companies with 6 years of observation, the number of samples 72 observations. The data collection procedure in this study uses the documentation method. Data collection is by accessing data from the financial statements of banking companies listed on the Indonesia Stock Exchange.

The variables used in this study are financial distress as the dependent variable and profitability, liquidity and leverage as independent variables. Financial distress variable is proxied by DER by comparing total debt with total equity. Profitability variable is proxied by return on assets, liquidity variable is proxied by current ratio and leverage variable is proxied by debt to asset ratio.

Data analysis was carried out by descriptive analysis and inferential statistics. Hypothesis testing used multiple regression analysis with the help of SPSS. Prior to multiple regression, the classical assumption test was first performed as a requirement for regression testing. Systematic regression equation:

$$\mathbf{Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e}$$

Description:

Y	= *Financial distress*
a	= constant
b_1, b_2, b_3, b_4	= Regression coefficient
X_1	= Liquidity
X_2	= Profitability
X_3	= Leverage

4. RESULTS AND DISCUSSION

Results

Descriptive Analysis

Table 2

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
X1_LIK	72	.21	146.13	5.7536	21.39168
X2_ROA	72	-1.54	.28	-.0381	.24300
X3_LEV	72	.04	1.20	.4760	.18183
Y_FID	72	.04	5.91	1.1106	.93586
Valid N (listwise)	72				

Source: Data Processed, 2021.

Classic Assumption Test

Classical assumption test is one of the requirements to perform regression analysis. Classical assumption tests performed are normality, autocorrelation, heteroscedasticity and multicollinearity tests. Based on the normality test, it shows that the data is not normally distributed because the probability value is < 0.05, so it must perform a data transformation or change the data into LN (natural logarithm) form so that the data is normally distributed. All independent variables have a tolerance value > 0.10 and a VIF value < 10, so that the data is free from multicollinearity. The regression model formed there is no symptom of heteroscedasticity because the sig value is > 0.05. the Durbin-Watson value is calculated as 2.089. Based on the Durbin-Watson table for 5% alpha and 3 independent variables (k = 3), in a sample of 72 data (n=72) the value of du is 1.7054 and the value of 4 – dU is 2.2946, this is shows that this research model is free from autocorrelation because the Durbin Watson value is 2,089 between dU and 4-dU.

Hypothesis testing

Hypothesis testing in this study was conducted using multiple linear regression analysis.

Coefficient of Determination

Table 3

Coefficient of determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952[a]	.907	.903	.25109

Source: Data Processed, 2021.

The coefficient of determination (R^2) is used to determine how much the variability of the independent variables and to clarify the variability of the dependent variable. Based on the table above, it can be concluded that the value of R Square is 0.907. This shows that the independent variables, namely liquidity, profitability and leverage have the ability to affect financial distress by 90.7% while the remaining 19.3% is influenced by other factors or variables.

Partial Hypothesis Testing (t test)

Tabel 4

Uji T Coefficients

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	-0.878	0.135		-6.527	0.000
X1_ROA	-1.155	0.411	-0.129	-2.808	0.007
X2_LIK	0.030	0.034	0.043	0.858	0.395
X3_LEV	3.987	0.213	0.943	18.746	0.000

a. Dependent Variable: Y_FID

Source: Data Processed, 2021.

Tabel 4 is the result of testing data with multiple linear regression analysis with a significance level of 5%. The multiple linear regression interpretation can be explained as follows:

Y = 0.878 + 0.030 X1 - 1.155 X2 + 3.987 X3 + e

The multiple linear regression interpretation can be explained as follows:

1. The regression coefficient of the liquidity variable (X1) of 0.030 is positive, this means that if liquidity increases, financial distress (Y) will increase by 0.030 with the assumption that other independent variables are constant. The liquidity

variable has a significance of 0.395, which means it has a value greater than 0.05. Thus, it is concluded that liquidity has no effect on financial distress.

2. The regression coefficient value of the profitability variable (X2) of 1.155 is negative, this means that if profitability increases, financial distress (Y) will decrease by 1.155 with the assumption that other independent variables are constant. The profitability variable has a significance of 0.007 which means it has a value less than 0.05, thus it is concluded that profitability has an effect on financial distress.
3. The regression coefficient value of the leverage variable (X3) of 3.987 is positive, this means that if leverage increases, financial distress (Y) will increase by 3.987 with the assumption that other independent variables are constant. The profitability variable has a significance of 0.000 which means it has a value less than 0.05, thus it is concluded that leverage has an effect on financial distress.

Discussion

The Effect of Liquidity on Financial Distress

Liquidity has no effect on financial distress, this is evidenced by a significance value of 0.395 > 0.05. The liquidity ratio in this study is proxied by the ratio of current assets to current liabilities which compares current assets owned by the company with current liabilities. In current assets there are accounts receivable and inventories which if later will be used to pay short-term obligations, it still takes a lot of time and is different for each company. The company's liquidity level cannot guarantee that financial distress will be experienced by the company, because the current ratio is used to measure short-term liquidity while financial distress is a prediction for the long term. The high value of the current ratio is usually caused by the large number of current assets owned by the company such as inventories and accounts receivable. The results of this study are in line with research conducted by Hanifah (2013), Andre (2013), Sopian and Putri (2017), Kariani and Budiasih (2017) and Dewi and Dana (2017) which stated that liquidity had no effect on financial distress.

The Effect of Profitability on Financial Distress

The profitability variable has an influence on financial distress. This is evidenced by a significance value of 0.007 < 0.05. This indicates that if the level of a

high profitability ratio indicates the company's ability to use and manage its assets effectively and efficiently in generating profits, in other words, the company's financial performance is in good condition. Then the company can make savings and have sufficient funds to carry out operational activities that will prevent the company from financial distress. Conversely, if the level of profitability ratios is low or financial performance is not good, it is possible that the company will be less effective in managing its assets to generate competition, when the profit generated by the company decreases, it will cause losses which result in the company experiencing financial distress.

This study shows that profitability is one of the factors that greatly affect the state of financial distress of a company. This is because profitability is a ratio that calculates how much a company's ability to generate profits uses all types of capital, assets and company sales (Sudana, 2015). Profit itself is the main goal to be obtained for the business continuity of every established company. Companies with high profitability can generate profits in accordance with the company's targets so that the company's financial condition will be more stable than companies that have high profitability. The results of this study are in line with research conducted by Noviandri (2014), Yeni Yustika (2015) and Yunelfi and Septiana (2019).

The Effect of Leverage on Financial Distress

The leverage variable has an influence on financial distress. This is evidenced by a significance value of 0.000 < 0.05. Leverage ratios can be used to measure how much a company's spending or financing comes from debt. This shows that the increase in leverage indicates the company's condition is very large to experience financial distress. Companies are categorized as healthy if they have a low leverage ratio. This ratio shows whether the total debt owned by the company is greater than the total assets owned or vice versa. If the company has a high percentage of debt usage, it is possible that the company will have difficulty in paying. And if the company has a high level of leverage, it will make it difficult for the company to obtain maximum profit which will affect the investment decisions of investors. This condition will be very detrimental to the company, if an evaluation action is not taken immediately under these conditions the company will slowly experience financial problems or financial distress which can lead

to bankruptcy. The results of this study are in line with research conducted by Sutiono (2017), Susilowati and Fadlillah (2019) and Julius (2017).

5. CONCLUSION

Liquidity has no effect on the occurrence of financial distress, meaning that liquidity is not able to predict financial distress. The company's liquidity level cannot guarantee that financial distress will be experienced by the company, because the current ratio is used to measure short-term liquidity while financial distress is a prediction for the long term, so that no matter how large the company's liquidity will not affect the possibility of the company experiencing financial distress. Profitability has an effect on the occurrence of financial distress. Companies with high profitability can generate profits in accordance with the company's target so that the company's financial condition will be more stable than companies with low profitability so that it will minimize the occurrence of financial distress in the company.

Leverage has a significant effect on the occurrence of financial distress. This shows that a company is categorized as healthy if it has a low leverage ratio. The greater the leverage ratio explains that the debt owned by the company is also high, this can cause the risk of default if not managed properly so that financial distress will be very likely to occur.

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