THE INFLUENCE OF EXCHANGEABILITY, LEVERAGE, INFLATION, AND INTEREST RATE ON FINANCIAL PROBLEMS AMONG MANUFACTURING COMPANIES LISTED ON INDONESIA STOCK EXCHANGE DURING 2018-2021

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ABSTRACT

Many companies are facing financial difficulties and some are failed into bankruptcy. One of the categories of financial distress is business failure which is mostly caused by economic and financial factors. This research provides empirical evidence regarding internal and external factors that affect the financial distress of several companies. The sample consists of 25 manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the period of 2018-2021. This study used multinomial logit regression analysis with liquidity and leverage as internal variable factors, inflation, and interest rates as external variable factors of the companies. The data had used secondary data derived from financial statements. The results showed that Exchangeability and Leverage had significant effects on Financial Distress meanwhile Interest Rates and Inflation had not influenced the Financial Distress significantly.

Keywords: exchangeability, leverage, inflation, interest rates, financial problems

1. BACKGROUND

The company's failure to run its business will give a negative impact on creditors and investors as stakeholders. Such companies will be declared bankrupt by the court. Before that, the company will experience conditions that is called financial distress. [1] explained that a company would be declared having financial distress if the company was unable to fulfill its financial obligations. Violation of debt covenants accompanied by elimination or reduction of dividend payments is the first signal of the company difficulties.

According to [2], financial distress is a condition in which a company or individual cannot generate sufficient revenues or income, making it unable to meet or pay its financial obligations and generally due to high fixed costs, a large degree of illiquid assets or revenues sensitive to economic downturns. Further [2] said that this condition occurs when revenues or income no longer meet or pay for the financial obligations of an individual or organization. Bankruptcy can be avoided if the company is able to predict the occurrence of financial hardship earlier so that the management can step in necessary actions to improve the company conditions. One of the analytical techniques that can be done is by using financial ratios. One of the ratios used is the liquidity ratio. For predicting financial distress, the liquidity ratio can be used, where to find out the company's ability to pay off its short-term obligations. In research conducted by [3] written that there were influence between liquidity and financial distress. Due to lower liquidity, the company results in financial distress. [4] showed us that liquidity had a negative influence on financial distress conditions, [5] found that liquidity had a significant negative influence on financial distress. It means, the lower the liquidity of a company is, the higher opportunity occurrence of financial distress will be.

Leverage is a ratio used to find out how much the company's assets are financed by account. [6] said if the company's total debt is too large, it will make a company more susceptible to financial constraints. This is in line with research conducted by [7] which found that leverage can be used to predict financial distress.

The condition of funding constraints can be evaluated by looking at the macroeconomic conditions in the areas of some countries, poor macroeconomic conditions in a country influence the possibility of companies in a country to experience financial distress. [8] Macroeconomic conditions include: inflation and interest rates. Inflation is macroeconomically defined on increasing prices of goods and services in general and continuously [9]. Mild inflation will provide encouragement for the economy to be better and vice versa. Inflation gives signal to investors about the company's financial condition, research results conducted by [10] stated that macroeconomic conditions could indicate financial difficulties in certain companies listed on the Pakistan Stock Exchange (PSX-100), [11] stated that inflation significantly contributes positive effect on financial problems.

The rate of interest is closely related to creditors and debtors. Interest rate is also a measured characterized to mark economic activities of a country that gives an impact on the company's cash flow turnover [8]. Interest rates give a signal about the conditions of a company in the country. Determination of the rates by Bank Indonesia is aimed to stabilize the rupiah exchange rate [12].

Several researchers who have conducted research on the effects of the rates in financial distress including [8], [12] and [13] stated that interest rates have an effect on financial distress, are contrary to the results of some research conducted by [14], [15], [16] and [17] which stated that interest rates have no effects on the stock prices.

2. LITERATURE STUDY

Financial Distress

According to [18], financial problems is a condition when a company cannot pay off or is having difficulty in paying off their obligations to creditors. According to [19] financial distress is a condition when the company is unable to pay its obligations on pay due, resulting in liquidity difficulties which became the beginning of bankruptcy. Financial distress is a stage of declining the company's financial condition before the occurrence of bankruptcy or liquidation [20].

Based on the definitions of financial distress, it can be concluded that it is a condition when a company cannot fulfill or is experiencing financial distress difficulty in fulfilling its obligations to creditors as they fall due to the liquidity problems that lead to bankruptcy.

Liquidity

Liquidity shows the ability of a company to pay debts in time, and how quickly a company converts current assets (payable accounts and inventory) into cash [21].

[22] explains that liquidity is the company's proficiency to convert current assets of the company into cash in a short period of time. According to [23], liquidity is the speed and convenience of converting assets into cash, the higher the company's liquidity is, the better the

company's financial condition will be in the short term, so that the possibility of financial distress is getting smaller [24].

[18] at Government Linked Companies in Malaysia recorded significant liquidity had affected financial distress conditions, because of the higher the liquidity, the company's capability to pay its short-term debt is higher and vice versa. In this case, the company will be further away from financial distress.

[25] said that the possibility of companies avoiding financial distress is related to with liquidity. The more liquid a company is, the smaller the risk of financial distress the company will face. This is in line with what was found by [3] finding the effect of liquidity on financial distress. The lower the company's liquidity is, the higher the company's opportunity to be in a state of financial distress will be. Therefore, the first hypothesis in this study is as follows:

H1: Liquidity has a significant effect on financial distress.

Leverage

According to [18], leverage is used by companies to measure how well the status of the company conditions to meet its financial obligations. Leverage refers to the effect that owned fixed costs to the desired rate of return by shareholders, the higher the leverage is, the higher the rate of return will be but will be unstable [26].

[27] said that the probability of bankruptcy slightly increased when the company owes more money, regardless of how big their cash flow is and the increasing will be greater for companies with more risky businesses.

In intricate conditions, where the company's profits continue to decline or even experience continuous loss, the company may not be able to pay its debts. When the company is unable to fulfill its obligations then it will increase the possibility of financial distress. This is in line with research conducted by [7] in 2018 who found that there was a significant impact of leverage on financial distress. This is also supported by research conducted by [28] who found that leverage influenced financial distress and that also supported by the research conducted by [6] which found that the higher the leverage is, the company will be more susceptible to experience financial distress.

The higher the use of debts (leverage) as capital is, the greater the possibility of the company will experience financial distress.

H2: Leverage gives an impact on financial distress.

Interest Rate

It is the annual excess payment on a stated loan in percentage of loan or annual interest [29]. According to [30], the loan company which takes funds in the Bank will be charged a percentage on interest on the loan or debt, the greater the interest expense borne by the company, the more likely it is that there will be a decrease in company profits and this will lead to probability of financial distress.

According to [29], the rate is the annual excess value payment on a loan that expressed in the form of a percentage. From the company's perspective, interest rates are considered an expense that must be borne by the company for certain nominal debts loaned by banks. In Indonesia,

the measurement used is the interest rate set by the Bank Indonesia as the central bank which has a policy in setting interest rates, obtained from the results of publications each year conducted by BI for the period 2013-2017.

According to [31], the interest rate will give impact on the debt repayment that must be paid to creditors thus affects the company's financial performance caused by the company having difficulty paying off debts along with the loan interest. The higher the interest rate burden is, the lower the company's operating profits will be so that it will increase the possibility for the company to experience financial distress.

H3: Interest rate affects financial distress.

Inflation

Inflation is a term for macro fundamental factor and macroeconomic indicator that describes an unhealthy economic condition because the prices of goods increases overall, thereby weakening the ability of purchasing. When the inflation rate is high, it means the price of goods has increased, it causes public demand will tend to decrease as prices are rising. This situation can hinder the company's production activities because the quantity of sales will be decreased along with decreasing requests [30]. Inflation is the tendency of an overall increasing price value of products so that there is a decreasing ability in purchasing involved by money or what is commonly called with a decrease purchasing power of money [32].

Increasing overall price of goods will reduce consumer demands for products and automatically the company's sales will also decline. When this happens on an ongoing basis it will harm the company due to reduced revenue company, thus triggering financial distress.

H4: Inflation affects financial distress.

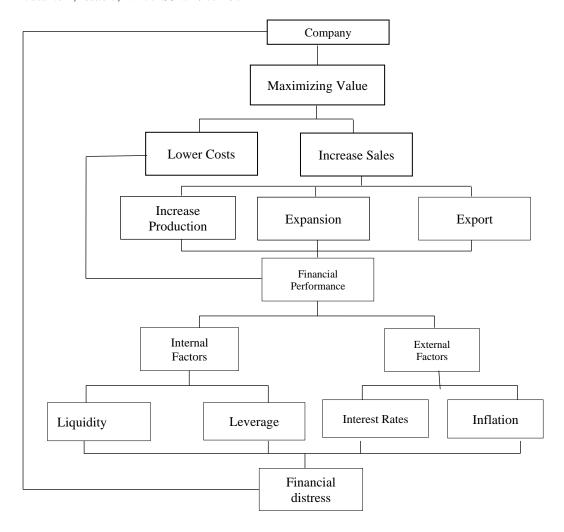


Figure 1. The Framework

3. RESEARCH METHOD

The population taken in this research are manufacturing sector companies that go public on the Indonesia Stock Exchange for period 2018-2021. The data collection method is carried out by library research and data documentation studies.

This research uses purposive sampling method which aims to get a representative sample in accordance with the considerations and criteria that have been determined. There were 25 companies of manufacturing sector listed that went public on the Indonesia Stock Exchange and the related data of 2018-2021 was taken for this study.

Liquidity is how quickly the company's capability to convert current assets into cash to pay off the company's short-term obligations within a short period of time. Liquidity measurement used in this research is Current Ratio, i.e. ratio comparison of Current Assets to Current Liabilities [4].

$$Current\ Ratio = \frac{Current\ Asset}{Current\ Liabilities}$$

Leverage is the cost effect that fixed costs have on the expected rate of return desired by shareholders and used to measure the conditions and abilities of the company in fulfilling its financial obligations, both in short-term and long-term.

The measurement "of leverage in this research is *Debt to Total Asset*, namely the ratio of comparison of Total Debt to Total Assets [18]."

$$Debt \ to \ Total \ Asset = \frac{Total \ Debt}{Total \ Asset}$$

Inflation rate is the tendency of price increasing on goods and services totally in a certain period. After knowing the annual inflation rate, the measurement will be carried out by paying attention to the inflation sensitivity with the formula:

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SENINF = A + B (STOCK RETURNS) + E
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The interest rate used was the 2021 interest rate and data expressed in percent (%). After finding out the interest rate value then the measurement was carried out using the BI interest rate sensitivity with the formula as follows:

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SENBI = \alpha + \beta (Stock returns) + e
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The measurement of financial distress used in this study is the Z-Score model [33] and [18]. $Z = 6.56T_1 + 3.26T_2 + 6.72T_3 + 1.05T_4$

Description:

T1 = Working Capital / Total Assets T2 = Retained Earnings / Total Assets

T3 = Earnings Before Interest and Taxes / Total Assets

T4 = Market Value of Equity / Total Liabilities

Z = Overall Score

Z > 2.9 = The company's financial condition is good 1.22 < Z < 2.9 = The company's financial condition is sufficient Z < 1.22 = The company's financial condition is in distress

Partial hypothesis testing in this study used the likelihood ratio test. This test was carried out to find out whether the independent variables had partially influenced the dependent variables. In this study, likelihood ratio test aimed to test the effects of liquidity, leverage, interest rates and inflation on the company's financial distress.

To test the effects of independent variables at once, the authors used Nagelkerke's R^2 value which can be interpreted as R^2 value as on the multiple regression. The statistical value of R-square in the logistic multinomial analysis is approximately approached by the value of Pseudo R-square, Negelkerke and McFadden, in the range of 0 - 1. The closer to 1, the more variation the model describes [34].

4. RESULTS

The results of the likelihood ratio test aimed to test the effects of liquidity, leverage, interest rates and inflation on the company's financial distress identified in Tabel 1, as follows:

Tabel 1. Likelihood Ratio Test (LR)

	Model Fitting			
	Criteria	Likelihood Ratio Tests		
	-2 Log			
	Likelihood of			
Effect	Reduced Model	Chi-Square	df	Sig.
Intercept	43.528 ^a	.000	0	
CR	62.627	15.222	2	.016
DR	57.823	8.538	2	.023
SB	61.649	1,774	2	.492
Inf	62.645	6.936	2	.458

Source: SPSS 23 Processing Result

Liquidity proxied by CR in this study has a significance value of 0.016, it can be concluded that liquidity has a significant effect on financial distress condition. Leverage proxied by DR in this study has a significance value of 0.023, it means that leverage has a significant effect on the company's financial distress. The interest rate in this research has a value of significance of 0.492, it means that interest rates do not have a significant effect to the company's financial distress. Inflation shows significance value of 0.458, it means that inflation does not have a significant effect on the company's financial distress condition.

In this research, the co-efficient of determination was measured using *Nagelkerke R square* and *McFadden*. The quantity of the Cox and Snell, Nagelkerke and McFadden co-efficient values can be learned in Table 2, as follows:

Table 2. The Coefficient of Determination Test Result

Pseudo R-Square

Cox and Snell	.725
Nagelkerke	.711
McFadden	.627

Source: SPSS 23 Processing Results

From the results, it is found that the test results in Tabel 2 had showed us the Cox and Snell coefficient value of 0.725, the Nagelkerke coefficient value of 0.711 and the McFadden coefficient value of 0.627. The Nagelkerke coefficient value shows that the variables of liquidity (CR), leverage (DR), interest rate (SB), and inflation (Inf), as independent variables in multinomial logit were capable to explain the company's financial distress condition of 71.10%.

The McFadden coefficient defines that the variability of the dependent variable is financial company distress can be explained by the independent variable of 62.70 % and the rest explained by other factors outside this research model.

5. DISCUSSION

Liquidity significantly influences financial distress. The results of this research are consistent with the research [18] which found that high corporate liquidity indicates the company's ability to better pay its short-terms debt, this causes the company to be further away from financial distress. It also in line with research conducted by [4] and [24] which found that liquidity has a negative effect on the possibility of distress. Company with high liquidity has better financial conditions in the short-term, thus the possibility of the occurrence of financial distress is getting lower.

Leverage does significantly affect financial distress where the higher the leverage is, the higher the possibility of financial distress will be. The results of this research are not consistent with the results of research held by [35] which found that the higher the leverage is, the smaller the possibility of financial distress will be, because financing with debt can reduce the possibility of financial difficulties due to tax deductions during debt burden (financial distress cost) is smaller than tax saving. However, the results of this study are consistent with research conducted by [36] and [6] which stated that leverage is directly proportional to chance of the company experiencing distress. If companies are more using debts for financing, they invite risks as having difficulties in paying debts and the loan interest in the future thus if this situation cannot be handled properly, the greater the potential will be for financial distress.

Interest rates are not significant to financial distress. The Keynes's theory which states that the economic activities of a country are influenced by government policies in setting the interest rates. This theoretics is not in line with the research results because the interest rate cannot be used as a measure in assessing the condition of financial distress of a company. This is because not all companies are affected by the changes of interest rates, because the interest costs that must be paid by the company have been agreed upon at the beginning of the loan contract so that it does not affect the company's financial stability. Interest rates per year in 2019-2021 was also quite stable, which was between 4%-5% so it had no a significant effect to financial distress conditions. The results of this study are in line with research conducted by [8], [37], [38], [39], [40], and [41].

Inflation is not significant to financial distress. Keynes's theory which states that economic activities are influenced by government policies, one of which is policy of direct supervision in stabilizing inflation. The higher the inflation rate is, the overall price of goods will rise, this will affect the decreasing ability in purchasing which declines company sales therefore the profits earned by the company will be reduced and led to financial distress. This theory is not in line with the results of this research, the data obtained in 2021 showed that the inflation rate in Indonesia is 1.87 %, according to [42] if inflation in a country is more than 10%, then it will affect the company's business risks so it can be concluded that if inflation in a country does not fluctuate and is still below 10%, then the level of financial distress operating companies are getting smaller. This study is in line with research results held by [43] and [37], however is contrary with ones conducted by [44] and [8].

6. CONCLUSIONS AND SUGGESTIONS

Liquidity, leverage, interest rates and inflation had influenced financial distress simultaneously and significantly in manufacturing mining sphere companies listed on the Indonesia Stock Exchange in 2018-2021. Liquidity and leverage had influenced financial distress partially and significantly. Meanwhile, interest rate and inflation had not influenced the financial distress

either partially or significantly in manufacturing mining sector companies listed in the Indonesia Stock Exchange 2018-2021. The financial distress of the companies can be described all through the variables of Liquidity, Leverage, Interest rate and Inflation of 62.70% and the rest is explained by the factors outside the model of this research.

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