ANALYSIS FINANCIAL DISTRESS USING ALTMAN Z-SCORE MODEL (GARMENT AND TEXTILE INDUSTRIAL SUBS SECTOR IN BEI 2018-2021)

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Abstract: Garments and textiles are sub-sectors that contribute to high GDP growth but, in 2020 and 2021 there has been a decline caused by a decrease in export demand. This will have an impact on the production process and profit that the industry is worried about will experience financial distress. The purpose of this study is to find out and analyze whether the Altman Z-Score model is influential and able to predict financial distribution in the garment and textile sub-sector industries registered with the BEI. The sampling techniques used in this study are purposive sampling and sampling techniques of 16 industries. This study used a quantitative approach with data collection techniques through documentation techniques sourced from secondary data in the form of industrial financial statements. The analysis method used is discriminant analysis using SPSS. The outcomes of this study show that working capital on total assets, retained earnings on total assets, pre-interest income and taxes on total assets, market value of equity on total liabilities, and sales on total assets are influential and able to predict financial distress in the garment and textile industries, with accuracy This model is 81.3%.

Keywords: Financial distress, bankruptcy predictions, Altman Z-Score..

INTRODUCTION
Introduction

Economic growth in Indonesia is growing quite rapidly with Indonesia's entry into the G20. This economic growth can be seen in the growth rate of Gross Domestic Product (GDP), which is one of the largest GDP support industries, namely the garment and textile sub-sector manufacturing industries. The rise of the textile and clothing sectors which soared to 15.08 percent in the third quarter of 2019 shows a considerable contribution to the national economy. However, there was a decrease in GDP in 2020 and 2021, caused by a decrease in export demand in the garment and textile industries.
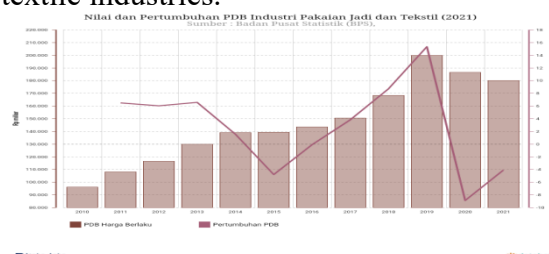

Figure 1 GDP Growth in Textile and Clothing Industries
Source: Databoks.katadata.co.id

Based on BPS data, exports decreased from 2018 to 2020, even a significant decrease occurred in 2019 to 2020 from exports of 335,200 tons to 290,100 tons, this will have an impact

on income, as well as industrial profit. This declining industrial profit does not preclude the industry from having financial distress paying for its operations and liabilities.

Financial distress was an industrial condition before bankruptcy. According to Matturungan, Purwanto, & Irwanto (2017), financial distress prediction is very important as an early detection step so that both industries and investors can know the possibility of bankruptcy in the future, so that evaluation and measures can be performed to prevent bankruptcy. This is one of the important reasons for a tool that can predict financial distress conditions. According to Subramanyam; Wild, John J (2010:288) financial distress, commonly called bankruptcy prediction models.

The Altman Z-Score model is one of the high-accuracy bankruptcy prediction models. According to Altman and McGough (1974) in (Marcelinda, Paramu, & Puspitasari, 2014), the prediction rate of bankruptcy using the Altman Z-Score model is 82%. A high level of Z-Score altman accuracy has been widely proven by previous researchers, research conducted by Kurniadi (2021) be discovered that the Z-Score Altman model has an accuracy of 97.6% in manufacturing companies at BEI. Research on manufacturing companies by Matturungan, Purwanto, & Irwanto (2017) also be discovered that Altman Z-Score has an accuracy rate of 87.8%. However, the altman model does not necessarily show the highest level of accuracy when applied. The research conducted by Wijaya (2018) on the Food And Beverage Company listed on the Indonesian Stock Exchange has an accuracy rate of 23.1%.

Inconsistency over the accuracy of the Altman model suggests the need to adapt this Z-Score altman model by examining even if the Z-Score altman model ratio is influential and able to predict financial distress in the garment and textile sub-sector industries.

Research purposes

This study objective to find out and analyze even if the Altman Z-Score model is influential and capable to predict financial distribution in the garment and textile sub-sector industries registered with the BEI.

LITERATURE REVIEW
1. **Signaling Teory**

The signal theory was first discovered by Space in 1973 in his research "Job Market Signaling". Signals are directives given by the company to outsiders (Gumanti, 2009). In this study, signal theory has a relationship with corporate bankruptcy predictions, because signal theory is a way for corporate shareholders to view corporate opportunities in future corporate value based on information provided by corporate management. Financial distribution is an analysis conducted by a company as information and signals whether or not the company is experiencing potential bankruptcy.

2. **Financial Distress and Bankruptcy**

According to Platt & Platt (2002), financial distressare defined as the final stage of a decline in corporate conditions that occurred before bankruptcy or liquidation. Financial distress starts from inability to fulfill its obligations, especially short-term obligations including liquidity obligations, and also includes obligations in the solvency category. Meanwhile, according to Maulidia & Asuk (2020) financial distress is a financial condition of companies that occurred before bankruptcy due to problems, crises, or unhealthy conditions. Bankruptcy is a condition in which a company is unable to repay its debts and operational activities or is referred to as financial distress.

1. **Causes of Financial Distress**

According to the 2002 license in Fachrudin (2008) the cause of financial distress is:

a. Neoclassical model
In this scenario, insolvency occurs if resource allocation is not suitable. This restructuring situation arises when bankruptcy occurs due to an incorrect combination of assets. Assessing challenges is conducted using data from the balance sheet and income statements. For instance, profit/assets (to gauge profitability) and liabilities/assets.

b. Financial model
The asset combination is accurate, but the financial framework is flawed with liquidity constructs. This implies that while the company can survive in the long run, it must go bankrupt in the near term. Imperfect capital markets and capital structures are the primary triggers in this situation. It cannot be definitively determined whether bankruptcy is beneficial or detrimental for restructuring in this case. This model assesses challenges using financial indicators or performance indicators such as turnover/total assets, revalues/turnovers, ROA, ROE, and so forth.

c. Corporate governance model
In this instance, bankruptcy occurs due to a correct mix of assets and financial structures, but mismanagement is to blame. This inefficiency leads to companies exiting the market as a result of unresolved corporate governance issues. This model assesses challenges using ownership information. Ownership pertains to the corporate governance structure and corporate reputation.

2. The Altman Z-Score Model

According to Subramanyam; Wild, John J (2010:288) the financial difficulty model, commonly called the most famous bankruptcy prediction model, is Altman Z-Score. According to Ivanis, Marko; Ogezavic, Lazar (2017) Z-Score's formula for public corporations.

$$Z = 1.20\ X_1 + 1.40\ X_2 + 3.30\ X_3 + 0.60\ X_4 + 1.00\ X_5$$

Where:
Z = Z-Score value
X_1 = ratio of working capital and total assets
X_2 = accumulated ratio of retained earnings and total assets
X_3 = profit ratio before interest and tax deductions and total assets
X_4 = market value ratio of equity and total liabilities
X_5 = ratio of sales revenue and total assets

Company circumstances are classified as follows:

a. If $Z \geq 3.0$, it means that the corporation has no financial distress so that the corporation's financial condition is stable and the company is not threatened with bankruptcy.

b. If $Z \leq 1.8$ then it has enormous financial distress and it is difficult to find a solution. The company is at high risk of bankruptcy.

c. If $1.8 \leq Z \geq 3.0$, or Z is between 1.8 and 3.0, then companies that have financial distress, but are likely to be saved and likely to go bankrupt are equally dependent on the decision-making of the company's management as decision-makers. Companies are in a 'gray area' (zone of risk) and there are signs that the financial situation is not favorable, namely having minimal credit performance.
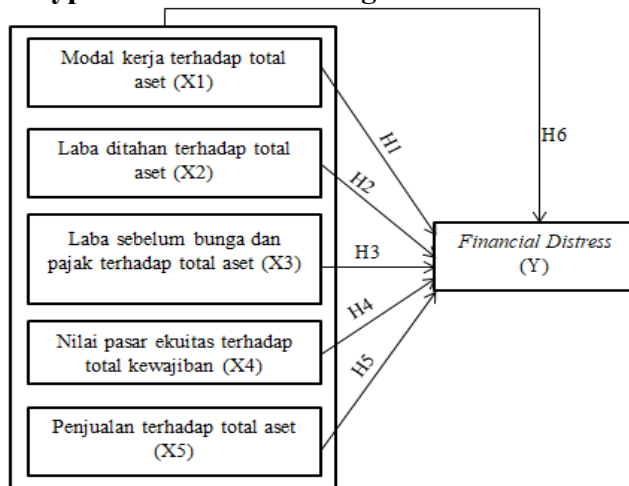
3. Hypotheses and Thinking Framework

Figure 2 Framework of Thought

H1: Working capital and total assets have an effect on financial distress.
H2: Retained profit and total assets have an impact on financial distress.
H3 : Profit before interest & tax and total assets have an effect on financial distress.
H4 : The market value of equity and total liabilities have an effect on financial distress.
H5 : Sales revenue and total assets have an effect on financial distress.
H6: The Altman Z-Score model is influential and able to predict financial distress.

RESEARCH METHODOLOGY

The population in this study is 22 manufacturing industries of garment and textile industries listed on the Indonesian Stock Exchange. The sampling technique used purposive sampling with the criteria: (1) financial statements were published into the BEI or company's official website from 2018-2021, (2) if using foreign currency in the presentation of financial statements, the conversion of value to rupiah currency must be clear, and (3) the value of market capitalization is known from period 2In 2018-2021, 16 industrial samples were obtained. This study uses a quantitative approach. The data collection in this study used documentation techniques obtained from secondary data in the form of industrial financial statements. Data analysis is performed using discrete analysis using SPSS v.25 consisting of partial tests, simultaneous tests, and model accuracy tests.

RESULTS AND ANALYSIS
Discriminant Analysis Test Results
Partial Test

Table 1 Table of Partial Test Results

	Sig
X1	0,010
X2	0,022
X3	0,048
X4	0,005
X5	0,048

Source: Secondary data processed, 2023

Based on the table above shows that partial testing using F-test shows the results that each independent variable has a positive value.This is a significance value below 0.05, which means that there are differences between groups or industrial conditions that are financially distressed or not. There are differences between these groups so, it can be said that industrial conditions are affected by X1 (working capital/total assets), X2 (retained profit/total assets), X3 (earnings before interest and taxes/total assets), X4 (equity market value/total liabilities), X5 (sales income/total assets).

Simultaneous Tests

Table 2 Table of Simultaneous Test Results

Test of Function(s)	Sig
1	0,002

Source: Secondary data processed, 2023

Based on the table the data shows that, the discriminant function has a significant value below 0.05, which means that there is indeed a clear distinction of the discriminant function that is formed. This can be interpreted as that every industry condition is either financially distressed or has no difference, where the difference is certainly affected by independent variables. So it can be said that, as a whole, independent variables can distinguish industrial conditions or be able to classify financial distress.

Test Model Accuracy Level

Table 3 Table of Model Accuracy Level Test Results

	Y	Predicted Group Membership		Amount
		Financial distress	*Non financial distress*	
Original	*Financial distress*	46	2	48
	Non financial distress	10	6	16
%	*Financial distress*	95,8	4,2	100
	Non financial distress	62,5	37,5	100

Source: Secondary data processed, 2023

Based on the table above shows that the accuracy of the discriminatory model predicts the financial distress of the garment and textile sub-sector manufacturing industry at 52/64 or 81.3%. This model is appropriate to characterize the financial conditions of the industry.

DISCUSSION

1. **Effect of working capital and total assets on financial distress**

   Partial tests proved that variables of working capital and total assets had an effect on financial distress. The relationship between these two variables is that if the positive value of the ratio shows that working capital is also positive, which means that assets are smoothly higher than debt, it affects industrial conditions. If assets are smoothly higher, the industry is able to repay its debt smoothly, so the industry does not experience financial distress. On the other hand, if the negative value of the ratio shows that working capital is also negative, which means that the assets are smoothly lower than the debt is smooth. If the assets are

smoothly lower than the debt is smooth, then it can be said that the industry cannot afford to pay its obligations, resulting in the industry experiencing financial distress that makes the industry bankrupt. The outcome of this test are in line with the signal theory, which is that by knowing the result of this ratio, if the value of the ratio is negative then it can give guidance to the industry that the industry will experience financial distress.

2. **Effect of retained earnings and total assets on financial distress**

Partial tests proved that the variables of retained earnings and total assets had an effect on financial distress. The relationship between these two variables is that if the value of this ratio is positive, then the industry has a reserve fund that can be used to help its business activities even to help pay its debts so that the industry does not have financial distress. On the other hand, if the negative ratio value can be interpreted as negative retained earnings, then the industry does not have any reserve funds that can be used to assist its business activities. This can lead to financial distress. The results of this test are in line with the signal theory, that by knowing the result of this ratio, if the value of the ratio decreases and is even negative, it can provide guidance to the industry, that the industry will experience financial distress..

3. **Effect of profit before interest&tax and total assets on financial distress**

Partial tests proved that the variables of profit before interest & tax and total assets had an effect on financial distress. The relationship between these two variables is that if the value of this ratio is positive, the pre-tax profit is also positive which means that the industry has a profit, with this advantage proving that the income is higher than the burden so that by making profits, it can be said that the industry has no financial distress. On the other hand, if the ratio value is negative, then profit is also negative. This shows lower income compared to the burden or so-called industrial losses. The losses that continue to occur in this industry can lead to financial distress due to insufficient funds to carry out industrial activities. The outcome of this test are in line with the signal theory that if the ratio is negative, which means that the industry is at a disadvantage, it can provide guidance to the industry that the industry will suffer financially..

4. **Effect of market value of equity and total liabilities on financial distress**

Partial tests proved that the variables of market value of equity and total liabilities had an effect on financial distress. The relationship between these two variables is that the ratio value above 1 indicates that the market value of equity is higher than the total liabilities, which means that the industry is able to fulfill all its obligations, so the industry can be said to have no financial difficulties. On the other hand, if the ratio value is below 1, it shows that the market value of equity is lower than the total liabilities which means that the industry is unable to fulfill its obligations, resulting in financial distress. The results of this study are in line with signal theory, that if the ratio value is below 1 which means that the total industrial debt is higher than the market value of equity, it can give the industry a clue that the industry will experience financial distress.

5. **Effect of sales revenue and total assets on financial distress**

Partial tests proved that the variables of sales revenue and total assets have an influential on financial distress. The relationship between these two variables is that if the value of this ratio is higher, the sales obtained by the company are higher than the total assets, which means that the industry is able to manage its business well so that the industry is not concerned with finance and avoids financial distress. On the contrary, if the value of the ratio

decreases, indicating that the earned sales are decreasing more than the total assets, which means that the industry is managing its business less well. Continuous decline in sales may result in losses, and industries are concerned about financial distress. The outcome of this study are in line with signal theory, that if the value of the ratio decreases then it can provide a clue to the industry that the industry will experience financial distress.

6. **Effect of the z-score model on financial distress and the z-score model is able to predict financial distress.**

Test results show that the z-score altman model is influential and able to predict financial distress to find out the potential for bankruptcy in the garment and textile sub-sector. This is demonstrated by the results of the accuracy test using spss indicating a value of 81.3% which means that the discriminant analysis is appropriate to categorize industrial conditions that are financially distressed or not, with this result being accepted. The results of this study are in line with the results of previous researchers, one of which is the research conducted by Matturungan, Purwanto, & Irwanto, (2017) This paper presents a study that shows that the financial ratio of the Altman Z-Score model can be used to categorize financially distressed industries and thus predict corporate bankruptcy.

CONCLUSION

Based on the results of the analysis and discussion of the Financial Distress Analysis of Companies Using the Altman Z-Score Model in the Manufacturing Industry (Sub-Section of Garment and Textile Industries) Registered in the BEI for the period 2018-2021, it can be concluded that working capital for total assets, retained against total assets, net income.The market value of total liabilities, and sales of total assets are influential and predictable financial distribution in the garment and textile industries, with an accuracy of 81.3%.

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