Does Financial Distress Using Altman Z-Score Capital Affect Stock Price?

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Abstract---Changes in stock prices that occur in the capital market can be influenced by various factors from internal factors and external factors. The failure of the company can be seen from financial conditions that are not good and the company's stock price that continues to fall or experience stagnation. This condition if it is not immediately addressed by the company, the company may be able to experience the condition of bankruptcy or financial distress. The purpose of this study is to determine the effect of the Altman Z-Score ratio which consists of working capital to total assets, retained earnings to total assets, earnings before interest and tax to total assets, market value to book value of debt and sales to total assets to stock prices. The results of the study show that simultaneously the variables forming the Altman Z-Score affect the stock price by 30.83%. While partially only variables sales to total assets that have no influence on stock prices. The suggestion of this study is that companies and potential investors always pay attention to the financial performance of textile and garment companies, while the suggestion to other researchers is to use other financial distress models which affected stock price.

Keywords---Altman Z-Score's Form Variables, Stock Price.

I. INTRODUCTION

The activity of buying and selling shares in the capital market has an impact on changes in stock prices. Stock prices will always fluctuate from time to time which is influenced by the strength of demand and supply in the capital market. If the demand for the number of shares is higher, then the stock price will rise. Conversely if the number of shares is higher but demand is lower than the stock price will go down.

Changes in stock prices that occur in the capital market can be affected by a lot of factors, which are internal and external factors (Saudi, 2018). The internal factors that affected stock prices include announcements about marketing, production and sales; funding announcement; announcement of the management board of directors; announcement of diversified takeovers; investment announcements; employment announcements and announcements of company financial statements such as profit forecasting before the end of the fiscal year, income per share, dividend/ share, price/ share (EPS), net income and others. In addition, other internal factors that affect stock prices include the ability of companies to manage existing capital, management capabilities in managing the company's operations, the company's capability to generate profits, marketing prospects of the business and investor rights to funds invested in the company. Whereas external factors that influence stock prices include government announcements, legal announcements, securities announcements, domestic political turmoil, exchange rate fluctuations and various other issues both domestically and abroad.

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The textile and garment industry is a potential industry to be developed because this industry is a labor-intensive industry that absorbs many workers with competitive wage levels. With a population of more than 250 million people, the addition to the development of this industry is easy to implement because of the large number of workers with competitive wages.

The obstacles faced by textile and garment companies in Indonesia are the increasing number of textile and garment items originating from abroad, so domestic-made products must be able to compete with imported products. This difficulty is even greater because these imported products can be sold at low prices, and the purchasing power of people who have not been able to absorb all the products offered by the market. But it turns out that the absorption of domestic products has reached 70% of total production in Indonesia.

Amid competition in the textile and garment market in Indonesia, domestic products have been able to compete with foreign products in foreign markets, so this product has become one of the export products that has become the foundation of the government in national economic growth. The government also supports this industry by providing fiscal incentives, implementing industrial machinery and equipment restructuring programs and improving human resource capabilities.

The company's failure can be seen from financial conditions that are not good and the company's stock price continues to fall or stagnate. This condition if it is not immediately addressed by the company, the company may be able to experience the condition of bankruptcy or financial distress. If the company experiences bankruptcy, the investor will suffer losses because investors will lose the shares that have been invested in the company.

In knowing the company's financial condition, the way that can be done is by analyzing the company's internal performance by analyzing financial statements. This analysis is used to find out whether the company is in healthy condition, *gray area* or bankrupt. One of the most popular methods used is the financial distress using Altman Z-Score method. The Altman Z-Score method uses five financial ratios, namely working capital to total assets (WCTA), retained earnings to total assets (RETA), earnings before interest and tax to total assets (EBITTA), market value to book value of debt (MVEBVD) and sales to total assets (STA).

Derived from the background described above, the purpose of this study was to determine whether the ratio forming Altman Z-Score affected stock prices both simultaneously and partially in textile and garment companies listed on the Indonesia Stock Exchange in 2013-2017.

II. LITERATURE REVIEW

Professor Edward I. Altman applies Multiple Discriminate Analysis (MDA) which is a regression technique of various uncorrelated time series variables by using the cutoff value to determine the group classification criteria for the first time. This model is able to provide an accuracy rate of 90% in one year before financial difficulties. The first model of Altman Z-Score is:

$$Z\text{-Score} = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 1.0X5$$

Where:

$X1$ = Working Capital to Total Assets

$X2$ = Retained Earnings to Total Assets

$X3$ = Earnings Before Interest and Tax to Total Assets

$X4$ = Market Value to Equity to Book Value of Debt

$X5$ = Sales to Total Assets

The classification of corporate bankruptcy using the Altman Z-Score method is if Z <1,81 the company has the potential to go bankrupt, if 1.81 <Z-Score <2.99 then the company is in the condition *gray area* whereas if Z> 2.99, the company is in a healthy condition.

Working Capital to Total Assets is used to measure a company's liquidity against its capitalization. Working capital is defined as the result of a reduction between current assets (CA) and current liabilities (CL). If the results of current liabilities less than current assets, it means that the company is able to pay off the debt of the company and the company can be said to be in a smooth condition. If the company is in a smooth condition, the company will not experience difficulties in finding funding sources in the form of loans used for the company's operational activities. The greater the ratio shows the company's are able to fulfill obligations are better.

Retained Earnings to Total Assets is a profitability ratio that assesses a company's ability to generate profits during a company's operations. This ratio measures the accumulation of profits as long as the company operates. The age of the company affects the ratio because the longer the company operates, the more likely the accumulation of retained earnings will be greater. If the company is unable to generate profits or experience losses continuously, the company is threatened with bankruptcy because the company cannot generate capital to continue the company's activities.

Earnings Before Interest and Tax to Total Assets are used to measure earnings ability, namely the rate of return of assets, and measure how much productivity the use of borrowed funds. This ratio is used to measure the actual productivity of company assets and shows the company's ability to manage total assets to get profits before interest and taxes.

Market Value to Equity to Book Value of Debt shows if the company's are able to fulfill long-term obligations from the value of its own capital (ordinary shares). This ratio is used to measure whether the company's are able to fulfill its obligations with the equity held by the company which is valued at market prices. Equity is measured by combining all types of company shares both ordinary and preferred shares. The company's obligations include long-term debt and short-term debt.

Sales to Total Assets shows the level of efficiency of the overall use of company assets in generating sales and also measures how efficiently these assets have been used to earn income. This ratio is able to show the level of efficiency of the overall use of company assets in generating certain sales volumes. The greater the value of this ratio, the efficiency of the overall use of assets in generating sales is maintained. But the lower this ratio shows the lower the level of corporate income so that it shows the financial condition of companies that are not healthy.

The stock price used is the closing stock price that occurs on the stock market at a certain time determined by the market actor and is determined by the demand and offer of the relevant parties in the capital market.

II.I. Theoretical Framework and Hypothesis Development

Based on the background regarding the development of stock prices and financial distress in textile and garment companies and supporting theories regarding Altman Z-Score and stock prices as described above, the researchers made the research hypothesis as follows:
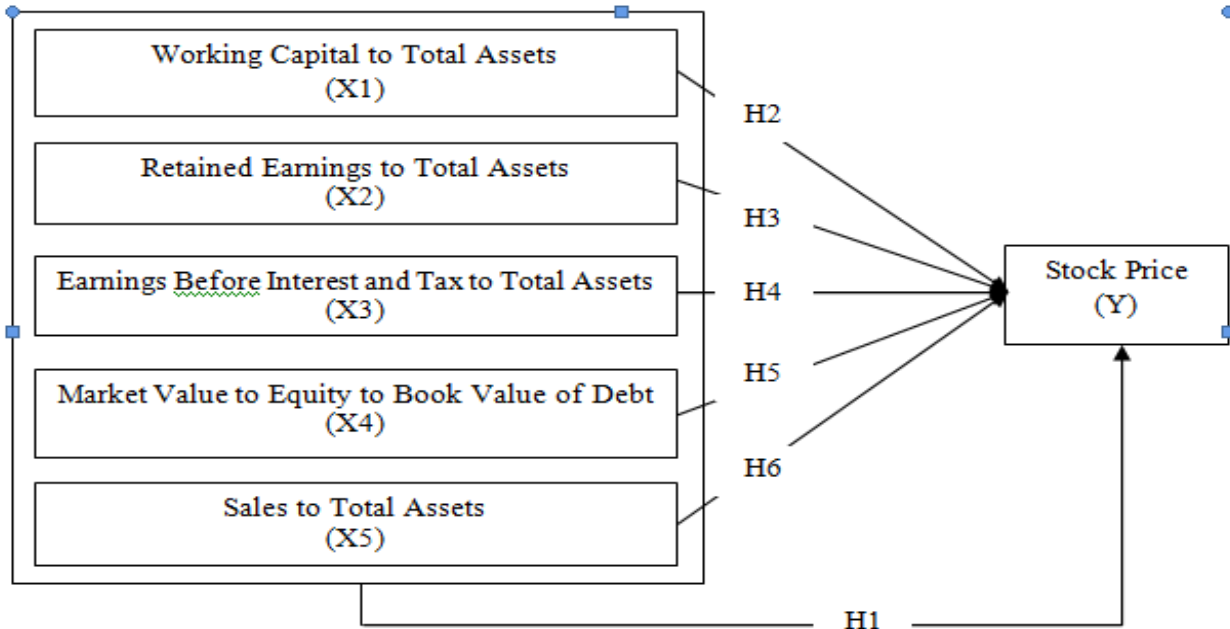
Figure 1: Hypotesis Development

H1: Altman Z-Score affects Stock Price in Textile and Garment Companies period 2013-2018

H2: Working Capital to Total Assets affects Stock Price in Textile and Garment Companies period 2013-2018

H3: Retained Earnings to Total Assets affects Stock Price in Textile and Garment Companies period 2013-2018

H4: Earnings Before Interest and Tax to Total Assets affects Stock Price in Textile and Garment Companies period 2013-2018

H5: Market Value for Equity to Book Value affects Stock Price in Textile and Garment Companies period 2013-2018

H6: Sales to Total Assets affects Stock Price in Textile and Garment Companies period 2013-2018

III. METHOD

In this study, the authors took the object of the companies incorporated in the textile and garment industry listed on the Indonesia Stock Exchange. The sampling method in this study uses *purposive sampling* which is a sampling technique due to certain considerations. The reason for selecting samples using *purposive sampling* is because not all samples have criteria that are in accordance with the authors specify. The sample collection criteria that I set are companies that are always registered in the textile and garment sector, companies that always publish complete and audited financial statements in the observation period, the population in this study are companies that listed in the textile and garment industry in companies registered in Indonesia Stock Exchange 2013-2018 period. Based on predetermined criteria, the sample used in this study amounted to 14 companies.

Table 1. *List of names of textile companies*

No	Kode	Nama perusahaan
1	CNTX	PT Century Textile Industri Tbk
2	ERTX	PT Eratex Djaya Tbk
3	ESTI	PT Ever Shine Textile Industry Tbk
4	HDTX	PT Panasonic Indo Resources Tbk
5	INDR	PT Indo-Rama Synthetics Tbk
6	MYTX	PT Apac Citra Centertex Tbk
7	PBRX	PT Pan Brothers Tbk
8	RICY	PT Ricky Putra Globalindo Tbk
9	STAR	PT Star Petrochem Tbk
10	SRIL	PT Sri Rejeki Isman
11	SSTM	PT Sunson Textile Manufacturer Tbk
12	TRIS	PT Trisula International Tbk
13	UNIT	PT Nusantara Inti Corpora Tbk
14	TFCO	PT Tifico Fiber Indonesia Tbk

Sumber : Sub Sektor tekstil & garment di BEI | Saham Ok

The research method used in this study was to use quantitative methods. The data in this study will be analyzed by regression analysis methods. Data processing is done using Eviews 10. To clarify the variables studied, from what

was formulated in the description above, that the subject matter under study is variable forming Altman Z-Score (X) and stock price (Y).

IV. RESULT AND DISCUSSION

Table 2:*Regression analysis*

Dependent Variable: Y_HARGA_SAHAM
Method: Panel Least Squares
Date: 05/04/19   Time: 14:18
Sample: 2013 2017
Periods included: 5
Cross-sections included: 14
Total panel (balanced) observations: 70

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	301.6346	71.80320	4.200851	0.0001
X1_WCTA	-326.1163	107.7905	-3.025465	0.0036
X2_RETA	280.7696	77.12611	3.640396	0.0005
X3_EBITTA	-307.8591	151.8978	-2.026752	0.0469
X4_MVEBVD	99.76825	23.20984	4.298532	0.0001
X5_STA	134.6120	82.00137	1.641582	0.1056

R-squared	0.358502	Mean dependent var	368.0014	
Adjusted R-squared	0.308385	S.D. dependent var	292.0865	
S.E. of regression	242.9090	Akaike info criterion	13.90507	
Sum squared resid	3776307.	Schwarz criterion	14.09780	
Log likelihood	-480.6774	Hannan-Quinn criter.	13.98162	
F-statistic	7.153304	Durbin-Watson stat	0.764685	
Prob(F-statistic)	0.000023			

$$Y = 301.6346 - 326.1163X_1 + 280.7696X_2 - 307.8591X_3 + 99.76825X_4 + 134.6120X_5 + e$$

Where:

X_1 = working capital to total assets

X_2 = retained earnings to total assets

X_3 = earnings before interest and tax to total assets

X_4 = market value to book value of debt

X_5 = sales to total assets

Y = stock price

The results of multiple regression analysis show that the constant value is 320.1737, which means that if WCTA (X1), RETA (X2), EBITTA (X3), MVEBVD (X4) and STA (X5) have not changed so that they are zero, then the stock price (Y) will increase by 301,644 units. The regression coefficient of WCTA (X1) has a negative sign of 326.1163, which means that this indicates that if there is an increase of one unit from WCTA it will reduce the share price by 326,1163 units. The regression coefficient value of RETA (X2) shows a positive value of 280.7696 which also means that if there is an increase of one unit from RETA, it will also increase the stock price by 280.7696 units. But the regression coefficient value of EBITTA shows a negative result of 307.8591, which shows that if there is an increase of one unit of EBITTA, this turns out to reduce the share price by 307.8591 units. The regression coefficient value of MVEBVD shows a result of 99.76825, this means that every one unit increase from MVEBVD

will also increase the share price by 99.76825 units. The regression coefficient value of STA is 134.6120 which shows that if there is an increase of one unit from the STA, it will increase the stock price by 134.6120 units.

V. DISCUSSION

Based on the results of the above research it was found that the variable forming Altman Z-Score consisting of working capital to total assets (X1), retained earnings to total assets (X2), earnings before interest and tax to total assets (X3), market value to equity to book value of debt (X4) and sales to total assets (X5) together influence stock prices (Y) in textile and garments companies. This is indicated by the magnitude of the f-statistic value of 0.000023 smaller than the significance value that has been applied, namely 0.05. The magnitude of the influence between all the variables forming Altman Z-Score and stock prices is 30.83% while the remaining 69.17% is influenced by other variables not examined in this study. This indicates that the prediction of the company's health condition which in this case is represented by the prediction of the bankruptcy of the Altman Z-Score method will affect the stock price of the textile and garment company. If the condition of the company is not predicted to go bankrupt, investors will not hesitate to invest their funds in the form of shares in the textile and garment company. The condition of a healthy company will give a sense of security and trust investors in the continuity of their funds and investors will benefit from the funds they invest. But conversely, if the company is predicted to experience bankruptcy, it will lead to insecurity and distrust from investors whether the funds they invest will provide returns in accordance with what the investor expects or investors will suffer losses because the stock price drops even the worst with the closing of the company. The results of this study are similar to the results of research conducted by Darmawan A, & Supriyanto J. 2018.

Based on the table of results of multiple regression analysis, it is known that working capital to total assets (X1) affects the stock price (Y) of textile and garment companies (Hussain et al., 2019). This can be seen from the probability value of 0.0036 smaller than the predetermined alpha which is 0.05 in a positive direction. This means that the increasing change in the working capital to total assets will result in increasing stock prices. WCTA means showing the company's ability to generate net working capital from the total assets it has. If the company is able to pay off its obligations on time, then the creditor will give confidence to the company to return to provide loans to the company. If the company is able to meet the sources of funds originating from outside, the company will not experience difficulties when the company will seek sources of funds originating from within, namely the fulfillment of equity originating from shares. Trust given by creditors will increase the trust of the company's shareholders, so that the company's stock price will increase. The results of this study are in proportion to the results of research conducted by Nur Fadli Andriawan 1 and Dantje Salean. (2016), but this study is not similar to the results of research conducted by Ardian A & Khoiruddin M. (2014).

According to the research that has been done, an analysis can be drawn that retained earnings to total assets (X2) has a positive influence on the stock price (Y) of textile and garment companies. This analysis is obtained from the results of a probability value of 0.0005 smaller than the predetermined significance value of 0.05. So that an analysis can be drawn that the greater the change from retained earnings to total assets will result in greater changes in the stock price of textile and garment companies. RETA aims to measure accumulated profits as long as the company operates. If as long as the company is established, the company is able to generate substantial profits, then this profit can be used by company companies as capital to run the company's operations. If the company is able to continue to run the company's operations and get profits, the company will get the trust of investors and are willing to invest in the company's shares. The results of this study are along the lines of the results of research conducted by Darmawan A, & Supriyanto J. 2018.

From the results of the above research shows that before interest and tax to total assets (X3) earnings have an influence on the stock price (Y) of textile and garment companies listed on the Indonesian stock exchange but in a negative direction. This can be seen from the probability value of 0.0469 smaller than the significance value of 0.05. This indicates that the greater the change from earnings before interest and tax to total assets will actually reduce the share price of textile and garment companies. EBITTA is a ratio used to measure productivity from company assets. Based on the results of multiple regression analysis, EBITTA has a negative influence on stock prices. This means that the higher the company's productivity, it turns out it will reduce the company's stock price. This is possible because there are concerns from investors if the company's productivity is too high, then the risk of the company will increase and investors will not get returns in accordance with what investors expect. The results of this study are corresponding to the results of research conducted by Darmawan A, & Supriyanto J. 2018.

According to the results of multiple regression analysis it can be seen that the market value to equity value of debt (X4) has an influence on stock prices in textile and garment companies in Indonesian stock exchange in a positive direction. This can be seen from the f-statistic value of 0.0001 smaller than the predetermined alpha which is 0.05. From the test results above, an analysis can be drawn that the greater the increase in the market equity to book value of debt will lead to the increasing stock prices of textile and garment companies on the Indonesian stock exchange. MVEBVD is the company's ability to fulfill its obligations assessed through the company's market price. The greater the market price of the company, the greater the company's stock price. With the higher market prices of companies, investors will be sure that investors invest in the right company, so that the company's stock price will be higher. The results of this study are similar to the research conducted by Darmawan A, & Supriyanto J. 2018.

Different results were found in the results of multiple regression tests for sales to total assets (X5) on stock prices. The multiple regression results show that there can be no influence between sales to total assets on stock prices in textile and garment companies. This is known from the results of the f-statistic of 0.1056 greater than the predetermined alpha of 0.05. Can be analyzed that changes from sales to total assets will not have an effect on stock prices in textile and garment companies on the Indonesian stock exchange. STA is used to measure management's ability to use assets in generating sales. This STA ratio places more emphasis on the company's operations, whether the company can maintain its assets efficiently so that it gets optimal sales. This does not have a direct effect on stock prices because investors' decisions when investing their funds in textile and garment companies are influenced by macroeconomic factors such as inflation, the exchange rate and interest rates of Bank Indonesia and microeconomic factors that emphasize company profits and company assets. Micro economic factors can give to stock prices (Ozlen S. 2014). While for macroeconomic factors from each variable can give a different influence. (Hunjra AI et al. 2014).

VI. CONCLUSIONS AND SUGGESTIONS

Based on the results of the research and discussion above, the researcher can draw the conclusion that the variable forming Altman Z-Score consists of working capital to total assets, retained earnings to total assets, earnings before interest and tax to total assets, market value of equity to book value of debt and sales to total assets have an influence on stock prices in textile and garment companies with a magnitude of influence of 30.83%. While partially the variable working capital to total assets, retained earnings to total assets and market value of equity to book value of debt has an influence on the stock prices of textile and garment companies in a positive direction. Variable earnings before interest and tax to total assets affect the stock price in a negative direction, while sales to total assets do not affect stock prices in textile and garment companies.

Based on the conclusions described above, the researchers advise the management of textile and garment companies to always improve their financial performance so that companies can attract the trust of creditors and investors. Advice for potential investors is to always pay attention to the financial condition of textile and garment companies if investors will invest in textile and garment companies. While the advice for other researchers is if you will assess any variable that has an influence on stock prices, then other researchers to compare financial distress using other methods besides the Altman Z-Score method.

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