Analysis of Financial Distress Altman Z-Core Method and Springate S-Core Method in PT Krakatau Steel (Persero) Tbk

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ABSTRACT

This study aims to predict, analyze and determine the level of potential bankruptcy and improve its financial performance based on the results of a discriminant analysis using the Altman Z-Score and Springate S-Score methods at PT. Krakatau Steel (Persero) Tbk for the period 2015 - 2019. The research approach used is descriptive. The type of data used is quantitative data with secondary data sources. The data collection techniques used documentation techniques and descriptive analysis. The results show that the calculation of financial distress predictions at PT Krakatau Steel (Persero) Tbk in 2015 - 2019 employed the Z-Core method is a company in the bankrupt category while those employed the S-Core method is also categorized as bankrupt. The research results concluded that from 2015 - 2019 PT Krakatau Steel (Persero) Tbk was included in the bankruptcy company category.

Keywords: Financial Distress, Z-Score, S-Core.

1. INTRODUCTION

The developments that occur in the business world have an impact on the sustainability of a company. The existence of business developments has led to innovations or breakthroughs that have resulted in competition between business actors. Competition between industries or businesses, both similar and overall very competitive, causes companies to have ideas always to be able to produce new products so that the company can survive in the competition and run effectively and efficiently with the hope that it will generate profits so that it can survive or develop in the long term and do not experience liquidation.

The Covid-19 pandemic began at the end of 2019 where all countries felt the pandemic's impact, from developed to developing countries, including Indonesia. This situation's impact resulted in many companies experiencing a decrease in turnover, so that policies were taken to reduce production, reduce employees, and even lay off employees. This is feared will result in companies, both small and large scale will close (go bankrupt) due to financial difficulties (financial distress). Moreover, currently, the rupiah exchange rate against the US dollar

is Rp. 15,000 per 1 USD. Of course, it will be very difficult for industrial business players, especially in the metal (steel) manufacturing sector, which mostly comes from imported raw materials.

Financial statements are the result of an accounting process that can be used as a tool to communicate financial data or company activities to interested parties. In other words, this financial report serves as an information tool that connects the company with interested parties, which shows the company's financial health condition and company performance [1]. In the case of bankruptcy, the securities holders as a whole will receive less than they would have received if there were no bankruptcy fees. As long as companies in debt have a greater chance of bankruptcy than companies that are not in debt, the company will be a less attractive investment. The possibility of bankruptcy will not function if everything is considered permanent [2]. Financial statement analysis reflects the company's strength and future short-term events, and this information can be used by management to improve company performance to predict future results [3].

The method used to determine the symptoms of bankruptcy is to analyze its financial ratios with a specific

model. This is because companies in Indonesia experience many bankruptcy phenomena. Bankruptcy or financial failure of a company can be interpreted as the company's inability to pay its financial obligations at maturity, which causes bankruptcy or liquidity difficulties which may be the beginning of bankruptcy [4]. Bankruptcy analysis can be seen using the company's financial statements. Financial statements are the result of an accounting process that can be used as a tool to communicate financial data or company activities to interested parties [1]. Bankruptcy analysis tools can use the Altman Z-Score, Springate Model, and Zmijewski Model [4].

PT Krakatau Steel (Persero) Tbk is a state-owned company engaged in the steel industry. In its recent development, it has suffered losses. This was conveyed by Managing Director Simply Karim that in addition to the company experiencing consecutive losses of up to 7 (seven) years, it experienced an enormous debt burden as well.

Table 1. List of Total Liabilities, Current Ratio and Return On Assets Year 2015 – 2019

Year	Liability (US Dollar)	Current Ratio (%)	Return On Asset (%)
2015	1.914.115	60,89	(10,35)
2016	2.087.036	81,45	(04,73)
2017	2.262.577	75,02	(02,14)
2018	2.758.419	53,90	(04,68)
2019	2.930.715	27,69	(15,38)

a. Source: Processed researcher data, 2020

The table above shows that over the past 5 (five) years, the amount of liabilities has increased by an average of 11.04% per year. The highest increase was in 2019, amounting to 21.91% from 2018. In comparison, the current ratio for the last 5 (five) years was getting smaller with a decrease of 8.30%. The highest reduction in the current ratio occurred in 2019, down by 26.21% from 2018. Furthermore, ROA shows that in the last 5 (five) years also experienced successive losses. The highest loss was in 2019, where the return rate on total assets was minus 15.38%.

1.1 Financial Distress

In the event of a bankruptcy, the securities holders as a whole will receive less than they should receive if there is no bankruptcy fee. As long as a company in debt has a greater chance of bankruptcy than a company that is not in debt, it will be a less attractive investment. The possibility of bankruptcy is not a function if all other things are considered permanent [2].

Bankruptcy Factors The factors of bankruptcy, include the following:[5]:

1. Internal condition of the company. For example, too much credit given to debtors/customers; inefficient management includes inadequate sales results; errors in setting the selling price; management of debt receivables inadequate; high-cost structures (production, administration, marketing, and financial); levels of investment in fixed assets and inventories that exceed the limit (overinvestment); lack of working capital; imbalances in the capital structure; insured assets or insurance with an amount of liability that is not sufficient to cover possible losses incurred inadequate accounting systems and procedures.

2. External conditions that are general. Political, economic, social, and cultural factors and the level of government interference in which companies differ. Besides that, the inappropriate use of technology will result in losses and ultimately lead to the company's bankruptcy. Specific external factors are those directly related to the company, including customer factors (changes in tastes or consumer saturation that are not detected by the company resulting in declining sales and ultimately disadvantage to the company), suppliers, and competitor factors.

1.2 Financial Distress Analysis Method

1. Analysis of the Altman Z-Score Method

In the first Altman method, Altman researched various manufacturing companies in the United States that sold their shares on the stock exchange. The first Z-Score formula is more suitable to predict the business continuity of manufacturing companies that go public [6]. The Altman I formula is known as the Z-Score as follows:

$$Z = 1{,}2X1 + 1{,}4X2 + 3{,}3X3 + 0{,}6X4 + 1{,}0X5 \quad (1)$$

Where :

X1 = Working Capital of Total Assets

X2 = Retained Earnings towards Total Assets

X3 = Profit Before Interest and Tax on Total Assets

X4 = Book Value of Equity to Total Debt Book Value

X5 = Sales of Total Assets

The criteria used to predict bankruptcy of companies with this model are [7]:

If the Z index value <1.81, then the company is predicted to go bankrupt (has the potential for bankruptcy)

If the index value is 1.81 <Z <2.99, it is included in the gray area (the company is predicted to experience financial problems and can go bankrupt).

If the Z index value> 2.99, the company is predicted not bankrupt (the company is predicted to be healthy)

2. Analysis of the Springate Method

According to reference [8], Springate made a financial distress prediction model in 1978. In its manufacture, Springate used the same method as Altman, Multiple Discriminant Analysis (MDA). As in reference [9]) and [10], the model is as follows:

$$S = 1,03A + 3,07B + 0,66C + 0,4D \qquad (2)$$

Where :

A = Working Capital against Total Assets

B = Profit Before Interest and Tax on Total Assets

C = Profit Before Tax of Current Liabilities

D = Sales of Total Assets

The criteria used to predict bankruptcy of companies with this model are:

If the index value S <0.862, the company is predicted to go bankrupt (has the potential for bankruptcy)

If the index value S> 0.862, the company is predicted not to go bankrupt (the company is predicted to be healthy)

2. METHODS

The type of data used in this research is quantitative data. Quantitative data is data in numbers or qualitative data framed / scoring [11]. Whereas the type of data used in this study, according to how to obtain it, is secondary data, namely audited financial reports for the 2015-2019 period obtained from the Indonesia Stock Exchange website and PT Krakatau Steel (Persero) Tbk. Website, previous studies related to and supporting research, and the books that support this research. The population and sample are audited financial statements of PT Krakatau Steel (Persero) Tbk from 2015-2019.

The data analysis technique is done by describing the data so that it is easier to understand and compare the calculation of bankruptcy predictions using the Altman Z-Core model and the Springate S-Core model at PT Krakatau Steel (Persero) Tbk for the 2015-2019 period.

3. RESULTS AND DISCUSSION

Table 2 Results of Calculation of Financial Distress Prediction of Altman Z-Core Method and Springate S-Core Method at PT Krakatau Steel (Persero) Tbk in 2015 – 2019

Table 2. Financial Distress Prediction of Altman Z-Core Method and Springate S-Core

Year	Altman Z-Core		Springate S-Core	
	Index	*Category*	*Index*	*Category*
2015	0,38	Bankrupt	(0,319)	Bankrupt
2016	0,57	Bankrupt	(0,023)	Bankrupt
2017	0,53	Bankrupt	0,056	Bankrupt
2018	(0,24)	Bankrupt	(0,151)	Bankrupt
2019	(1,59)	Bankrupt	(0,952)	Bankrupt

The above table results show that for 5 (five) consecutive years, the company is in financial trouble. This is predicted both by using the Altman method formula and the Springate method. Because for the Altman Z-Core method, the company's category is predicted to go bankrupt if the Z index results <1.81, whereas PT Krakatau Steel (Persero) from 2015 to 2019 shows the index no more than 1.81. The most crucial thing is that in 2018 and 2019, it showed a minus result, meaning that the company is really in a very financial condition. Likewise, predicted by using the Springate S-Core method, a company's category is predicted to go bankrupt if the S index <0.862, whereas PT Krakatau Steel (Persero) from 2015 to 2019 shows that the index does not exceed 0.862. Furthermore, what really concerns the company is that from 2015 to 2019, the company is in a very worrying condition and arguably bankrupt. Following what has been conveyed by the President Director of PT Krakatau Steel (Persero) Tbk, Simply Karim, this company is at a loss and a large debt.

4. CONCLUSIONS

From the above statement, it can be concluded that the calculation to predict financial distress at PT Krakatau Steel (Persero) Tbk in 2015 - 2019 for 5 (five) years, the results use the Altman Z-Core method where the result is that the company is in the bankrupt category as well as using the Springate S method. -Core results are the same. The company entered into the category of bankruptcy. So it is concluded that from 2015 - 2019 PT Krakatau Steel (Persero) Tbk was included in a bankrupt company (bankruptcy).

For this reason, the company must completely change all policies so far, such as selling and increasing liquidity, and reducing debt so that the company can be saved in addition to other financial factors.

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