FINANCIAL DISTRESS ANALYSIS WITH ALTMAN Z-SCORE APPROACH AND ZMIJEWSKI X-SCORE ON SHIPPING SERVICE COMPANY

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Abstract: The purpose of this study is to analyze the financial distress condition of such service company by employing the method of Altman and Zmijewski as well as comparing the analysis result using both methods. This is a descriptive quantitative study with the sampling technique of purposive sampling. The number of samples of this study is 4 shipping service companies listed at Indonesian Stock Exchange since 2010, such as PT. SAMIN, PT. BLT, PT. MitrabahteraSegaraSejatiTbk (PT. MBSS) dan PT. Wintermar Offshore Marine Tbk (PT. WOM). The data are analyzed using Altman and Zmijewski method. The result indicates that out of four service companies: PT. MBSS is the most financially stable company, while PT. BLT is the company with the worst condition of financial distress condition. The use of both methods also produces results which are not different; what is different is only in terms of the assessment standards. It is advisable to predict financial distress in shipping companies using more than one method for every method employs different standard just to confirm the result.

Keywords: Shipping Company, financial distress, Altman Z Score, Zmijewski



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Correspondention Author: Sahala Manalu, Faculty of Economics and Business Universitas Ma Chung Malang DOI: http://dx.doi.org/ 10.21776/ub.jam.2017.015. 04.15 The development of importexport trade in the world is increasing day by day so that with the economic progress and the changing times also affect the world market. In today's trade (International) countries, exporters and importers are trying to spur the growth of international trade to the level that has been expected by using export transportation. In the export-import activities of the countries that carry out such activities have many reasons for doing export-import activities.

The exporting country is not a country that has more production than other countries and the results are not consumed by the people of the country, but the exporting country aims to gain foreign exchange so that the country can increase its economic growth. Meanwhile, import activities are carried out by countries requiring goods to meet the needs of their people.

Based on the general condition in Indonesia, export transportation can be done by land, sea, and air. The length of time required for delivery of goods through sea transport is longer than air transport. Normal sea transportation uses Bill of Lading documents while air transport uses Airway Bill documents. The shipping company has its own procedures and high working hours. These service companies not only focus on delivery services, but also

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related to other things, such as port state control, ISPS Code, ships and international shipping, insurance, and many others. All that is related to the financial statements that are accounted for every year.

Since the beginning of interstate commerce, the role of sea transport has become very vital. In the era of globalization, the role of shipping is not only increasingly important in international business, but also raises new practices, procedures, documentation, and procedures. The last few years have been popping up news pages that preach on import-export activities, one of them regarding this shipping company. One of the most viral news stories is about a company that sells some of its asset units to cover the debt, but there is other news informing that there are companies that share dividends to shareholders with huge amounts. External factors that result in a company experiencing financial distress. The situation has made the company difficulties in financial problems that can be interpreted as the inability of the company to pay its financial obligations. This situation can trigger bankruptcy for a company. This proves that the financial circumstances for this shipping company need to be highlighted and researched. Some other similar companies may also experience the same thing and result in financial distress that leads to bankruptcy. The high working hours make more and more shipping and the greater the operational cost incurred. However, the company is very difficult to increase the cost of this shipping service. On the other hand, this sea transport has many external factors that can cause losses and can happen anytime without predictable before.

The risk of bankruptcy for the company can be seen and measured through the financial statements by performing a ratio analysis to the financial statements issued by the company concerned. The analysis is known as Z-score analysis. The Z-Score analysis itself is a predictor of bankruptcy made by Dr. Edward I. Altman in 1968. This method uses certain ratios in predicting the risk of bankruptcy of a company. This method has also been revised in 1983, by altering some of the variables in the formula in the Z-Score analysis (Arifin, 2007).

An earlier empirical study of bankruptcy predictions with Z-score analysis was conducted by Marcelinda et al. (2014), indicating that the percentage accuracy of the Altman Z-Score model can be reviewed with an auditor's opinion that produces a predictive accuracy of 27.96%. This means that the prediction model of bankruptcy Altman Z-Score has a low level of accuracy. Rahayu, et al. (2016), concludes that the financial performance analyzed by Altman Z-Score, Springate and Zmijewski methods in Telecommunication Company for the period 2012-2014 is classified under financial distress. Financial distress prediction result using Altman Z-Score method there are two companies that experienced financial distress during three years period 2012-2014 iePT. Bakrie Telecom Tbk and PT. Smartfren Tbk. The result of financial distress prediction using Springate method there is four companies that experience financial distress namely PT. Bakrie Telecom Tbk, PT. XL AxiataTbk, PT. Smartfren Tbk, and PT. IndosatTbk in 2012-2014. Financial distress prediction result using Zmijewski method there are two companies that experience financial distress namely PT. Bakrie Telecom Tbk and PT. SmartfrenTbk. Many researchers use Altman Z Score and Zmijewski methods to analyze financial distress in both manufacturing and non-manufacturing companies. The results of his research also varied and there was an inconsistency between each other. Many use the Altman Z Score method like Age (2010), Marcelinda (2014) and many others. However, the results of the study conducted by Gunawan, et al (2017) showed that the highest accuracy of the lowest distress prediction accuracy is Zmijewski model, Grover model, and Altman model. This means that the Altman model is not a predictor of financial distress that has the highest level of accuracy among the three independent variables studied.

Based on the phenomenon and the results of previous research, this study re-examined the Financial Distress Analysis with Altman Z-Score and Zmijewski approach, the present research with the previous research is the object of research on intermodal freight transportation service company by sea iePT. Samudera Indonesia Tbk, PT.

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BerlianLaju Tanker, PT. Mitrabahtera Segara Sejati Tbk and PT. Wintermar Offshore Marine Tbk. besides that in this research do re-test result from Gunawan research which stated that Altman Z Score formula do not have high accuracy level to financial distress condition, and compare the result of Altman Z Score method with Zmijewski method on the four companies. This research was conducted to examine the four companies experiencing financial distress from 2010 to 2016 with the aim to know the financial condition of the period of the year and also use both methods to determine the results of financial distress research on the accuracy of Altman method in calculating the condition of financial stress or the result is no different from Zmijewski's method on the financial statements of all four shipping companies in 2010-2016.

It can be concluded and drawn the proposition of the most healthy companies and not experiencing financial distress among the four companies studied in this study and the analytical methods used in analyzing financial distress. PT. Samudera Indonesia is the healthiest company among the three other companies. The result of the analysis shows that the calculation result using Altman Z-Score and Zmijewski X-Score method is not much different.

METHOD

This research is a descriptive quantitative research type. Descriptive research is a study conducted to determine the value of each variable, either one variable or more (independent) without making a comparison, or connect with other variables. The object of this research is intermodal freight transporting company imported by sea which listed on Indonesia Stock Exchange from 2010 until 2016 with research sample that is PT. Samudera Indonesia, PT. BerlianLaju Tanker Tbk, PT. MitrabahteraSegaraSejatiTbk and PT. Wintermar Offshore Marine Tbk. The data used in this study is the financial statements of intermodal freight transporting companies imported by sea. Variables used in this study are variables used to know financial distress with Z-Score analysis approach called Variable 1 and operational variables of Variable 2 known as Zmijewski analysis.

RESULTS

Altman Z Score analysis model is a tool to find out how the company's financial performance.

PT. WOM in 2010 and in 2013 at table 1 in good health. This shows that the company does not experience financial distress on its financial performance. This is indicated by a value of Z greater than 2.6. Z score in 2011, 2012, 2014, 2015 and 2016, explains that the financial performance of PT. WOM has the possibility of experiencing financial distress and possibly not. The financial performance of PT. MBSS in 2010 to 2016, explained that the company's financial condition is in good health. This is shown by the high value of Z score. Comparison of each capital ratio, profit, share value, and sales are all positive. PT. BLT shows financial performance experiencing financial distress from 2010 until 2016, excePT. in 2011. This shows that the financial performance performance performance performance performance performance performance performance performance financial distress from 2010 until 2016, excePT. in 2011. This shows that the financial performance performance

 Table 1
 Altman Z Score Model Analysis on Four Companies in 2010 - 2016

Company's Name	Z-Score									
	2010	2011	2012	2013	2014	2015	2016			
PT. WOM	3.454706	1.62931	2.337527	3.424897	1.353842	1.651594	1.526955			
PT. MBSS	2.900771	3.10061	3.612677	5.493323	5.938219	5.304362	4.429383			
PT. BLT	0.88479	2.393643	-9.55954	-2.88293	-8.03877	-3.16234	-6.77161			
PT. SAMIN	1.685822	1.619929	1.570209	1.75239	2.24381	2.487527	2.393643			
Z>2,6 :	Healthy Company									
1,1 < Z > 2,6 :	Possibility of experiencing financial distress									
Z<1,1 :	Experiencing Financial Distress at high risk									

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Company's	X-Score									
Name	2010	2011	2012	2013	2014	2015	2016			
PT. WOM	-1,8316	-1,9751	-1,9083	-1,9485	-1,8738	-1,7550	-1,6406			
PT. MBSS	-2,2960	-2,4222	-2,5676	-3,0186	-2,9979	-2,6640	-2,3999			
PT. BLT	0,26612	9,853861	10,6125	8,32538	11,3910	-9.2832	-0,6002			
PT. SAMIN	-1,1003	-0,9278	-0,9316	-0,9878	-1,4180	-1,5553	-1,6924			
X > 0 = Experiencin	g Financial D	oistress								
X < 0 = Not experie	ncing financi	al distress								

 Table 2
 Analysis of Zmijewski Model of Company Sample Year 2010–2016

formance of PT. BLT in a state that can experience bankruptcy conditions. This condition is made possible by very severe liquidity difficulties, so the company is unable to perform its operations properly.

PT. WOM with Zmijewski (X-Score) analysis, in 2010 until 2016 the company is not experiencing financial distress. This is because the X score is smaller than zero. Likewise with PT. MBSS is worth less than zero, so it can be interpreted that the financial performance of PT. MBSS is in good shape and has no financial distress. PT. SAMIN in 2010 until 2016 also shows that the calculation of X score is smaller than zero, so it can be interpreted that PT. SAMIN has a healthy financial condition. The smaller the X-Score value of a company, the smaller the possibility of the company experiencing failure or bankruptcy. Determination of the upper and lower limits of the interval range cannot be well defined, so that the companies that are categorized as bad may not necessarily fail or go bankrupt. The health of a company can be described from the most extreme healthy point to the most extreme unhealthy point. Financial difficulties in the short term are temporary and not so severe, but the difficulty if not addressed quickly, then it can develop into a difficulty that is not solvable so that it can cause the debt will be greater than the assets or bankruptcy. If the company has reached the point where the company's finances are not solvable, then there are only two options for the company ie the company must be liquidated or reorganized.

PT. BLT in 2010 until 2014, X Score value is greater than zero. This indicates that in that year

PT. BLT experienced financial distress. PT. BLT in 2010 to 2014 has very high financial leverage data. This condition indicates that the debt of PT. BLT is very high. it can be seen from the comparison between the value of liabilities with total assets. However, from 2015 to 2016 the X score is positively altered by leading to values smaller than zero. Therefore, from 2015 to 2016 PT. BLT is able to suppress the number of its liabilities, so its leverage ratio has decreased.

DISCUSSION

Based on the analysis that has been done, using both Altman Z Score and Zmijewski (X-Score) analysis, some of the results regarding the average financial condition of the sample company resulted in an analysis of the same meanings. PT. WOM uses both Z score and X score analysis, the results show both the financial performance of the company in a healthy state in 2010 and 2013. However, in 2011 to 2012 and 2014 until 2016 showed the condition of vulnerability or have a risk bankrupt, while for PT. MBSS results show both the X score and Z score, the results show both health conditions and no financial distress.

Based on the above analysis, it can be explained that the best financial performance among the four companies, either by using the Z score method and with X score is PT. MBSS. This condition indicates the possibility of the management does not have financial difficulties so that companies can be categorized as not experiencing financial distress. PT. MBSS may also have good performance, because working capital to total assets tends to increase, so

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the company in a state of liquid if the company has a smaller current debt than current assets. Companies with high liquidity ratios indicate the company's high ability to meet its short-term debt. Associated with the level of profitability of both companies is seen from the amount of income before taxes and interest on total assets showed an increase each year, so the company in a state of liquidity. The level of activity of both companies can be seen from the amount of sales value to the total assets of the company showing an increase, so as to create good enough sales for investment affairs.

Companies that have bankruPT. prone conditions such as PT. SAMIN and PT. WOM due to decreased working capital, while current liabilities show an increase. The cause of low Z-Score value can be seen from the working capital obtained, between the number of current assets with "current debt" does not occur balance, it causes the working capital obtained is negative. The amount of working capital owned by this company is the concern of short-term creditors, since this figure shows the number of assets spent on long-term sources of funds not making repayments in the short term, the less the value of working capital, the smaller shortterm creditor protection, and will also make even less certainty that short-term debt will be repaid on time. A low liquidity ratio indicates the company's limited ability to meet its short-term debt, so the company may find it difficult to meet its short-term debt. While unhealthy companies such as PT. BLTs that have poor financial performance and have a significant risk of bankruptcy. Because the amount of capital and debt are not balanced, so the company suffered losses, in addition to the income obtained is also not balanced with the costs to be incurred, so it can affect the level of liquidity.

Associated with the prepositions already mentioned, the proposition is not in accordance with the results of the existing analysis, because it can be seen that the company is said to be healthy not PT. SAMIN but PT. MBSS. Although the company is not as big as PT. SAMIN but in managing finances can be said well, so it can generate high profits. Furthermore, it has been proven that the two methods used, do not yield far different results and only show the different standard of appraisal. Altman method has a more detailed assessment by giving three criteria while the Zmijewski method only gives two criteria that can not be categorized in detail.

CONCLUSION AND RECOMMENDATION Conclusion

PT. MBSS is a company with the best financial performance condition compared to PT. WOM, PT. SAMIN, and PT. BLT uses both Altman (Z score) and Zmijewski (X-Score) analysis. The company can be said to be healthy because the working capital of the total assets of the company tends to increase, the level of profitability of the company has increased and the level of activity also shows improvement. Altman Z-Score and Zmijewski methods give the same result, but the difference is the level of condition and standard determining the financial condition only.

Recommendation

The process of knowing and analyzing the bankruptcy condition of the firm is suggested to the next researcher to not use one type of analysis. The use of several analytical models can be used as a comparison material to make the analysis really accurate because each model of analysis has different weaknesses and advantages and assessment standards. For investors in making investment decisions, investors must be really selective. Companies with low Z-Score and X-score scores and do not show improved performance should be avoided, as the company's potential for bankruptcy is judged to be quite high. For shipping companies with Z-Score and X-Score values indicating that the company is experiencing bankruptcy threats, then the management company must immediately take corrective action or prevention if it is known the financial health of the company declining and showing the symptoms of business failure or bankruptcy, it is for the company should pay attention to macro conditions in Indonesia.

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