

ANALYSIS OF POTENTIAL BANKRUPTCIES USING THE ALTMAN Z-SCORE AND SPRINGATE SCORE METHODS IN THE TEXTILE AND GARMENT SUB-SECTOR MANUFACTURING COMPANIES LISTED ON THE INDONESIAN STOCK EXCHANGE (IDX) FOR THE 2014-2019 PERIOD

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Abstract: This study aims to determine whether or not there are differences in predictions bankruptcy between the Altman Z-Score and the Springate Score methods in textile and garment manufacturing companies listed on the stock Exchange Indonesia (IDX) for the 2014-2019 period. In this study, the independent variable (X) is the Altman Z-Score and Springate Score, while the dependent variable (Y) is bankruptcy. Bankruptcy is a condition that occurs when an organization is no longer able to pay off its debts. This situation does not just appear in a company, but can be seen from the condition of its financial statements. Financial distress is the initial gateway to bankruptcy. Financial distress is a stage of decline in financial conditions marked by a decrease in profit or even profit negative. This study uses secondary data in the form of financial reports annual of companies in the textile and garment sub sector. This study uses purposive sampling technique in determining the sample, so that five companies can be sampled. The test used in this study is the independent sample t-test with SPSS 21. The final result of this study is that there is no difference in the result of predictions bankruptcy between the Altman Z-Score and the Springate Score methods. This happens because both methods have a high degree of accuracy.

Keywords: Bankruptcy, Altman Z-Score, Springate Score.

INTRODUCTION

Global economic growth is of course very closely related to population growth and technological advances today which have resulted in thousands of industries competing to improve the quality of resources in all fields with the aim of being able to meet increasingly diverse demands and to expand the market coverage of the products it offers.

Today the world economy poses a very big problem, especially for the national economy, especially in the business world; the dynamically moving economic conditions in Indonesia have a big impact on companies. The manufacturing industry sector such as the textile industry has a significant role in the Indonesian economy, seen from two sides, namely its role in manufacturing exports and its ability to generate foreign exchange reserves, but currently several industrial sectors have experienced a decline, including the textile and garment sub-sector due to the increase in goods and services. Imports, rising prices of raw materials, as well as the trade war between the United States and China, the impact of which has an impact on the economy in Indonesia.

A company is established with the aim of getting a large profit or margin, to achieve this, the company must carry out activities to create or develop products and

services that will be marketed to the wider community. To meet consumer satisfaction, efforts are needed from the company providing the product or service by creating a quality product or service, of course, it cannot be separated from the actors and other resources that support and complement each other for the realization of the vision and mission of a company. The role of leaders or managers and stakeholders in controlling a company is very crucial, because it will have an impact on the success of a company to maintain its existence in business competition, but in reality not a few companies end up in bankruptcy due to poor leaders and stakeholders in managing the company.

Bankruptcy is a problem that can occur if the company is no longer able to pay its obligations when they are due or in other words the company has difficulty in liquidity which may be the initial cause of bankruptcy (Rudianto, 2013). While in Article 1 point 1 of Law no. 37 of 2004, "Bankruptcy is a general confiscation of all assets of a bankrupt debtor whose management and settlement is carried out by the curator under the supervision of the Supervisory Judge as regulated in the Act". Bankruptcy does not occur suddenly but can be seen clearly in the financial statements of previous years (Prihadi, 2019).

Financial distress or financial distress is the initial gateway to bankruptcy. Financial distress is the process of decreasing the company's financial condition that arose before the bankruptcy. Financial difficulties occur because the company is unable to pay its debts, especially short-term debt which is classified as current debt and debt in the type of solvency (Plat & Plat in Fahmi 2015).

There are indicators that show whether a company is experiencing financial distress, there are several characteristics, namely, the occurrence of asset turnover (TATO), decreased sales, lower profits and profitability, reduced working capital and higher debt (Sumbarmanyam in Christiana 2018). Financial distress that lasts a long time will allow the company to go bankrupt.

Reporting from the online news site www.cnbcindonesia, the factors that caused textile companies to weaken were due to the increasing number of imported products from China entering Indonesia accompanied by weak safeguard policies imposed by the government to protect domestic industry players. It was recorded that in the first semester of 2019, 50% of the 18 textiles and garment companies experienced a decrease in income. Then there were two companies that suffered losses and there were six companies whose net profit was eroded, especially from the upstream sector of the textile industry which produces yarn and fabric. Quoted from tempo.co, the Indonesian Textile Association (API) Sudrajat said that there were nine textile companies that were forced to close due to soaring levels of imports. With this high number of imports, textile companies find it difficult to compete because the prices of imported goods are cheaper.

The phenomenon occurs at PT. Argo Pantes Tbk in the third quarter of 2014 recorded cost of goods sold of Rp. 1.06 trillion, higher than the previous year of 9.24%. Around 54.2% of the total cost of goods came from raw materials; equivalent to Rp. 578.5 B. Revenue was eroded by expenses so that ARGO scored a net loss of Rp. 1477.48 B 72.38% higher than the previous year. And finally the ARGO Company had to decide to temporarily close one of its factories due to losses over the last five years. According to the Director of Argo Pantes Tbk (ARGO), Purnadi, one of the reasons the company

closed its factory was because the raw material for cotton and production costs were higher than the selling price of the product (bisnis.com).

Losses were also felt by PT. Polychem Indonesia Tbk (ADMG) in 2015 in January-September which decreased by US\$ 27.1% to US\$ 11.02 million while in the previous year US\$ 15.11 million This loss was triggered by a decrease in operating income of 33.2% to US\$ 239.25 million from US\$ 258.43 million as of September 2014. The company's still deteriorating financial condition also had a negative impact on ADMG's share price. The shares of this chemical producer issuer are less liquid during trading on the Indonesia Stock Exchange (IDX) this year (pasardana.id).

Reporting from the online site kontan.id, in 2019 textile companies that produce polyester and mono ethylene glycol and petromia (ADMG) really felt the impact of the trade war that occurred between the United States and China which put pressure on textile and garment industry players. Tjong as secretary of ADMG said that due to the trade war between the United States and China, his company reduced production capacity to reduce losses. This is because the trade war has made the price of ethylene raw material too far from the selling price of MEG. Moreover, the regulation of the Minister of Trade has further exacerbated the impact of the trade war on textile companies in the country. The Minister of Trade Regulation Number 64 of 2017 concerning the provisions on the Import of Textiles and Products allows general importers to import goods so that many textile products are attacking Indonesia, especially with the existence of a Bonded Logistics Center so that sales have decreased considerably.

PT. Tifico Fiber Indonesia (TFCO) in 2018 which suffered a loss of US\$ 494 thousand. In the first quarter of this year, it posted sales of US\$ 50.26 million, down 16 percent compared to the same period in the previous year of US\$ 59.82 million. The decline in sales was followed by a decrease in cost of goods by 12% year on year (yoy) to US\$ 49.45 million in the first quarter of 2019 (okezone.com)".

Reporting from kontan.co.id in its financial statements for the third quarter of 2016, POLY recorded a 30.3% decline in revenue from the export market from the same quarter in 2015 from US\$ 56 million to US\$ 39 million. According to the President Director of PT. Asian Pacific Fibers Tbk (POLY) explained that the decline in export sales, according to POLY, was caused by too large imports of textile products and China in particular being able to sell at lower prices, causing the company's competitiveness to decline.

From these data, it can be seen from the causes of the bankruptcy of companies that there is a continuous decline in profits, as well as a decline in sales and global economic instability. In facing the risk of bankruptcy, the company must conduct an analysis in order to find out the potential for bankruptcy that will occur in the future, so that the company can find the right strategy to prevent bankruptcy. One way that can be done is by analyzing the company's financial statements.

If an organization goes bankrupt, the steps that need to be taken are to analyze the financial statements in order to find out the financial condition that occurs in the company. Analysis of financial statements plays an important role for an organization, because by analyzing financial statements, the company can find out the benefits and know the risks faced by the company, if the company sees signs of bankruptcy, it will be resolved immediately so that there will be no bankruptcy (Chairunisa: 2017).

There are various models or techniques of bankruptcy analysis that have been found, but the models or techniques of bankruptcy analysis that are widely used from previous studies are the analysis of the Altman method and the Springate method. The reason is that both methods are widely used, namely because the two analytical models are relatively easy to use and also have a fairly high level of accuracy in predicting the potential for bankruptcy of a company.

Altman is more widely used by researchers because it proves its reliability as a tool for analyzing bankruptcy without regard to firm size. The way the Altman Z-Score works is that even though the company is declared in the healthy category for a period, if the Altman Z-Score value has decreased sharply, the company must be careful. The Altman Z-Score analysis was first introduced by Edward I. Altman which was developed to determine the tendency of a bank's bankruptcy company and can also be used as a measure of overall financial performance. In this study, Edward I Altman found five financial ratios that can be combined in a mathematical formula that is accurate in predicting corporate bankruptcy. For an organization Altman is used to see the extent of financial performance in a period. If Altman's value drops sharply, the company will take steps to prevent liquidation. If the Z-Score continues to rise and the company is declared healthy, it will attract investors to invest so that the Z-Score is useful for investors to invest, continue investing or withdraw investment in a company (Iladina, Mardani & Khoirul: 2018). Supported by research conducted by Pratiwi, Amboningtyas and Fathoni (2019) on cosmetic companies listed on IDX in 2013-2017 which states that from the comparison results of the Altman Z-Score model and the Springate model, both models show the same percentage accuracy rate of 80. %. Furthermore, according to research by Pangkey, Saerang & Maramis (2018) on bankrupt companies that have gone public on the Indonesia Stock Exchange (IDX) shows that the Altman Z-Score method is more consistently accurate than the Zmijewski method.

Then the next model is the Springate Score created by Gordon L.V Springate (1978) who has conducted his research and produced a bankruptcy prediction model that was made following the Altman procedure. The Springate model uses 4 financial ratios to predict the potential for financial difficulties in a company. The Springate model is used to predict financial distress. Supported by research conducted by Mandalurang, Rate & Untu (2019) in their research on the retail trade industry for the 2014-2018 period stated that the springate score analysis has a higher level of accuracy than the Altman Z-Score after being calculated with the average standard deviation. This is supported by the Springate analysis method which focuses more on the value of a company's current debt. Then further research was carried out by Sari, EWP (2015), in his research conducted on transportation companies listed on the Indonesia Stock Exchange (IDX) stating that an accurate prediction model for transportation service companies in Indonesia is the Springate model, because the Springate model has a high level of accuracy. Best after Altman Z-Score and has the lowest error rate.

METHODS

In this research, the method used is descriptive and comparative approach. The purpose of conducting descriptive research is to know and be able to analyze bankruptcy predictions using the Altman Z-Score and Springate Score methods in textile and

garment sub-sector manufacturing companies. The application of comparative research in this study aims to determine the difference between the Altman and Springate prediction models. Verificative research aims to provide answers to the formulation of problems related to the comparison of bankruptcy predictions using the Altman Z-Score and Springate Score models. This research uses a descriptive verification method with data analysis techniques using SPSS.21.

RESULT AND DISCUSSION

Descriptive Research Results

From the existing data after being processed using SPSS 21, the descriptive statistical results are as follows:

Table.1 Descriptive Statistics
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ALTMAN	30	-16.93	8.04	-2.7248	7.60016
SPRINGATE	30	-3.83	.82	-.7751	1.52811
Valid N (list wise)	30				

Source: SPSS 21

Based on the results of descriptive statistical calculations, the minimum value on the Altman Z-Score is owned by PT. Asia Pacific Fibers Tbk in 2016 amounted to -16.93. In 2016 POLY decreased in 4 ratios, namely the ratio of working capital to total assets, retained earnings to total assets, book value of equity to book value and sales to total assets. This happened because in 2016 the company experienced a decrease in revenue compared to the previous year, namely 2015; this year was also accompanied by a decrease in company sales caused by the fall in retail consumption and due to fairly tight price competition with imported goods which were much cheaper in price.

Then the maximum value on the Altman Z-score is owned by PT. Tifico Fiber Indonesia Tbk in 2016 amounted to 8.04. In 2016 TFCO increased in 3 ratios compared to the previous year, namely the ratio of working capital to total assets, retained earnings to total assets and book value of equity to book value. This happened because the company was able to make a comprehensive profit for the current year which was greater than the previous year which suffered a loss, the production figure also increased by 5.6% compared to the previous year. In addition, sales in 2016 also experienced a significant increase. One of the reasons the company experienced an increase in various aspects was because the company replaced an electric chiller machine with high power with a steam absorption chiller so as to reduce production operational costs.

The overall calculated average value of the Altman Z-Score is -2.7248 while the standard deviation value or the spread of a group of data to the average is 7.60016,

which means the greater the standard deviation value of a data, the more spread out the sample data and varies.

Then based on the results of descriptive statistical calculations the minimum value on the Springate Score is owned by PT. Asia Pacific Fibers Tbk in 2016 amounted to -3.83. In 2016 POLY decreased in 2 ratios, namely working capital to total assets and sales to total assets. This happened because in 2016 the price of raw materials used by production facilities increased following the movement of crude oil prices which resulted in the company experiencing a decrease in revenue and a decrease in sales due to a decrease in volume and selling price.

The maximum value on the Springate Score is owned by PT. Polychem Indonesia, Tbk in 2018 was 0.82. In 2018 ADMG experienced an increase in 3 ratios, namely working capital to total assets, earnings before interest and tax to total assets and sales to total assets. This is indicated by the company's improved performance by optimizing the operation of the Merak factory which is able to increase the efficiency of the use of ethylene raw materials and to produce more competitive products so as to increase the sales value for ethylene glycol products and their derivatives.

The overall arithmetic mean value of the Springate Score is -0.7751 while the standard deviation value or the spread of a group of data to the average is 1.52811, which means the greater the standard deviation value of a data, the more spread and varied the sample data.

Discussion of Descriptive Research Results

Based on the results of the analysis on the Altman Z-Score method which has the highest average value, namely PT. Tifico Fiber Indonesia Tbk (TFCO) which has an average Altman Z-Score of 6.085. In 5 years of research, the company is predicted not to go bankrupt because it is in the category of a healthy company. Based on the calculation of Altman Z-Score, the highest score was achieved by TFCO in 2016. One of the factors that caused the company to be predicted to be in the healthy category was because the company replaced an electric chiller with high electricity power with a steam absorption chiller that uses steam to drive its engine. This steam absorption chiller can improve energy efficiency by reducing energy consumption which can automatically lower the company's operating costs. When viewed from the calculation indicator, namely the ratio of Working capital to total assets, it shows that the company is quite good at fulfilling its short-term obligations. Because companies can fund capital expenditures and manage maturing loans by managing cash adequacy and availability of funding through a number of guaranteed credit facilities. Then when viewed from the ratio of retained earnings to total assets, it shows that the company's ability to generate profits is not good because retained earnings are negative. This year the company has not been able to distribute dividends due to insufficient reserves. Then, if you look at the ratio of earnings before interest and tax to total assets, it shows this year the company has not been able to distribute dividends due to insufficient reserves. Then, if we look at the ratio of earnings before interest and tax to total assets, it shows that the rate of return on assets is improving because this year it has penetrated a positive value. Then when viewed from the ratio of market value of equity to total liabilities, it shows that the company's ability to fulfill its obligations is quite large from the value of its own capital

market. Then, when viewed from the ratio of sales to total assets, it shows that the sales level is small by using all of its assets.

The company that has the lowest Altman Z-Score average is PT. Asia Pacific Fibers Tbk (POLY) which is -15,905. Within 5 years of research the company is predicted to go bankrupt. Based on the calculation of Altman Z-Score, the lowest value was owned by POLY in 2016. When viewed from the calculation indicator, namely the ratio of working capital to total assets, it shows that the company is not good enough to meet its short-term obligations. This was due to the abundant supply and significant increase in imports of polyester products, causing the demand for textile products to decline so that the company was unable to fulfill its obligations. This year the company followed up on debt restructuring to the ministry of finance. Damiano Investments BV as the majority of secured creditors and the majority of the company's shareholders are willing to support appropriate restructuring so that the company runs well and is willing to continue to provide working capital loans and Letter of Credit facilities for the procurement of raw materials. Then when viewed from the ratio of retained earnings to total assets, it shows that the company's ability to generate profits is not good because the value of retained earnings this year and the previous year is negative. The company does not distribute dividends because the company's financial condition does not allow it. Then seen from the ratio of earnings before interest and tax to total assets shows that the company is not good enough in the rate of return on assets because this year and the previous year the ratio was negative. Then, when viewed from the ratio of market value of equity to total liabilities, it shows that the company is unable to fulfill its obligations from the market value of its own capital because this year the ratio is 0.01. Then, when viewed from the ratio of sales to total assets, it shows that the sales level is small by using all of its assets. This is because the sales value has decreased due to a decrease in the selling price of filament yarn and polyester fiber. The decline in selling prices was caused by the decline in raw material prices due to the sharp decline in crude oil prices.

Based on the results of the analysis on the Springate Score method which has the highest average value, PT. Polychem Indonesia Tbk (ADMG) which has an average Springate Score of 0.208. Within 5 years of research the company is predicted to go bankrupt because it is in the category of potentially bankrupt. Based on the calculation of the Springate Score, the highest score achieved by ADMG was in 2018. Although in 2018 the company was predicted to go bankrupt, the company showed improved performance by optimizing the operation of the Merak plant with the completion of the catalyst replacement for the MEG 1 plant this year, which is capable of improve efficiency in the use of ethylene raw materials and to produce more competitive products so as to increase sales value for ethylene glycol products and their derivatives. This year, the company managed to reduce its net loss by 85%. When viewed from the calculation indicator, namely the ratio of working capital to total assets, it shows that the company is quite good at fulfilling its short-term obligations compared to other sample companies. The company's liquidity ratio at the end of 2018 reached 4.7 times, meaning that every \$1 of the company's current debt is guaranteed by \$4.7 of the company's current assets. Then when viewed from the ratio of earnings before interest and tax to total assets, it shows that the company is not doing well in the rate of return on assets because this year the ratio is still negative, only experiencing a slight increase compared to previous

years. Then seen from the ratio of earnings before tax to current liabilities shows that the company does not have a better ability to cover the current debt of the company with profit before tax because the ratio is negative. Then seen from the ratio of sales to total assets shows that the level of sales of the company by using all its assets is quite improved compared to previous years. This year's net sales increased due to an increase in sales in all segments, both sales of polyester and ethylene glycol products and their derivatives.

The company that has the lowest average Springate Score is PT. Asia Pacific Fiber Tbk (POLY) which is -3,540. Within 5 years of research the company is predicted to go bankrupt. Based on the calculation of the Springate Score, the value owned by POLY in 2016. Economic factors this year greatly affected the company, including the price of raw materials used by production facilities which also fluctuated following the movement of crude oil prices which in the end had to be compensated for by thinning margins. The domestic market is also still sluggish in line with the slowdown in downstream industrial activities due to falling retail consumption, as well as price competition with cheap imports of polyester fiber and filament yarn from other countries. Yarn prices and margins were most seriously affected due to declining demand from the downstream weaving and knitting sectors. When viewed from the calculation indicator, namely the ratio of working capital to total assets, it shows that the company is not good enough to fulfill its short-term obligations because the ratio is negative. Then, when viewed from the ratio of earnings before interest and tax to total assets, it shows that the company is not good enough in the rate of return on assets because the ratio is negative. Then when viewed from the ratio of earnings before tax to current liabilities, it shows that the company does not have a good ability to meet current debts owned by companies with profit before tax, this is because the ratio is negative. Then, when viewed from the ratio of sales to total assets, it shows that the level of company sales using all assets has decreased due to a decrease in the value of this ratio.

Verification Research Results

Normality Test

From the existing data after being processed using SPSS 21 the results of the normality test obtained are as follows:

**Table 2. Normality Test Results
One-Sample Kolmogorov Smirnov Test**

		ALTMAN	SPRINGATE
N		30	30
Normal Parameters ^{a,b}	Mean	-2.7248	-.7751
	Std. Deviation	7.60016	1.52811
	Absolute	.175	.199
Most Extreme Differences	Positive	.131	.148
	Negative	-.175	-.199
Kolmogorov-Smirnov Z		.961	1.091
Asymp. Sig. (2-tailed)		.315	.185

- a. Test distribution is Normal.
- b. Calculated from data.

Source: SPSS 21

The value of the Kolmogorov-Smirnov statistic test is 0.315 for the Altman result and 0.185 for the Springate result, which means that both data have normal distribution due to the Asymp value. Sig. (2-tailed) > 0.05, then the next step that can be taken is to test the significance of the difference using the independent sample t-test.

Independent Sample T-Test

From the existing data after being processed using SPSS 21, the results of the independent sample t-test were obtained as follows:

Table 2. Hypothesis Test Results

Group Statistics					
	METHOD	N	Mean	Std. Deviation	Std. Error Mean
BANKRUPTCY RESULTS	ALTMAN	30	-2.7248	7.60016	1.38759
	SPRINGATE	30	-.7751	1.52811	.27899

Source: SPSS 21

Table 3. Independent Samples T-Test

	Levene's Test for Equality of Variances			t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
BANKRUPTCY RESULTS	Equal variances assumed	30.228	.000	-1.378	58	.174	-1.94970	1.41536	-4.78286	.88346
	Equal variances not assumed			-1.378	31.341	.178	-1.94970	1.41536	-4.83508	.93568

Source: SPSS 21

Based on the results of the independent sample t-test in Table 4.4, it shows that T (count) with a value of $-1.378 < 2.03951$ (t-table) means that there is no significant difference. In addition, the output produces sig (2-tailed) or also known as p value with a value of $0.178 > 0.05$, it can be interpreted that there is no difference in prediction results between the Altman and Springate methods in predicting bankruptcy.

Test the Accuracy of Prediction Model

The following is a table and explanation for testing the accuracy and error types of the Altman Z-Score and Springate Score models.

Altman Z-Score Model

The first test was carried out on the Altman Z-Score model; here are the results of calculating the prediction accuracy of the Altman Z-Score model:

Table 4. Recapitulation of Accuracy Level and Type of Error I Altman Z-Score Model

Recapitulation	Detection			Total
	Bankrupt	Grey Area	Not Bankrupt	
Potentially Bankrupt	4	0	1	5
Total	4	0	1	5
Level of accuracy	80%			
Error Type I	20%			
Grey Area	0%			

Source: SPSS 21

Calculation:

$$\text{Level of accuracy} = \frac{\text{Correct Detection Count}}{\text{Number of Samples}} \times 100\%$$

$$= \frac{4}{5} \times 100\%$$

$$= 80\%$$

$$\text{Error Type I} = \frac{\text{Number of Type I Errors}}{\text{Number of Samples}} \times 100\%$$

$$= \frac{1}{5} \times 100\%$$

$$= 20\%$$

$$\text{Grey Area} = \frac{0}{5} \times 100\%$$

$$= 0\%$$

The Altman Z-Score model has an accuracy rate of 80% based on an analysis conducted on 5 companies. According to the table above, the accuracy of the analysis of the bankruptcy prediction method is proven to have the potential to experience bankruptcy with the characteristics of financial distress as an indicator. In addition, the error type I of the Altman Z-Score method is 20% which detects 1 company that has no potential for bankruptcy.

Springate Score Model

The second test was carried out on the Springate Score model; the following are the results of the calculation of the prediction accuracy of the Springate Score model:

Table 5. Recapitulation of Accuracy Level and Type of Error I Springate Score

Recapitulation	Detection		Total
	Bankrupt	Not Bankrupt	
Potentially Bankrupt	5	0	5
Total	5	0	5
Level of accuracy	100%		
Error Type I	0%		

Source: SPSS 21

Calculation:

$$\begin{aligned} \text{Level of accuracy} &= \frac{\text{Correct Detection Count}}{\text{Number of Samples}} \times 100\% \\ &= \frac{5}{5} \times 100\% \\ &= 100\% \end{aligned}$$

$$\begin{aligned} \text{Error Type I} &= \frac{\text{Number of Type I Errors}}{\text{Number of Samples}} \times 100\% \\ &= \frac{0}{5} \times 100\% \\ &= 0\% \end{aligned}$$

After calculating the accuracy of the bankruptcy prediction model, the Springate model has an accuracy rate of 100% based on the analysis conducted on 5 research sample companies. In accordance with the table above, the accuracy of the analysis of

this bankruptcy prediction method can be seen from 5 companies that have the potential to experience bankruptcy because they are proven to have the characteristics of financial distress as an indicator. In addition, the type I error of the Springate method is 0% which detects 0 companies that are not bankrupt.

Discussion of Verification Research Results

Independent Sample T-Test

The test results with the independent sample t-test showed the value of Sig (2-tailed) or called the p value with a value of $0.178 > 0.05$, which means H_0 is accepted and H_a is rejected. This means that there is no difference in the results in predicting bankruptcy between the Altman Z-Score method and the Springate Score with a 95% confidence level.

This is because in the calculations of the two bankruptcy prediction models, the results are not much different. In the Altman Z-Score calculation, it is predicted that 4 companies will experience bankruptcy, namely PT. Polychem Indonesia Tbk, PT. Argo Pantes Tbk, PT. Asia Pacific Fibers Tbk and PT. Ever Shine Textile Tbk. While the calculation of the Springate Score model shows the results that there are 5 companies that will experience bankruptcy, namely PT. Polychem Indonesia Tbk, PT. Argo Pantes Tbk, PT. Asia Pacific Fibers Tbk, PT. Ever Shine Textile Tbk and Tifico Fibers Indonesia Tbk. Then, when viewed from the level of accuracy, these 2 models have the same level of accuracy in the category of high accuracy; Altman Z-Score has an accuracy rate of 80% while Springate Score has an accuracy rate of 100%.

The results of this study are in line with the research conducted by Shafura, NRS (2016) with the title "Analysis of Differences in the Altman Z-Score, Zmijewski and Springate Models in Predicting Bankruptcy" which shows that there is no difference in prediction results between the Altman Z-Score model and the Altman Z-Score model. Springate Score, meaning that there is no difference between the two models in predicting bankruptcy in coal companies listed on the IDX. Then according to Susanti, N (2016)'s research with the title "Bankruptcy Analysis Using the Altman Z-Score, Springate and Zmijewski Method on Cement Companies Listed on the IDX for the Period 2011-2015" shows the results that there is no significant difference between the three methods used. Then in line with the research conducted by Wulandari and Tasman (2019) with the title "Comparative Analysis in Predicting Bankruptcy in Telecommunication Companies Listed on the Indonesia Stock Exchange in 2008-2017" shows the results that overall there is no difference in scores between the modified Altman model and Springate in predicting bankruptcy in telecommunications companies. Then according to research conducted by Harvandy, TJ (2017) entitled "Comparative Analysis of Bankruptcy Predictions with the Altman Z-Score Model and the Springate Model in Coal Mining Companies Listed on the Indonesia Stock Exchange" shows the results that there is no difference between the Altman model and Springate Score.

Prediction Model Accuracy Test Results

The results of the calculation of the level of accuracy show that from the two bankruptcy prediction models, the Altman Z-Score and Springate Score methods have the highest accuracy, namely the Springate Score method with an accuracy rate of 100%

with an error type 1 of 0% in predicting bankruptcy. Based on the results of this study, it can be concluded that the most suitable predictor of bankruptcy applied to manufacturing companies in the textile and garment sub-sector is the Springate Score method. Springate's S-Score prediction method has the highest level of accuracy; this indicates that the financial ratios used by Springate are able to predict the bankruptcy of textile and garment manufacturing companies on the IDX. Based on this ratio illustrates that the performance of management with the use of working capital, profitability and sales volume will determine whether the company is bankrupt or not. This can be interpreted that if the company is able to maximize its working capital, then the company will have added value which is indicated by the company's profit achievement in one period. Profit achievement is considered optimal if the company is able to increase sales volume by reducing costs incurred in the company's operational activities. With optimal sales volume, it is expected that the company's profit achievement will also increase, so that the profit earned by the company will be able to increase the value of the assets owned by the company.

The results of this test are in accordance with the results of Sari, EWP (2015) research with the title "Using the Zmijewski, Springate, Altman Z-Score and Grover Models in predicting bankruptcy" showing the results that in this study the Springate model is the most suitable model to be applied because of its high level of accuracy. High with a low error rate compared to other prediction models. Then in line with the research conducted by Putera, Swandari and Dewi (2016) in their research entitled "Comparison of Financial Distress Predictions Using the Altman, Springate and Ohlson Models" shows the results that from the results of their research the Springate model has a better accuracy rate than Altman and Ohlson.

CONCLUSION

Among the bankruptcy prediction methods used in this study, the results show that there is no difference in the results in predicting bankruptcy between the Altman Z-Score method and the Springate Score with a confidence level of ninety five percent. This is because both models have a high level of accuracy; The Altman Z-Score has eighty percent accuracy while the Springate has one hundred percent accuracy.

Based on the results of the analysis of the Altman Z-Score method from a sample of five companies in the textile and garment sub-sector as many as five companies in this model, it is predicted that four companies will be declared in a potentially bankrupt condition, namely PT. Polychem Indonesia Tbk, PT. Argo Pantes Tbk, PT. Ever Shine Textile Tbk and PT. Asia Pacific Fibers Tbk.

Based on the results of the analysis of the Springate Score method from the number of samples of the textile and garment sub-sector companies as many as five companies in this method it is predicted that all samples of companies are declared in a potentially bankrupt condition, namely PT. Polychem Indonesia Tbk, PT. Argo Pantes Tbk, PT. Ever Shine Textile Tbk, PT. Asia Pacific Fibers Tbk and PT. Tifico Fibers Indonesia Tbk.

Judging from the level of accuracy of the two methods, the results show that the Springate Score method has a higher accuracy rate of one hundred percent with an error

rate of zero percent, while the Altman Z-Score method has an accuracy rate of eighty percent with an error rate of twenty percent.

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