COMPARATIVE ANALYSIS OF FINANCIAL DISTRESS WITH ALTMAN Z-SCORE, SPRINGATE AND GROVER MODELS IN RETAIL COMPANIES LISTED IN INDONESIA STOCK EXCHANGE (BEI) PERIOD 2016-2018

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Abstract *- This study aims to analyze the comparison of financial distress in the Altman, Springate and Grover models in Retail companies listed on the Indonesia Stock Exchange (IDX). This study uses a comparative type of qualitative research approach. The data used in this study are secondary data.*

The population of this study is retail companies listed on the Indonesia Stock Exchange in 2016 to 2018. The sample is determined by the purposive sampling method, with a total sample of 22 companies from 25 companies listed on the Indonesia Stock Exchange, so that the total observations in this study are 66 observations . Data collection techniques using the method of documentation through the site www.idx.co.id and information from various media to find out a comparison of the company's current conditions.

The results of this study states that the comparison of financial distress predictions produces different analyzes and the level of accuracy in accordance with the company's current conditions is the Springate and Grover models with an accuracy rate of 77.27% each.

Key Words : Financial Distress, Altman Z-Score, Springate, Grover

I. INTRODUCTION

The Indonesian economy is currently facing new challenges such as the emergence of the Industrial Revolution 4.0 which might also be a threat to business growth in Indonesia. The emergence of the 4.0 Industrial Revolution in the digital era today is very helpful for the public in carrying out its activities because it is assisted by various types of technology, but this is not the case for businesses in the retail sector.

The retail industry is predicted to remain under pressure going forward. This was driven by a number of factors, one of which was household consumption, to cope with pressure, a number of retail companies had strategies with efficiency, such as closing outlets and laying off jobs. One of them was recently carried out by PT Hero Supermarket Tbk by closing 26 outlets and laying off 532 employees in 2018 and there were several retail companies that closed their businesses, including 7 Eleven (Sevel), Matahari outlets in Pasarya Mahakam and Manggarai Blocks, Lotus, Debenhams , and GAP.

Economist at the University of Indonesia (UI), Lana Soelistianingsih, said that Indonesia's economic strength has been assumed by household consumption. While retail sales accounted for 60% of household consumption. He explained, this downward trend will make economic conditions in the third quarter will not be much different from the third quarter of 2017. In the same period last year, Indonesia's economy grew 5.06%.

Trading companies in the retail sector generally have unstable financial conditions. This instability can cause financial difficulties. Financial distress is a stage of decline in financial conditions that occur in companies before bankruptcy or liquidation according to Platt HD and Platt MB (2008) in Kariman (2016: 1). Retail companies must continue to observe changes in the market and the evolving needs of consumers, because this is the key for the retail business to survive. It is undeniable that the change in penetration from online retail business has spread to Indonesia, changing business penetration from offline to online is important to meet the needs of consumers who increasingly want to be efficient from time to time, therefore it is time for the retail industry to enter the digital business (e-commerce).

Many causes of a company going bankrupt and because of the many causes there arises a method for analyzing the symptoms of company bankruptcy which is expected to be used to anticipate the financial condition of a company before the company reaches bankruptcy or bankruptcy.

Research to compare financial distress prediction methods varies very little. One of the studies comparing bankruptcy prediction models is research from Evi, Prihanthini and Sari (2013), he conducted research on bankruptcy prediction analysis with Grover, Altman Z-Score, Springate and Zmijewski models in food and beverage companies. The results of the research show that there are differences between the Grover model with the Altman Z-Score, the Grover model with Springate and the Grover model with the Zmijewski model. And the Grover model is the most suitable prediction model applied to Food and Beverage companies because this model has the highest level of accuracy compared to other models that is 100%, the Altman 80% model, the Springate model 90%, and the Zmijewski model 90%.

Another study comparing bankruptcy prediction models is Yuliastary and Wirakusuma (2014), with the title of financial distress analysis using the Altman Z-Score, Springate, Zmijewski method. And from this study it was concluded that the company's performance in general is in a healthy state or no potential for bankruptcy shown from the results of testing using these three methods namely the Altman Z-Score, Springate, Zmijewski method.

The condition of retail companies which are the object of their inclination can still make a profit but the value of the debt is large. Based on the background and description above, the authors chose the title **"Comparative Analysis of Financial Distress with the Altman Z-Score, Springat**

and Grover Models of Retail Companies Listed on the Indonesia Stock Exchange (BEI) Period of 2016-2018"

II. LITERATURE REVIEW

Definition of Financial Distress

Financial distress is a condition of a company's operating cash flow that is not sufficient to meet its obligations to creditors, both the principal and the interest (Ross, 2008) in Marbun (2014: 7). Meanwhile, Brigham (2011: 871) states that financial distress occurs when a company experiences an inability to settle payments on time or the company's cash flow does not go well. Therefore it can be said that financial distress is a decline in financial condition and company performance that occurs when the company's operating cash flow is unable to meet its short-term obligations that are due soon, both obligations to creditors in the form of loans and interest, as well as obligations to shareholders in the form of dividends.

Financial Distress is the result of a company's business ugliness that can be influenced by both internal factors such as poor business management (mismanagement), excessive expansion, poor financial decision making, high production costs, ineffective sales force and company maturity, and external factors such as the weakening of the country's economy.

Causes of Financial Distress

Many things in the company that can cause financial distress. According to Wijoyo (2016:466), as follows:

1. Neoclassical Model

Financial distress and bankruptcy occur if the allocation of resources within the company is incorrect. Management is less able to allocate resources (assets) in the company to the company's operational activities.

2. Financial Model

Mixing assets is right but the financial structure is wrong with liquidity constraints, this means that although the company can survive in the short term, it must also go bankrupt in the long run.

3. Corporate Governance Model

According to this model, bankruptcy has the right mix of assets and financial structures but if it is managed poorly, it will potentially experience financial distress. This inefficiency drives companies out of the market as a consequence of unresolved corporate governance problems.

Forms of corporate governance that can cause financial distress include ownership concentration and poor governance (poor corporate governance). Poor corporate governance within a company can encourage opportunities for controlling shareholders (majority) to transfer company value into their own pockets.

Development of a Bankruptcy Prediction Model

In statistics, the determination of this formula uses the Multivariate Discriminant Analysis (MDA) method. Altman takes the same number of samples between two categories (paired samples). The method that was born was Altman Z-Score. Until now this method is still widely used in predicting financial distress in companies. Springate (1978) also uses the same statistical methods and sampling techniques as Altman but the samples are different. If Altman uses a sample of companies in America, Springate uses a sample of companies in Canada.

Ohlson (1980) proposed a different sample selection formula and technique than Altman (1968). Samples were selected by random sampling using the multinomial logit methodology. Zmijewski (1983) uses a different theory, namely that profitability, volatility, and the condition of corporate leverage are the most important variables in predicting distress. This theory can be likened to the theory of liquidity, profitability, and wealth. The methodology used by Zmijewski is almost the same as that of Ohlson (1980), which uses multiple logit variable (multivariate) variables. The sample selection method used in the study is also the same, that is chosen randomly, so the number of companies in the two categories (distress and non-distress) does not have to be the same.

The Fulmer model (1984) uses step-wise multiple discriminate analysis to evaluate 40 financial ratios that apply to 60 company samples, 30 failed and 30 successful. Blaszt System (1984) is only a business failure prediction method not developed using multiple discriminate analysis. It is a system developed by William Blaszt in 1984. The essence of this system is to calculate financial ratios to evaluate companies, weights and comparisons with ratios for the average industrial company that are the same as given by Dunn & Bradstreet. One of the strengths of this method is that it compares companies with similar industries and evaluates them.

Grover's model is the youngest bankruptcy prediction model in 2001 which was discovered by Jeffrey S. Grover is a model created by designing and re-evaluating the Altman Z-Score model. Jeffrey S. Grover used the sample according to the Altman Z-Score model in 1968, adding thirteen new financial ratios. The sample used was 70 companies with 35 companies that went bankrupt and 35 companies that did not go bankrupt in 1982-1966.

Altman Z-Score Model

Altman (1968) Altman was the first person to apply multiple discriminant analysis, the rationale for Altman to use discriminant analysis was the analysis of the limitations of ratio analysis through its methodology which is basically a deviation, which means each ratio is tested separately so that the effect of a combination of several ratios is only based on consideration financial analysis. Here is the Z-Score equation:

Z = 1.2*X1 + 1.4*X2 + 3.3*X3 + 0.6*X4 + 1*X5

Z = *Over all index*
XI = *Working Capital / Total Aset* dimana WC = CA-CL
X2 = *Retained Earning / Total Aset*
X3 = *EBIT / Total Aset*
X4 = *Market Value of Equity / Book Value of Liabilities*
X5 = *Sales / Total Asets*

Based on the Altman formula, the company is classified into three categories with the following descriptor zones:

If Z > 2,99 → *Safe Zone (Low Risk Area (Healty)*)
If 1,8 < Z < 2,99 → *Grey Zone (Uncertain Result)*
If Z < 1,8 → *Distress Zone (Hight Risk of Bankrupt*

However, given that not all companies went public, in 1984, Altman did the research again. Formulas produced for companies that do not go public (private manufacturer companies) and private non manufacturing companies are as follows.

a. *Private Companies* :

Z = 0.717*X1 + 0.847*X2 + 3.107*X3 + 0.420*X4 + 0.998*X5

Z = *over all index*
XI = *Working Capital / Total Aset* dimana WC = CA-CL
X2 = *Retained Earning / Total Aset*
X3 = *EBIT / Total Aset*
X4 = *Book Value of Equity / Book Value of Liabilities*
X5 = *Sales / Total Asets*

Based on *Altman* formula, the classification of the company being three part of category with descriminan zones:

Bila Z > 2,99 → *Safe Zone (Low Risk Area (Healty)*)
Bila 1,23 < Z < 2,99 → *Grey Zone (Uncertain Result)*
Bila Z < 1,23 → *Distress Zone (Hight Risk of Bankrupt)*

b. *Non-manufacturing Companies* :

Z = 6.56*X1 + 3.26*X2 + 6.72*X3 + 1.05*X4

Z = *over all index*
XI = *Working Capital / Total Aset* dimana WC = CA-CL
X2 = *Retained Earning / Total Aset*
X3 = *EBIT / Total Aset*
X4 = *Book Value of Equity / Book Value of Liabilities*

Based on *Altman* formula, the classification of the company being three part of category with descriminan zones:

Bila Z > 2,60 → *Safe Zone (Low Risk Area (Healty)*)
Bila 1,10 < Z < 2,60 → *Grey Zone (Uncertain Result)*
Bila Z < 1,10 → *Distress Zone (Hight Risk of Bankrupt)*

In this modification the Altman model eliminates the X5 variable because this ratio varies greatly in industries with different asset sizes.
The advantages and disadvantages of the Altman Z-Score model according to BAPEPAM (2005) in Nurcahyanti (201: 5).
Advantages:
a. Combining various financial ratios together.
b. Provide appropriate coefficients for combining independent variables.
c. Easy to apply.
d. The ratio of earnings before interest and tax to total assets is the best indicator to determine the occurrence of bankruptcy.
e. Can better describe the condition of the company in accordance with reality.
f. Z.Score values are more stringent in assessing bankruptcy rates.

Deficiency:
a. Z-Score values can be engineered or refracted through incorrect accounting principles or other financial engineering.

b. The Z-Score formula isn't quite right for new companies that are low or even still losing money. Usually the results of the Z-Score will be low.
c. Z-Score calculation on a quarterly basis in a company can give inconsistent results if the company has a policy to write off the receivables at the end of the year altogether.

The following is an explanation of the ratio variables found in the Altman model:

a. *Working Capital to Total Asset (X1)*
   WCTA = Working Capital / Total Asset
   Working Capital = Current Asset – Current Liabilities
b. *Retained Earning to Total Assets Ratio (X2)*
   RETA = Retained Earning / Total Asset
c. *Earning Before Income and Taxes to Total Assets Ratio (X3)*
   EBIT to Total Asset = Earning Before Interest and Taxes / Total Asset
d. *Market Value of Equity to Book Value of Liabilities (X4)*
   MVE_BVL = Market Value Of Equity / Total Debt
   ***Market Value of Equity* = Jumlah Lembar Saham Biasa Yang Beredar x Harga Pasar Per Lembar Saham**
   ***Book Valuue of Liabilities* = Current Liabilities + Long Term Liabilities**
e. *Sales to Total Asset (X5)*
   Sales_TA = Sales / Total Asset

Springate Model

Gordon L. V Springate (1978) has conducted research related to the prediction model of a company's financial distress potential. According to Guinan (2009: 236) in (Savitri: 2014), the Springate model is a model that was developed using multidiscriminant analysis. At first Springate used 19 financial ratios but after testing Springate took four ratios. This Springate model can be used to predict bankruptcy with an accuracy value of 92.5% (Sari: 2013). This model has the formula:

***S-Score* = 1.03*X1 + 3.07*X2 + 0.66*X3 + 0.4*X4**

XI = Working Capital / Total Aset dimana WC = CA-CL
X2 = EBIT / Total Aset
X3 = EBT / Current Liability
X4 = Sales / Total Aset

If S ≥ 0,862 → *Safe Zone (Low Risk Area (Healty)*)
If S < 0,862 → *Distress Zone (Hight Risk of Bankrupt).Springate*

The advantages and disadvantages of the Springate method according to BAPEPAM (2005) in Nurcahyanti (2015).
Advantages:
a. Combining various financial ratios together.
b. Provide appropriate coefficients for combining independent variables.
c. Easy to apply.
d. The ratio of profit before interest and tax to total assets is the best indicator to determine the occurrence of bankruptcy.

Deficiency:
Ratio values can be engineered or biased through incorrect accounting principles or other financial engineering.
The following is an explanation of the ratio variables found in the Springate model:

a. *Working Capital to Total Asset Ratio*
   ***WCTA*= Working Capital / Total Assets**
   Working Capital = Current Asset – Current Liabilities
b. *Earning Before Income and Taxes to Total Assets*
   EBIT_TA = EBIT / Total Assets
c. *Earning Before Taxes to Current Liability*
   EBT_CL = Earning Before Taxes / Current Liabilities
d. *Sales to Total Asset*
   Sales to Total Asset = Sales / Total Asset

Grover Model

The Grover model was created by designing and reassessing the Altman Z-Score Model. The Grover model categorizes companies in bankruptcy if they score less than or equal to -0.02 ($G \leq -0.02$) while the value for companies categorized in a non-bankrupt state is more or equal to 0.01 ($G \geq 0.01$) of companies with a score between the upper limit and the lower limit is in the gray area ($-0.02 \leq G \leq 0.01$). The Grover formula is as follows:
***G-Score*= 1.650*X1 + 3.404*2 + 0.016*ROA + 0.057**

X1 = *working capital/ total asset*
X2 = *Earning before interst and taxes/total asset*
ROA = *Net Income/total asset*

The advantage of the Grover method is to use the ratio of return on assets where this ratio shows the company's ability to manage each asset to generate net income after tax. The weakness of Grover's method in analyzing financial distress is not using the ratio of sales to total assets where this ratio shows how much sales to total investment of assets.
The following are the ratios used by Grover:

a. *Working Capital to Total Asset Ratio*
   ***WCTA*= Working Capital / Total Assets**
   Working Capital = Current Asset – Current Liabilities

b. *Earning Before Interest and Taxes to Total Assets*
   EBIT_TA = EBIT / Total Assets

c. *ROA (Return on Asset)*
   ROA = Earning After Taxes / Total Asset

Financial statements

Understanding financial statements according to the Indonesian Institute of Accountants in Financial Accounting Standards (SAK) (2018: 1.13) "Financial statements are a structured presentation of the financial position and financial performance of an entity". The overall purpose of the financial statements is to provide useful information for investors and creditors in making investment and credit decisions. The types of decisions made by decision makers are very diverse, as are the decision making methods they use and their ability to process information, Hery (2017: 4).

Financial Accounting Standards (SAK) (2018: 1.3) The purpose of financial statements is to provide information about the financial position, financial performance, and cash flow of an entity that is useful for most users of financial statements in making economic decisions.

Financial Statement Analysis

Hery (2017: 113), Financial Statement Analysis is a process to dissect financial statements into their elements and examine each of these elements with the aim of obtaining a good and proper understanding and understanding of the financial statements themselves. Analysis of financial statements can also help management in making decisions because by analyzing financial statements can find out the weaknesses and strengths of a company through the information obtained.

All information regarding a company's weaknesses and strengths is known through an analysis of its financial statements. By knowing these weaknesses, management will be able to repair or cover up those weaknesses. Then, the strength of the company must be maintained or even increased. This power can be used as capital in the future. With the weaknesses and strengths owned, management performance will be reflected so far. Cashmere (2015: 66).

III. RESEARCH METHOD

Research Strategies

Sugiyono (2013: 14), in terms of the type of research approach used in this study is a qualitative analysis. What is meant by a qualitative research method is a research method based on the philosophy of postpositivism, used to examine natural conditions of objects, (as opposed to experiments) where the researcher is as a key instrument, the sampling of data sources is carried out purposively and snowbaally, collecting techniques combined, data analysis is inductive / qualitative, and the results of this qualitative research emphasize more on meaning than generalization.

The type of qualitative comparative research used in this study the researcher will choose a sample in accordance with the established criteria. Researchers will collect retail company financial statement data needed to predict Z-Scores, S-Scores and G-Scores in terms of financial statement accounts to calculate financial ratios. Then the data is processed in the form of financial ratio calculations, the calculation of financial ratios is the initial stage to determine the company value of each model. Then do the calculations by the three bankruptcy prediction models in this study. So that the bankruptcy index numbers can be classified based on the provisions of each model. After knowing the company's condition, whether the company is in the save zone, gray zone or financial distress condition, the researcher will calculate the percentage of accuracy and classify each of these research models that experience financial distress with those who do not experience financial distress according to the specified criteria. The results shown will be viewed with the current condition of the company and will be given a score. Thus it can be determined who has the highest level of accuracy and the lowest error rate of the three models to find out which prediction models are in accordance with the existing reality.

IV. RESULTS AND DISCUSSION

This study uses secondary data, namely data derived from the financial statements of companies listed on the Indonesia Stock Exchange on the website www.idx.co.id in the period 2016 - 2018. The subject of this study is a retail company that has gone public listed on the Stock Exchange Indonesia. The object of this study is the financial statements published by retail companies that can be downloaded on the site. The target population in this study is retail companies listed on the

Indonesia Stock Exchange and includes annual reports for the period of 2016, 2017 and 2018. The research sample used is 22 companies that researchers have chosen and meet predetermined criteria.

The results of this analysis conclude that the methods used are Altman, Springate and Grover provide different financial distress prediction results. The difference in the calculation results of each analysis model is due to the cut-off value and the calculation of different variables between the analysis models.

Calculation Model Analysis

Tabel 4.8 result of *Altman Z-Score*

No	Kode Emiten	Nama Perusahaan	*Z-Score*		
			2016	**2017**	**2018**
1	**ACES**	Ace Hardware Indonesia Tbk	8.13	7.99	8.10
2	**AMRT**	Sumber Alfaria Trijaya Tbk	0.48	0.28	1.39
3	**CENT**	Centratama Telekomunikasi Indonesia Tbk	-0.10	-0.17	0.30
4	**CSAP**	Catur Sentosa Adiprana Tbk	1.68	0.13	1.55
5	**DAYA**	Duta Intidaya Tbk	-1.28	-0.15	-0.26
6	**ECII**	Electronic City Indonesia Tbk	4.55	4.67	4.58
7	**ERAA**	Erajaya Swasembada Tbk	2.22	2.30	2.65
8	**GLOB**	Global Teleshop Tbk	-66.42	-77.94	-128.91
9	**GOLD**	Golden Retailindo Tbk	-0.71	-0.89	-0.01
10	**HERO**	Hero Supermarket Tbk	1.89	1.14	-0.12
11	**KOIN**	Kokoh Inti Arebama Tbk	0.93	0.78	0.47
12	**LPPF**	Matahari Departement Store Tbk	7.42	6.70	5.92
13	**MAPI**	Mitra Adi Perkasa Tbk	2.64	2.56	2.93
14	**MIDI**	Midi Utama Indonesia Tbk	0.25	-0.65	-0.30
15	**MKNT**	Mitra Komunikasi Nusantara Tbk	5.59	1.82	1.74
16	**MPPA**	Matahari Putra Prima	1.61	-3.53	-2.34
17	**RALS**	Ramayana Lestari Sentosa Tbk	5.39	5.54	6.19
18	**RANC**	Supra Boga Lestari Tbk	2.53	2.61	2.68
19	**RIMO**	Rimo International Lestari Tbk	-27.09	0.30	-1.18
20	**SONA**	Sona Topas Tourism Industry Tbk	3.91	4.38	5.66

21	**TELE**	Tiphone Mobile Indonesia Tbk	6.40	5.94	6.51
22	**TRIO**	Trikomsel Oke Tbk	-123.53	-108.86	-156.30

Tabel 4.9 result of *Springate S-Score*

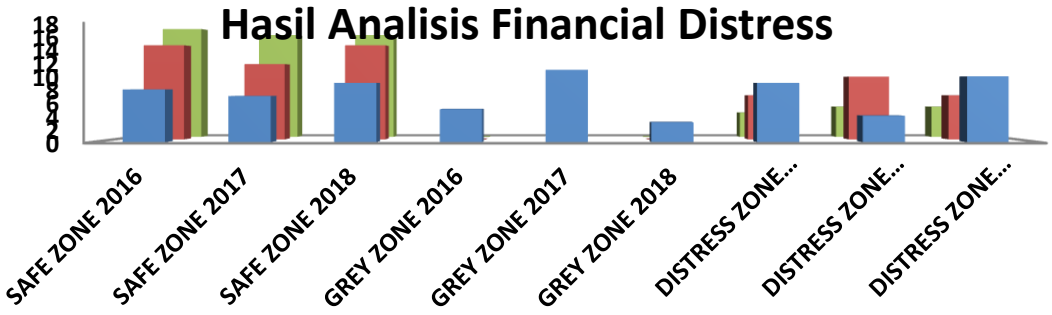
No	**Kode Emiten**	**Nama Perusahaan**	***S-Score***		
			2016	**2017**	**2018**
1	**ACES**	Ace Hardware Indonesia Tbk	3.39	3.20	3.17
2	**AMRT**	Sumber Alfaria Trijaya Tbk	1.33	1.22	1.53
3	**CENT**	Centratama Telekomunikasi Indonesia Tbk	-0.09	-0.05	0.22
4	**CSAP**	Catur Sentosa Adiprana Tbk	1.06	0.12	1.03
5	**DAYA**	Duta Intidaya Tbk	0.21	0.72	0.68
6	**ECII**	Electronic City Indonesia Tbk	0.73	0.94	1.33
7	**ERAA**	Erajaya Swasembada Tbk	1.56	1.55	1.76
8	**GLOB**	Global Teleshop Tbk	-3.89	-2.13	-3.30
9	**GOLD**	Golden Retailindo Tbk	-0.29	-0.13	-0.01
10	**HERO**	Hero Supermarket Tbk	0.98	0.60	-0.04
11	**KOIN**	Kokoh Inti Arebama Tbk	0.95	0.95	0.86
12	**LPPF**	Matahari Departement Store Tbk	3.14	2.76	2.21
13	**MAPI**	Mitra Adi Perkasa Tbk	1.08	1.16	1.42
14	**MIDI**	Midi Utama Indonesia Tbk	1.05	0.74	0.87
15	**MKNT**	Mitra Komunikasi Nusantara Tbk	1.67	3.04	2.51
16	**MPPA**	Matahari Putra Prima	1.03	-0.50	-0.04
17	**RALS**	Ramayana Lestari Sentosa Tbk	1.66	1.63	1.92
18	**RANC**	Supra Boga Lestari Tbk	1.70	1.60	1.58
19	**RIMO**	Rimo International Lestari Tbk	-1.34	0.27	0.04
20	**SONA**	Sona Topas Tourism Industry Tbk	0.97	1.35	1.83
21	**TELE**	Tiphone Mobile Indonesia Tbk	2.82	2.52	2.81
22	**TRIO**	Trikomsel Oke Tbk	-10.59	0.13	-1.11

Tabel 4.10 result of *Grover G-Score,*

No	Kode Emiten	Nama Perusahaan	*G-Score*		
			2016	**2017**	**2018**
1	**ACES**	Ace Hardware Indonesia Tbk	1.93	1.87	1.91
2	**AMRT**	Sumber Alfaria Trijaya Tbk	0.18	0.10	0.40
3	**CENT**	Centratama Telekomunikasi Indonesia Tbk	0.09	0.05	0.23
4	**CSAP**	Catur Sentosa Adiprana Tbk	0.47	0.09	0.44
5	**DAYA**	Duta Intidaya Tbk	0.10	0.42	0.27
6	**ECII**	Electronic City Indonesia Tbk	0.99	1.04	1.04
7	**ERAA**	Erajaya Swasembada Tbk	0.58	0.59	0.77
8	**GLOB**	Global Teleshop Tbk	-8.71	-8.56	-12.89
9	**GOLD**	Golden Retailindo Tbk	-0.29	-0.24	0.05
10	**HERO**	Hero Supermarket Tbk	0.33	0.06	-0.41
11	**KOIN**	Kokoh Inti Arebama Tbk	0.27	0.23	0.16
12	**LPPF**	Matahari Departement Store Tbk	1.96	1.65	1.21
13	**MAPI**	Mitra Adi Perkasa Tbk	0.72	0.71	0.81
14	**MIDI**	Midi Utama Indonesia Tbk	0.19	-0.16	-0.06
15	**MKNT**	Mitra Komunikasi Nusantara Tbk	1.45	0.58	0.49
16	**MPPA**	Matahari Putra Prima	0.34	-1.34	-0.74
17	**RALS**	Ramayana Lestari Sentosa Tbk	0.97	1.01	1.22
18	**RANC**	Supra Boga Lestari Tbk	0.64	0.63	0.64
19	**RIMO**	Rimo International Lestari Tbk	-2.74	0.32	-0.07
20	**SONA**	Sona Topas Tourism Industry Tbk	0.75	1.01	1.39
21	**TELE**	Tiphone Mobile Indonesia Tbk	1.73	1.58	1.68
22	**TRIO**	Trikomsel Oke Tbk	-18.06	-3.96	-6.83

The results of this analysis conclude that the methods used are Altman, Springate and Grover provide different financial distress prediction results. The difference in the calculation results of each analysis model is due to the cut-off value and the calculation of different variables between the analysis models.

Gambar 4.1

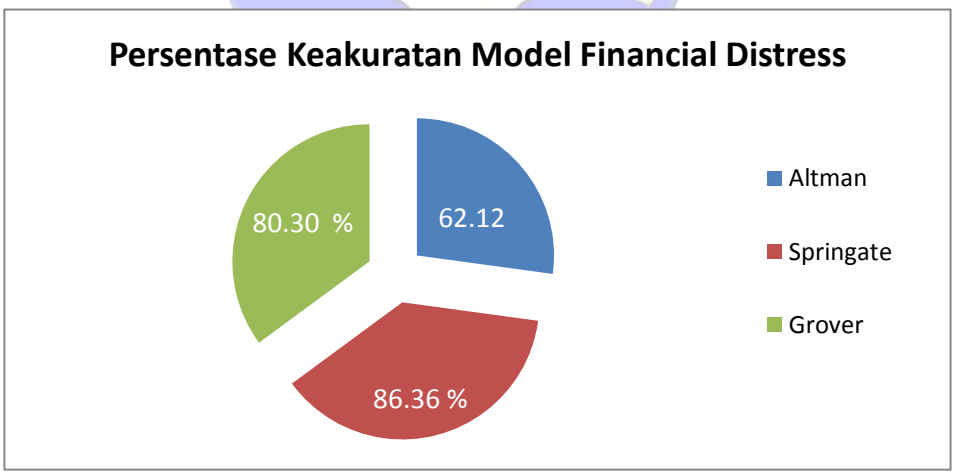


	SAFE ZONE 2016	SAFE ZONE 2017	SAFE ZONE 2018	GREY ZONE 2016	GREY ZONE 2017	GREY ZONE 2018	DISTRESS ZONE 2016	DISTRESS ZONE 2017	DISTRESS ZONE 2018
ALTMAN	8	7	9	5	11	3	9	4	10
SPRINGATE	15	12	15	0	0	0	7	10	7
GROVER	18	17	17	0	0	0	4	5	5

Calculate the Accuracy Level

To calculate the highest percentage of accuracy and error in the Altman, Springat and Grover analysis methods, the researcher gave a score as a reference in the calculation. If each of the analytical models has a suitability of the results of the prediction then a score of 1 is given, if wrong or not accordingly a score of 0 is given, and the researcher gives a score of 0.5 if the prediction results are in the gray area or gray zone conditions.

Gambar 4.2



From these results, the highest percentage of accuracy in this study was 86.36% by the Springate model, then below that there was 80.30% by the Grover model, and the last was the Altman model which was 62.12%. Vice versa for the highest error rate by Altman model of 37.88%, Grover 19.70% and Springate with the lowest error rate of 13.64%.

Comparing the Current Condition of the Company

To find out the condition of the research services sector, the retailer's company presents the results of the analysis of the Altman, Springate and Grover models with the company's current condition. This information is explained by researchers to answer the second problem formulation with data in the form of company conditions in 2019 based on updated information obtained through the media.

Tabel 4.14 The companies condition

No	Nama Perusahaan	EBITDA	RESULT
		Q1 2019	2019
1	Ace Hardware Indonesia Tbk	300,917	*Non Distress*
2	Sumber Alfaria Trijaya Tbk	347,084	*Non Distress*
3	Centratama Telekomunikasi Indonesia Tbk	68,111	*Non Distress*
4	Catur Sentosa Adiprana Tbk	67,494	*Non Distress*
5	Duta Intidaya Tbk	-4,325	*Distress*
6	Electronic City Indonesia Tbk	-7,952,604	*Distress*
7	Erajaya Swasembada Tbk	174,065	*Non Distress*
8	Global Teleshop Tbk	-166,778	*Distress*
9	Golden Retailindo Tbk	3,273,538	*Non Distress*
10	Hero Supermarket Tbk	-84,598	*Distress*
11	Kokoh Inti Arebama Tbk	2,479,472	*Non Distress*
12	Matahari Departement Store Tbk	184,015	*Non Distress*
13	Mitra Adi Perkasa Tbk	286,874	*Non Distress*
14	Midi Utama Indonesia Tbk	83,412	*Non Distress*
15	Mitra Komunikasi Nusantara Tbk	-17,919,430	*Distress*
16	Matahari Putra Prima	-88,383	*Distress*
17	Ramayana Lestari Sentosa Tbk	42,364	*Non Distress*
18	Supra Boga Lestari Tbk	2,981,386	*Non Distress*
19	Rimo International Lestari Tbk	9,527,154	*Non Distress*
20	Sona Topas Tourism Industry Tbk	26,396,883	*Non Distress*
21	Tiphone Mobile Indonesia Tbk	173,871	*Non Distress*
22	Trikomsel Oke Tbk	-3,124,234	*Distress*

Comparison Results of the Company's Current Conditions

Tabel 4.15 Comparison Results of the Company's Current Conditions Quartal I of 2019

Model Prediksi	Tingkat Akurasi	Tingkat Kesalahan
Altman	65.91%	34.09%
Springate	77.27%	22.73%
Grover	77.27%	22.73%

Based on the results of comparison of company conditions in the first quarter of 2019 which were compared with the results of the accuracy of each analysis model resulted in Altman 65.91%, Springate 77.27%, and Grover 77.27%. It can be concluded that the analysis model that is suitable with the current condition of the company is the Springate and Grover models which have the same level of accuracy.

V. CONCLUSIONS AND SUGGESTIONS

The results of the analysis of this data have been done by researchers to predict the condition of financial distress in retail companies listed on the Indonesia Stock Exchange in 2016-2018. This method uses the Altman, Springate and Grover models which have different results because each model has its own formula / formula, variable calculation of financial ratios and cut-off values also vary. Based on the discussion that has been described in previous chapters, it can be concluded as follows:

1. The results of the study state that the results of the comparison of financial distress in retail sector companies listed on the Indonesia Stock Exchange have different results because each method has a cut-off value and different variable calculations between the analysis models. There are several companies that experience safe zone and distress zone conditions every year using the Altman, Springate and Grover model calculations. Whereas companies that have gray zone conditions are only included in the Altman model calculation.

2. The results of the study stated that of the three prediction models that have been analyzed, the level of accuracy in accordance with the current condition of the company is the Springate and Grover models that have the same accuracy level of 77.27%, while Altman has an accuracy rate of 65.91%.

Suggestion

1. Based on the conclusions above, the researcher makes a suggestion to be taken into consideration for further research to use the financial distress prediction model by using the Springate or Grover model in retail sector companies to obtain accurate prediction results and in accordance with the company's current conditions.

2. Researchers also suggested that the Springate and Grover models could be taken into consideration in predicting financial distress in other company sectors in order to get accurate results and in accordance with current company conditions and researchers also made suggestions for using other methods in analyzing financial distress comparisons. .

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