ANALYSIS OF FINANCIAL STATEMENTS WITH ALTMAN Z-SCORE AND SPRINGATE MODELS ON PT. HERO SUPERMARKET, Tbk

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Abstract

The company was founded basically in the hope of generating profit, creating market segments or customers and carrying out development in products against the needs of the desired community. In fact, often these assumptions miss and are far from hopeful. Companies that have been doing activities for a certain time sometimes have to be liquidated due to financial difficulties and eventually go into bankruptcy. The threat of bankruptcy does not occur if the company conducts an analysis as early as possible using a company's financial statements. One method of analysis in predicting bankruptcy is the Altman Z-Score method and the Springate method. The purpose of this research is to find out the results of the prediction of potential bankruptcy PT. Hero, Tbk period 2016-2019 using Altman Z-Score and Springate models. Population in this study PT Financial Statements. Hero, Tbk, while the sample in this study is PT Financial Report. PT. Hero, Tbk Period 2016-2019.The results show pt. Hero Supermarket, Tbk based on the Altman Z-Score method, in 2016-2019 the company can be categorized as a company not bankrupt/ healthy company. Based on the Springate method in 2016 and 2019 the company is categorized as a company not bankrupt / healthy, while in 2017 and 2018 is predicted as a bankrupt company/unhealthy company.

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

1. INTRODUCTION
A. Background

The company was founded basically have expectations of generate profits, create market segments or customers as well as running the development of the product against the needs of the community desired. Competition competing businesses are high, fast, and competitive prices among the various companies both on a domestic and international level that impact is no necessity to the company continuously update, improve performance, carry out various activities in order to remain afloat. Businesses focus on the performance of the company to obtain a financial return on the investment that has already been used. In fact that happened often these assumptions miss the mark and far from expectations. Companies that already conduct activities at a specific time sometimes have to be forced to liquidate due to funding difficulties and eventually bankruptcy. The threat of bankruptcy at a company can occur at any time for all types of companies including companies that move against the needs of the community. In case of liquidation of the company will certainly bring a negative impact to the company and the employees. If you do a thorough analysis at the macro level, this state will not cause a big problem, if the company do the analysis as early as possible to predict the bankruptcy. Bankruptcy prediction is used to give a picture, signs used to a leader as the person responsible for the performance of the company. Such predictions are projecting whether the company in good condition or will happen to financial problems. To that end, the company should perform the analysis as early as possible with a view on the financial statements of a company.

The financial statements are representative describing the progress of the company better than its management, once can see the situation in the future. These results can be used as starters to do the next activity (Brigham & Houston, 2006). With the results of the report, the manager can monitor and obtain the correct information in the monitoring of financial companies, both in the time past, and time is running. The results of the financial statements are used to determine the weaknesses of the company, so that they can anticipate the potential occurrence of bankruptcy.

One of the industry quite well to scrutiny is the retail industry, are experiencing a lot of the dynamics of the rate of increase of the consumer and the added cost. The increase was seen from increasing the amount of revenue of sales in some retail companies. At this time, an overview of the retail sector showed a picture of less good. This picture shows some of the department stores close down outlets that are caused because of the many competitors in serving the needs of the community. One among the department stores decreased consumers, because consumers tend to prefer consuming goods and services using the internet without leaving the home of on your next trip to the grocery store.

PT Hero Supermarket, Tbk is one of the modern enterprises involving the sale of goods or services to the consumers in the system unit or retail. Hero in the year 1989 has been listed on the stock exchange with the trademark HERO. A collection of Hero operates in four business units, namely Hero Supermarket, Giant, Guardian, and IKEA. PT Hero Supermarket Tbk compared to minus $7 billion throughout the nine months in the year 2019. This realization plunged dramatically compared to the achievements of the company in the period of the same year 2018, which the company still can gain profit up to Rp. 86,18 billion. The drop in profit for the year reached minus 107,8 percent. One of the causes of the slump in the company's profit is a decrease in revenue of 3.7 percent. The net income of the company during the third quarter of 2019 amounting to Rp. 9,49 trillion compared to the same period the year 2018 Rp. 9,85 trillion. Total sales decreased drastically because of the changes made to optimize the store in the food business. At the beginning of the year 2019, the company closed 26 stores and decide on the work's relationship to 532 employees. The closing of the outlets is done for efficiency sake of the survival of the business that long.

B. Problem Formulation

Based on the description above background, the Formulation of the Problem in this research is:

1. How the results of the prediction of the potential bankruptcy of the PT. Hero, Tbk in the Period 2016-2019 by using the model of Altman Z-Score ?
2. How the results of the prediction of the potential bankruptcy of the PT. Hero, Tbk in the Period 2016-2019 by using the model of Springate?

II. LITERATURE REVIEW

A. Analysis Of Financial Statements

Haryadi Sarjono stated that the report financial analysis as a way of analysis using the calculation and comparison of the above data the numbers that are displayed in the form of a balance sheet and income statement. While the ratio analysis shows a variety of relationships in between the posts of the selected data from the financial statements. The ratio shows the relationship mathematically between one quantity with the quantity of the other. This relationship can be expressed in the form of a percentage, rate, or proportion of a single. The ratio used as a guideline in evaluating a given situation and use of financial companies and do a comparison against the results from the previous year or against other companies.

B. Definition Of Bankruptcy

The term bankruptcy is often used in explaining the situation of the company experiencing financial difficulties (Karel Praskah, 2014). Next Supardi in Nafisatin (2014:2), states that bankruptcy is often interpreted to describe the failure of a company to operate the company for the purpose of benefit. From the above opinions, it can be concluded that bankruptcy can occur at the time the company failed to obtain the optimal profit in the conduct of operations of the company as well as are not able to pay off the liabilities operational due to limited.

C. The Method Of Altman Z-Score

Analysis Z-Score was introduced by Edward I Altman, this analysis is an analysis that connects the various ratios in the financial statements as the variables are then combined into the form of the equation to obtain the value of Z. The Z value here is the value to predict the condition of the company, whether the company is in good condition/healthy or not healthy/bankrupt.

D. Springate Methods

Methods Springate is developed by Gorgon L. V Springate in 1978. This Model follows the procedure model Altman, namely using step wise multiple analysis.

E. Previous Research

Prihanthini 2013) this Study was conducted to determine whether there is a difference in model Grover with model Altman Z-Score, model Grover with model Springate model Grover with a model of Zmijewski as well as to determine the bankruptcy prediction model that is most accurate. This study uses analysis tools technique test paired sample-test.

Achmada (2019) this Study was conducted to determine the analysis of the potential bankruptcy by using the model of Altman Z-Score, Springate, the Internal Growth Rate. This research was conducted on the perpetrators of the creative economy subsector fashion, namely PT. Matahari Department Store, Tbk. The results of the research stated that the company was categorized as a healthy company or not bankrupt.

Mandalurang (2019) this Study was conducted to determine how the number of industrial enterprises of retail trade in Indonesia that could potentially bankrupt by using the method of Altman Z-Score and Springate as well as the level consistency most accurate of the two models in predicting bankruptcy. The population in this study is 25 retail companies listed in the Indonesia Stock Exchange, while the sample of this research are 12 companies. The results stated that of the 12 sample companies, 4 companies could potentially bankrupt namely: PT. Catur Sentosa Adiprana Tbk (CSAP), PT. Mitra Adiperkasa Tbk (MAPI), PT.Midi Utama Indonesia Tbk (MIDI) and PT Matahari Putra Prima Tbk (MPPA). Based on the calculation of the standard deviation of the average, model Springate who has a level of accuracy higher, this is because the model of Springate is focus on the value of the current liabilities of a company.

III. RESEARCH METHODS
A. Population and Sample Study
The population in this research is Financial Statements. Hero, Tbk while the Research Sample is Financial Report PT. Hero, Tbk Period 2016-2019.

B. Data and Data Sources
The Data used in this research is secondary data from the Financial Statements of the company PT. Hero, Tbk, which was taken through the official website of the company.

C. Data Collection Techniques
The Data used in this research is quantitative, namely data in the form of numbers or quantitative data made into number. Data collection techniques used is the Technique of Literature (Library Research).

D. Testing Research Instruments
Testing in this research using the model of Altman Z-Score model and Springate.

E. Definition Of Operational Variables

F. Analysis Of Bankruptcy Models Altman Z-Score
Altman method using five types of financial ratios to predict the situation a describe the company went bankrupt or not bankrupt. Following the formula of such a method:
$Z = 1,2X1 + 1,4X2 + 3,3X3 + 0,6X4 + 1,0X5$
Where:
X1 = Working Capital/Total Assets
X2 = Retained Earning/ Total Assets
X3 = Earning Befor Interest and Tax/ Total Assets
X4 = Market Value of Equity/ Total Liabilities
X5 = Sales/ Total Assets

Table 1: Prediction Method Of Altman Z-Score

Score Z	Prediction
> 2,99	Not Bankrupt
< 1,81	Bankrupt
1,81 < Z < 2,99	Grey Area

Source : Peter et al (2011)

G. Analysis Bankrupcy Model Springate
Methods Springate using four ratios of nineteen ratios to predict companies that are in the situation of the bankrupt and not bankrupt. The following formula is:
$S = THE\ 1.03\ A + 3.07\ N\ /\ A\ B + 0,66\ C + 0,4\ D$
Where :
A = Working Capital/ Total Assets
B = Net Profit Interest and Tax/ Total Assets
C = Net Profit Before Tax/ Current Liability
D = Sales/ Total Assets

Table 2: Prediction Methods Springate

Score S	Prediction
> 0,862	Not Bankrupt
< 0,862	Bankrupt

Source : Peter et al (2011)

IV. RESULTS AND ANALYSIS
The analysis technique used by the method of Altman Z-Score Model and Springate using the following stages:

1. The analysis of the method of Altman Z-Score

Table 3: The Results Of The Calculation Method Of Altman Z-Score Years 2016-2019

Year	$1,2X_1$	$1,4X_2$	$3,3X_3$	$0,6X_4$	$1,0X_5$	Z	Prediksi
2016	0.138	0.422	0.094	1.559	1.858	4.070	Not Bankrupt
2017	0.087	0.366	-0.109	1.073	1.741	3.158	Not Bankrupt
2018	0.131	0.133	-0.669	0.851	2.107	2.554	Grey Area
2019	0.075	0.150	0.033	1.032	2.026	3.317	Not Bankrupt

Based on Table 3 above can be seen the Value of Z-Score in year 2016 of 4.070 declines in the years 2017 to be 3.158. Although decreased, but the condition of the company in the year 2016-2017 are conditioned healthy/ not go bankrupt. In the year 2018, the value of
Z-Score has decreased again to 2.554 located in the zone of the Grey Area. The value of Z-Score in the year 2019 increase back to 3.317 and the company back in a healthy condition/is not bankrupt. This is due to the decline in earnings in the years 2017 and 2018 are significant. Thus it is expected that the management can pay attention to the profit of the company.

2. Analysis Methods Springate

Table 4: The Results Of The Calculation Methods Of S-Score, Springate Years 2016-2019:

Year	Rasio				S	Prediksi
	1.03A	3.07B	0.66C	0.4D		
2016	0.118	0.087	0.070	0.743	1.019	Not bankrupt
2017	0.075	-0.101	-0.081	0.696	0.588	Potential Bankrupt
2018	0.112	-0.622	-0.379	0.843	-0.045	Potential Bankrupt
2019	0.064	0.031	0.020	0.811	0.925	Not bankrupt

Based on table 4 above, the value of the index of the bankruptcy of the resulting experience up and down. The value of S-Score in 2016 amounted to 1.019 is conditioned healthy/not go bankrupt. However, from 2017 to 2018 has decreased the value of the S-Score of 0.588 in the year 2017 to be -0.045 in the year 2018, which leads to the condition the company is in conditions of potential bankruptcy. 2019 Value of S-Score increased back to be 0.925 and the company is in a healthy condition/is not bankrupt. This is due to the decline in earnings in the years 2017 and 2018 are significant. Thus it is expected that the management can pay attention to the profit of the company.

V. CONCLUSION
1. The results of the analysis of the bankruptcy of PT. Hero Supermarket, Tbk based on the method of Altman Z-Score, in 2016, 2017, and 2019 produces the value Z-Score >2.99, is so that the company can be categorized as a company not bankrupt/ healthy companies. While in the year 2018 produces the value Z-Score = 1,81 < 2,554 < 2.99, a company is in the grey area.
2. The results of the analysis of the bankruptcy of PT. Hero Supermarket, Tbk based on the method Springate, in 2016 and 2019 to produce the value of S-Score more than 0,862 so that it can be categorized as a company not bankrupt/healthy. While in 2017 and 2018 to produce the value of S-Score less than 0,862, predict as bankrupt companies/the company is not healthy.

VI. REFERENCE

Altman, Edward I (1968) Financial Ratios: Discriminan Analysis and The Prediction of Coporate Bankruptcy. *Journal of Finance 23(4), pg. 589- 609.*

Achmada, Fahma, dkk (2020). Analisis Kebangkrutan Dengan Menggunakan Metode Altman Z-Score, Springate Dan Internal Growth Rate Pada Pelaku Ekonomi Kreatif Subsektor Fashion PT. Matahari Departemen Store Tbk Periode 2014-2018. 2019. *E-Jurnal Riset manajemen Prodi Manajemen Fakultas Ekonomi dan Bisnis Unisma.*

Brigham, Eugene F. and Joel F. Houston. (2006). *Fundamentals of Financial Management*, 10th edition. Thomson South-Western.

Darsono dan Ashari, (2010). *Pedoman Praktis Memahami Laporan Keuangan.* Penerbit:Andi. Edisi Pertama .Yogyakarta.

Kasmir (2008). *Analisis Laporan Keuangan*. Penerbit : Rajawali Pers.

Mandalurang, dkk (2019). Analisis Kebangrutan Dengan Menggunakan Metode Altman dan Springate Pada Industri Perdagangan Ritel Yang Terdaftar Di BEI Periode 2014-2018. *Jurnal EMBA. Vol.7.*

Peter & Yoseph. (2011). Analisis Kebangkrutan Dengan Metode Altman Z-Score, Springate dan Zmijewski Pada PT. Indofood Sukses Makmur Tbk Periode 2005-2009. *Jurnal Ilmiah Akuntansi, 2, 1-23*

Sarjono, Haryadi (2019). Analisis Laporan Keuangan Sebagai Alat Prediksi Kemungkinan Kebangkrutan dengan Model Diskriminan Altman pada Sepuluh Perusahaan Properti di Bursa Efek Jakarta. Jakarta.

Rahmatullah, Muhammad, dkk (2019). Analisis Laporan Keuangan Dengan Model Z-Score Sebagai Alat Dalam Memprediksi Bankcruptcy (Studi Kasus Pada PT. Ramayana Lestari Sentosa Tbk, PT. Matahari Putra Prima Tbk dan PT. Mitra Adiperkasa Tbk). *Jurnal Riset inspirasi Manajemen dan Kewirausahaan.*

Siska J (2013). Analisis Tingkat Kebangkrutan Dengan Menggunakan Metode Altman Z-Score, Springate dan Internal Growth Rate Pada PT. Bumi Resources Tbk Periode 2008-2012.