

PREDICTION OF FINANCIAL DISTRESS IN MANUFACTURING COMPANY: A COMPARATIVE ANALYSIS OF SPRINGATE MODEL AND FULMER MODEL

Raid Ayasy Shalih, Fariyana Kusumawati

Accounting Department, Faculty of Economics and Business, University of Trunojoyo Madura

Article Info:

Received: 23 Agustus 2019

in revised form: 24 September 2019

Accepted: 08 Oktober 2019

Available Online: 13 Januari 2020

Keywords:

Financial Distress, Springate Model, Fulmer Model

Corresponding Author:

Email: raiconayas@yahoo.com

Abstract; *This research aims to analyze the differences in financial distress predictions between the Springate model and the Fulmer model. The method used in this research is quantitative. The type of data used in this research is secondary data in the form BEI of company financial statements for 2014-2016. The data analysis technique uses the One Way ANOVA test. The results showed that there are significant differences between the Springate model and the Fulmer model in predicting financial distress in manufacturing companies listed on the Indonesia stock exchange during 2014-2016. The most relevant model in predicting financial distress in this study is the Springate model.*

Abstrak; Penelitian ini bertujuan untuk menganalisis *financial distress* dengan perbandingan model Springate dan model Fulmer. Penelitian ini menggunakan metode kuantitatif dengan data sekunder perusahaan manufaktur di BEI pada tahun 2014-2016. Penelitian ini menggunakan One-Way ANOVA test. Hasil penelitian menunjukkan bahwa adanya perbedaan yang signifikan antara model Springate dan Fulmer dalam memprediksi *financial distress* di perusahaan manufaktur. Hasil analisis menunjukkan bahwa Model Springate lebih relevan dalam memprediksi *financial distress*.

INTRODUCTION

The economic development requires companies to continue developing innovation, improving performance, and expanding their businesses in order to survive in the competition. The level of company skill is highly determined by its performance itself (Sumbodo, 2010). The company's performance can be measured by the profit generated, when the company can generate high profits, it is possible that it has a high cash flow as well so that it can operate smoothly and avoid financial distress or threat to its business continuity (Muflihah, 2017). The phenomenon of financial distress occurs if the companies are unable to survive because they make mistake in capturing the market opportunities or in strategy. As a result, the companies always experience a decrease in profit or loss, which eventually causes bankrupt. One example is the case of General Motor Indonesia (GMI) that was officially closed or declared bankrupt in 2015. GMI suffered a loss of USD 4 million every month since it began operating in 2013, bringing the total losses suffered by GMI until 2015 to reach USD 200 million (sindonews.com).

Financial statements can measure the prediction of company bankruptcy. The companies make financial statements and disclosures with the aim to provide useful information for decision making in investment and funding. Prediction of the company's survival is crucial for the management and company owners to anticipate the occurrence of financial distress that leads to bankruptcy measured through the analysis of financial statements in the form of financial ratios issued by the company (Sumbodo, 2010).

Analysis of the bankruptcy symptoms is necessary in order to anticipate bankruptcy in the future, therefore the researcher will examine the financial distress in the following year which is 2014-2016 in order to find out which companies that will experience distress and healthy companies (Adriana, 2012).

In predicting financial distress, the company needs a prediction tool or model to detect bankruptcy. The financial distress model needs to be developed to find out the state of the company's financial distress early, so that the company can take actions to anticipate conditions that lead to bankruptcy. Financial distress occurs before bankruptcy. Financial distress condition can be identified earlier by using a certain model (Rahayu, 2016).

Springate (1978) used 19 popular financial ratios in his research. However, after re-testing, he finally chose 4 ratios used in determining the criteria for companies that were included in the category of healthy companies or potentially bankrupt companies (Springate, 1978). Springate model in predicting bankruptcy potential has an accuracy rate of 92.5%.

Another model is Fulmer model which used the step-wise multiple discriminant analysis method to evaluate 40 financial ratios applied to a sample of 60 companies. According to Fulmer, 30 companies had failed and the other 30 companies had succeeded. Fulmer model reports an accuracy rate of 98% to the company one year before it fails and an accuracy rate of 81% more than one year before bankruptcy, there are 9 ratios in Fulmer model.

Some previous research showed different results in analyzing the prediction of bankruptcy within a company, including a research conducted by Lukman & Ahmar (2015) which stated that there were differences in the prediction results of financial distress determination. Calculations using the Fulmer h-score model showed that most mining companies in 2011-2014 indicated bankruptcy of 26.35% and 73.65% of the companies were predicted as healthy company.

Research conducted by Rahmadani (2015) showed the results of the processing and analysis of financial data in 2011-2015 by using three bankruptcy prediction models. Here, Fulmer and Springate predicted PT. Bank Ekonomi Raharja went bankrupt during this period, while Altman method predicted PT. Bank Ekonomi Raharja to be in "gray area" category. In addition, the level of conformity between bankruptcy prediction and auditor opinion was only 20%, and this was in accordance with conditions that had been delisted from the stock exchange.

Ambarwati et al (2016) in their research concluded that there were differences in the determination of financial distress predictions. Altman Z-Score in 2013 and 2015 predicted bankruptcy while in 2014 predicted in the gray area. Meanwhile, Springate

model in 2013-2015 predicted bankruptcy since it was below the company's health value criteria. According to Zmijewski in 2013-2015, it was healthy with negative results. According to Fulmer in 2013 and 2014, it experienced a healthy condition but in 2015 it experienced a bankrupt condition.

Research done by Fanny (2017) stated that there were differences in Altman, Springate, and Zmijewski prediction models in predicting financial distress conditions in plantation companies listed on the Indonesia Stock Exchange during 2012-2014 period. The results of subsequent research found that Zmijewski model had an accuracy rate of 82% while Altman model and Springate model had an accuracy rate of 55% and 45%, respectively.

Research conducted by Priambodo (2017) concluded that there were significant differences between Altman, Springate, Grover, and Zmijewski models in predicting financial distress, and the highest level of accuracy was achieved by Springate model with an accuracy rate of 84.21%.

Research performed by Kusumaningtyas (2017) revealed that each model, which were Zmijewski, Springate, and Fulmer, obtained the same or different results regarding the prediction of an unhealthy company in a financial statement at a certain period. In general, the samples were 17 companies and Zmijewski model was able to predict 29.41% of the occurrence of unhealthy companies, while Springate model and Fulmer model were able to predict of unhealthy companies by 41.18% and 17.65%, respectively.

Based on several previous research, Springate model and Fulmer model were the strongest models in predicting financial distress from various financial distress prediction models such as Altman, CA-score, Zmijewski, and others whose levels of accuracy were lower. This statement was also mentioned by Kasingilam and Ramasundaram (2012) who said that Springate model and Fulmer H-score model could be used in predicting company bankruptcy by reporting higher levels of accuracy than other models such as Altman, CA-score, Zmijewski, and others whose levels of accuracy were lower. Thus, this research aims to conduct a comparative analysis of Springate model and Fulmer model of financial distress predictions in manufacturing companies on Indonesia Stock Exchange (IDX).

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Teori Signal

Signaling theory is a theory that reveals that the company gives signals to the users of financial statements. The most awaited information from external parties is in the form of good news. This theory states that good quality companies will give signals intentionally to the market, so the market is expected to be able to distinguish the company quality (Hartono, 2005: 38).

According to Hanafi (2014) financial distress can be described from two extreme points of short-term liquidity problems to insolvable. Indicators of financial difficulties can be seen from the analysis of cash flow, analysis of company strategies, and company's financial statements. Financial distress can be interpreted as the emergence of early signals or symptoms of bankruptcy on the decline in financial conditions experienced by a company, or conditions that occur before bankruptcy or liquidation. If a company cannot maintain its survival, it will go bankrupt. Bankruptcy can be seen from the flow approach and stock approach (Hanafi, 2014: 638).

Prediction of Financial Distress

Springate (1978) carried out a research to find a model that could be used in predicting the potential (indication) of bankruptcy. He used 19 popular financial ratios which could be used to predict financial distress. He finally found 4 ratios that could be used in predicting the potential (indication) of bankruptcy which had an accuracy of up to 92.5%. He classified a company as bankrupt if it had a score of less than 0.862 ($S < 0.862$). Conversely, if the S-Score calculation results exceeded or equal to 0.862 ($S \geq 0.862$), the company was classified as a financially healthy company. Fulmer 1984 used

the step-wise multiple discriminant analysis method. This model reported an accuracy rate of 98% to the company one year before it failed and an accuracy rate of 81% more than one year before bankruptcy. This model describes the following formula:

Differences in the Results of Prediction of Financial Distress between Springate Model and Fulmer Model

Springate Model and Fulmer Model are models that can predict company bankruptcy in the future and can serve as an early warning for management to re-evaluate the company's financial performance when bankruptcy is identified. This test works to determine whether there are statistical differences between Springate model and Fulmer model so that it finds the best prediction model between the two models in predicting the company's level of financial difficulty. It is related to signaling theory, which is an action taken by the company to give a signal (information) to investors about how management views the company's prospects. The information released by large companies affects the investment decisions of the parties outside the company (Brigham and Houston, 2001).

Signaling theory also can help companies (agents), owners (principals), and external parties to reduce information asymmetry by producing the quality or integrity of financial statement information. In ensuring that the interested parties believe the reliability of financial information submitted by the company (agent), the company needs to get an opinion from other parties who are free to give opinions about financial statements. Management must be open or transparent in presenting the company's financial statements. In the financial statements, it will be known whether the company is in good health or experiences financial distress (Jama'an, 2008).

RESEARCH METHODOLOGY

The method used in this research was quantitative. The type of data used in this research was secondary data, namely financial statements in the form of balance sheets and income statements of each company from 2014 to 2016 in manufacturing industry companies listed on the Indonesia Stock Exchange. The hypothesis in this research was tested using One Way ANOVA. Ghozali (2013) explains the terms of testing the assumptions of normality and homogeneity before ANOVA testing.

FINDINGS AND DISCUSSION

Results of Normality Test

Figure 1. Results of Normality Test

MODEL	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	df	Sig
Prediksi <u>SPRINGATE</u>	0.155	18	0.200	0.944	18	0.334
FULMER	0.252	18	0.004	0.838	18	0.006

Based on Figure 1 above, the results of normality testing on each financial distress prediction model on manufacturing companies listed on the Indonesia Stock Exchange during the 2014-2016 period showed that the significance results for Springate model had a value of 0.200 which meant $0.200 > 0.05$, so this model had normally distributed data in predicting financial distress. Fulmer model had a value of 0.004 which meant $0.004 < 0.05$, so this model had abnormally distributed data in predicting financial distress.

Results of Homogeneity Test

Figure 2. Results of Homogeneity Test

Levene Statistic	df1	df2	Sig.
4.178	1	34	0.049

Figure 2 above showed the significance value of 0.05. Although the assumption of homogeneity was not fulfilled, Ghozali (2013) stated that ANOVA could still be used because ANOVA was robust for small and moderate deviations from homogeneity of variance.

Figure 3. Results of one way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	41.950	1	41.950	28.185	0.000
Within Groups	50.606	34	1.488		
Total	92.556	35			

Based on the results of one way ANOVA test, the significance value produced a value of 0,000 < 0.05, thus H_a was accepted and it could be said that there were differences in financial distress predictions between Springgate model and Fulmer model. The results of the research were in the form of a detailed explanation and comparison of the status set by Springgate model and Fulmer model with a sample of 18 manufacturing companies during 2014-2016, as follows:

Figure 4. Results of prediction of Springgate model and Fulmer model in 2014

NO	PERUSAHAAN	SPRINGATE		FULMER		KET
		S-SCORE	KRITERIA	H-SCORE	KRITERIA	
1	AKPI	0,533269715	DISTRESS	2,932933072	SEHAT	BEDA
2	ALDO	0,729806106	DISTRESS	2,493240055	SEHAT	BEDA
3	ALKA	2,255439256	SEHAT	2,106777239	SEHAT	T BEDA
4	APLI	1,193419645	SEHAT	3,671519267	SEHAT	T BEDA
5	BUDI	0,471249134	DISTRESS	2,550444413	SEHAT	BEDA
6	CEKA	1,609679446	SEHAT	3,719083266	SEHAT	T BEDA
7	INAI	0,625120024	DISTRESS	2,196176699	SEHAT	BEDA
8	KBLM	0,773235042	DISTRESS	2,706802841	SEHAT	BEDA
9	KICI	1,742809939	SEHAT	9,142930972	SEHAT	T BEDA
10	LMPI	0,3832936	DISTRESS	1,162481653	SEHAT	BEDA
11	LMSH	2,009831663	SEHAT	8,57802903	SEHAT	T BEDA
12	PYFA	0,377581042	DISTRESS	1,772829392	SEHAT	BEDA
13	RICY	0,666803255	DISTRESS	2,536586486	SEHAT	BEDA
14	SKLT	1,219725821	SEHAT	2,50192899	SEHAT	T BEDA
15	SRSN	1,329652949	SEHAT	3,655758768	SEHAT	T BEDA
16	TIRT	0,665523724	DISTRESS	1,232178221	SEHAT	BEDA
17	TRIS	1,411175973	SEHAT	3,065680333	SEHAT	T BEDA
18	UNIT	-0,127533747	DISTRESS	1,789340995	SEHAT	BEDA

Based on Figure 4 it could be concluded that from 2014 the results of differences in the determination of bankruptcy status using Springgate s-score model and Fulmer h-score model showed that there were 10 different companies or 55.55% difference from 54 research samples. Furthermore, the results of the similarity in the determination of the bankruptcy status in 2014 using Springgate s-score model and Fulmer h-score model contained 8 same companies or 44.45% of 54 research samples.

Figure 5. Results of prediction of Springate model and Fulmer model in 2015

		Cut off Springate > 0,862 = Sehat Cut off Springate < 0,862 = Distress		Cut off Fulmer H > 0 = Sehat Cut off Fulmer H < 0 = Distress		
NO	PERUSAHAAN	SPRINGATE		FULMER		KET
		S-SCORE	KRITERIA	H-SCORE	KRITERIA	
1	AKPI	0,37938251	DISTRESS	2,333781068	SEHAT	BEDA
2	ALDO	1,15539113	SEHAT	2,895026514	SEHAT	T BEDA
3	ALKA	2,09207668	SEHAT	1,193609203	SEHAT	T BEDA
4	APLI	0,42434566	DISTRESS	2,438047786	SEHAT	BEDA
5	BUDI	0,36381133	DISTRESS	2,59522185	SEHAT	BEDA
6	CEKA	1,64998416	SEHAT	4,405139949	SEHAT	T BEDA
7	INAI	0,59034499	DISTRESS	2,469900225	SEHAT	BEDA
8	KBLM	0,76452464	DISTRESS	2,840761423	SEHAT	BEDA
9	KICI	0,94302978	SEHAT	1,141299271	SEHAT	T BEDA
10	LMPI	0,38625901	DISTRESS	1,187295573	SEHAT	BEDA
11	LMSH	1,43881057	SEHAT	9,208071245	SEHAT	T BEDA
12	PYFA	0,94767037	SEHAT	3,538557294	SEHAT	T BEDA
13	RICY	0,56344977	DISTRESS	2,726097359	SEHAT	BEDA
14	SKLT	1,16944697	SEHAT	2,708914789	SEHAT	T BEDA
15	SRSN	1,29439077	SEHAT	2,997858364	SEHAT	T BEDA
16	TIRT	0,50654048	DISTRESS	1,16848007	SEHAT	BEDA
17	TRIS	1,37400555	SEHAT	3,412916422	SEHAT	T BEDA
18	UNIT	-0,1040203	DISTRESS	1,855253553	SEHAT	BEDA

Based on Figure 5 it could be concluded that from 2015, the results of differences in the determination of bankruptcy status using Springate s-score model and Fulmer h-score model showed that there were 9 different companies or 50% difference from 54 research samples. Furthermore, the results of the similarity in the determination of the bankruptcy status in 2015 using Springate s-score model and Fulmer h-score model contained 9 same companies or 50% of 54 research samples.

Figure 6. Results of prediction of Springate model and Fulmer model in 2016

		Cut off Springate > 0,862 = Sehat Cut off Springate < 0,862 = Distress		Cut off Fulmer H > 0 = Sehat Cut off Fulmer H < 0 = Distress		
NO	PERUSAHAAN	SPRINGATE		FULMER		KET
		S-SCORE	KRITERIA	H-SCORE	KRITERIA	
1	AKPI	0,506288	DISTRESS	4,305925	SEHAT	BEDA
2	ALDO	1,566347	SEHAT	2,511001	SEHAT	T BEDA
3	ALKA	3,342013	SEHAT	2,078576	SEHAT	T BEDA
4	APLI	1,276203	SEHAT	3,581159	SEHAT	T BEDA
5	BUDI	0,397712	DISTRESS	2,693854	SEHAT	BEDA
6	CEKA	2,577112	SEHAT	5,922911	SEHAT	T BEDA
7	INAI	0,558586	DISTRESS	2,329552	SEHAT	BEDA
8	KBLM	1,006445	SEHAT	10,84108	SEHAT	T BEDA
9	KICI	0,798308	DISTRESS	0,954379	SEHAT	BEDA
10	LMPI	0,317119	DISTRESS	1,402781	SEHAT	BEDA
11	LMSH	1,138028	SEHAT	6,126028	SEHAT	T BEDA
12	PYFA	1,050292	SEHAT	3,51985	SEHAT	T BEDA
13	RICY	0,551228	DISTRESS	2,708567	SEHAT	BEDA
14	SKLT	0,917806	SEHAT	2,297139	SEHAT	T BEDA
15	SRSN	0,585161	DISTRESS	2,763219	SEHAT	BEDA
16	TIRT	0,68088	DISTRESS	1,44175	SEHAT	BEDA
17	TRIS	1,197502	SEHAT	2,74863	SEHAT	T BEDA
18	UNIT	-0,03767	DISTRESS	1,665659	SEHAT	BEDA

Based on Figure 6 it could be concluded that from 2016 the results of the difference in the determination of bankruptcy status using Springate s-score model and Fulmer h-score model contained 9 different companies or 50% difference from 54 research samples. Furthermore, the results of the similarity in the determination of bankruptcy status in 2016 using Springate s-score model and Fulmer h-score model contained 9 same companies or 50% of 54 research samples.

Figure 7. Average of Results of prediction of Springate model and Fulmer model in 2014-2016

Cut off Springate > 0,862 = Sehat Cut off Springate < 0,862 = Distress			Cut off Fulmer H > 0 = Sehat Cut off Fulmer H < 0 = Distress			
NO	PERUSAHAAN	SPRINGATE		FULMER		KET
		S-SCORE	KRITERIA	H-SCORE	KRITERIA	
1	AKPI	0,472980063	Distress	3,190879696	Non Distress	BEDA
2	ALDO	1,150514826	Non Distress	2,633089139	Non Distress	T BEDA
3	ALKA	2,563176346	Non Distress	1,792987463	Non Distress	T BEDA
4	APLI	0,964656148	Non Distress	3,230242121	Non Distress	T BEDA
5	BUDI	0,410924096	Distress	2,613173582	Non Distress	BEDA
6	CEKA	1,945591885	Non Distress	4,682378156	Non Distress	T BEDA
7	INAI	0,591350227	Distress	2,331876298	Non Distress	BEDA
8	KBLM	0,848068235	Distress	5,462880029	Non Distress	BEDA
9	KICI	1,161382462	Non Distress	3,746202951	Non Distress	T BEDA
10	LMPI	0,362223956	Distress	1,250852679	Non Distress	BEDA
11	LMSH	1,528890157	Non Distress	7,970709565	Non Distress	T BEDA
12	PYFA	0,791847898	Distress	2,943745607	Non Distress	BEDA
13	RICY	0,593826852	Distress	2,657083632	Non Distress	BEDA
14	SKLT	1,10232642	Non Distress	2,502660983	Non Distress	T BEDA
15	SRSN	1,069735024	Non Distress	3,138945394	Non Distress	T BEDA
16	TIRT	0,617647903	Distress	1,280802755	Non Distress	BEDA
17	TRIS	1,32756124	Non Distress	3,0757422	Non Distress	T BEDA
18	UNIT	-0,089739838	Distress	1,770084435	Non Distress	BEDA

Based on Figure 7 it could be concluded that from 2014-2016 the results of the difference in the determination of bankruptcy status using Springate s-score model and Fulmer h-score model contained 9 different companies or 50% difference from 54 research samples. Furthermore, the results of the similarity in the determination of bankruptcy status in 2014-2016 using Springate s-score model and Fulmer h-score model contained 9 different companies or 50% of 54 research samples.

Figure 8. Results of Comparison of Bankruptcy Status for 2014-2016 Period

Tahun	Prediksi	Springate	Fulmer
2014	Distress	10	-
	Non Distress	8	18
2015	Distress	9	-
	Non Distress	9	18
2016	Distress	9	-
	Non Distress	9	18

Figure 8 showed the results that there were differences in bankruptcy status between Springate model and Fulmer model, and it could be seen from the number of companies experiencing distress and non-distress (healthy) of the two models. During 2014-2016, the differences in the bankruptcy status could be seen by comparing the two models in each research period.

This research was in line with the research by Ambarwati (2016), Lukman & Ahmar (2015), and Rahmadani (2015). Research conducted by Ambarwati (2016) entitled "*Financial distress dengan Metode Springate, Zmijewski, Fulmer, dan Altman Z-Score pada PT Tunas Baru Lampung TBK di BEP*" showed results that there were differences in financial distress predictions between Zmijewski, Springate, Fulmer, and Altman models. Research conducted by Lukman & Ahmar (2015) entitled "*Model Prediksi Kebangkrutan Fulmer H-Score dan Springate: Mana yang Lebih Kuat?*" revealed results that there were differences in financial distress predictions between Fulmer model and Springate model. Research conducted by Rahmadani (2015) entitled "*Analisis Kesesuaian Prediksi Kebangkrutan Model Altman Z-Score, Fulmer Dan Springate Terhadap Opini Auditor Pada Perusahaan Delisting tahun 2015*" unveiled results that there were differences between Altman, Fulmer, and Springate models. During 2014-2016 by using Springate s-score model, the number of companies in a distress (unhealthy) condition and indicating bankruptcy was 51.85% and the number of healthy companies was 48.15% from observations of 54 research samples. Fulmer h-score model showed that 100% of the 54 companies were indicated as healthy companies.

Springate model and Fulmer model showed different results. This was caused by differences in financial ratios used by each model. In 2014-2016, it showed that the average score for Springate s-score model was 0.97 and 3.13 for Fulmer model. This showed that the theory produced by each model was very distinctive in determining the company's bankruptcy status. In addition, there were also differences in measurement

values that had been set by each model.

Springate Model used ratio analysis to measure the performance, leverage, and liquidity of a company as follows $S = 1.03 \text{ WCTA} + 3.07 \text{ ROTA} + 0.66 \text{ EBITCL} + 0.4 \text{ TATO}$. Springate model was measured by cut off, if Springate value was greater than 0.862 then the company was included in healthy company category and if Springate value was smaller than 0.862, the company was included in unhealthy was included in or had the potential to go bankrupt. In contrast, Fulmer model used the following this formula $H = 5.528 \text{ RETA} + 0.212 \text{ TATO} + 0.073 \text{ ROCE} + 1.270 \text{ CFTD} - 0.120 \text{ DR} + 2.335 \text{ CLTA} + 0.575 \text{ LOG (FA)} + 1.083 \text{ WCTA} + 0.894 \text{ LOG ICR} - 6,075$. Fulmer model was measured by its analysis criteria, if $H < 0$ it was predicted that the company experienced bankruptcy or unhealthy company condition. If $H > 0$ it was predicted that the company was in a good or healthy condition.

This research results revealed that between Springate model and Fulmer model, the most relevant model in predicting financial distress was Springate model. As shown in table 4.10, Springate model could predict financial distress in companies during the research period, while Fulmer model was less accurate in predicting the financial distress.

This research was in line with the research of Priambodo's (2017) and Kusumaningtyas (2017). Research conducted by Priambodo (2017) entitled "*Analisis Perbandingan Model Altman, Springate, Grover, dan Zmijewski Dalam Memprediksi Financial Distress (Studi Empiris Pada Perusahaan Sektor Pertambangan Yang Terdaftar Di Bursa Efek Indonesia Periode 2012-2015)*" stated that the most relevant financial distress prediction model was Springate model. Research conducted by Kusumaningtyas (2017) entitled "*Analisis Prediksi Kebangkrutan Dengan Menggunakan Model Zmijewski, Springate dan Fulmer Pada Perusahaan Ritel Di Bursa Efek Indonesia*" stated that the most relevant financial distress prediction model was Springate model.

It is related to signaling theory which is an action taken by a company to give signals (information) to investors about how management views the company's prospects (Brigham and Houston, 2001). Signaling theory suggests how companies should give signals to the users of financial statements (Wolk, 2001). The information is in the form of published corporate bond rank and is expected to be a signal of the financial condition of a particular company and illustrates the likelihood of the debts owned (Maria, 2006).

Signaling theory states that a good quality company will give signal intentionally to the market, so the market is expected to be able to distinguish the company quality. However if the company experiences small or large decline in the profit or cash flow, it can lead to doubt in investment since there will be financial distress in the company (Hartono, 2005: 38).

In ensuring that the interested parties believe the reliability of financial information submitted by the company (agent), the company needs to get an opinion from other parties who are free to give opinions about financial statements. Management must be open or transparent in presenting the company's financial statements. In the financial statements, it will be known whether the company is in good health or experiencing financial distress (Jama'an, 2008).

CONCLUSION AND SUGGESTIONS

Based on the research related to the differences between Springate model and Fulmer model in predicting financial distress in manufacturing companies listed on the Indonesia stock exchange during 2014-2016, it showed that there were significant differences between Springate model and Fulmer model in predicting financial distress in manufacturing companies listed on the Indonesia stock exchange during 2014-2016. The differences between Springate Model and Fulmer model were caused by differences in the financial ratios used by each model as well as differences in value measurement that had been set by each model. The most relevant model in predicting financial distress in this research was Springate model. There were several limitations in this research including the limited data with low profit margins. Future research can expand the number of samples/data to be used and consider other financial distress prediction models, such as Zmijewski, Altman, Grover, and others.

REFERENCES

- Adnan, Muhammad A dan Taufik, Muhammad I. 2005. *Analisis Ketepatan Prediksi Metode Altman Terhadap Terjadinya Likuiditas Pada Lembaga Perbankan*. Jurnal Ekonomi dan Auditing. Vol. 5. No 2 Desember. Yogyakarta: Fakultas Ekonomi Universitas Islam Indonesia
- Adriana, A.N. dan Rusli. 2012. *Analisis Prediksi Kebangkrutan Menggunakan Metode Springate Pada Perusahaan Foods And Beverages Yang Terdaftar Di Bursa Efek Indonesia Periode 2006-2010*. Jurnal Repository. FE Universitas Riau.
- Agusti, Chalendra P. 2013. *Analisis Faktor yang Mempengaruhi Kemungkinan Terjadinya Financial Distress*. Universitas Diponegoro.
- Ambarwati, Umi et al. 2016. *Financial Distress Dengan Metode Springate, Zmijewski, Fulmer Dan Altman Z-Score Pada Pt Tunas Baru Lampung Tbk Di Bei*. Jurnal Fakultas Ekonomi Universitas Islam Batik Surakarta.
- Bahri, Syaiful. 2016. *Pengantar Akuntansi*. Yogyakarta: CV. Andi Offset.
- Bambang, Riyanto. 2008. *Dasar-dasar Pembelanjaan Perusahaan*. Yogyakarta: Penerbit GPFE.
- Brigham, E. F. and Daves, P. R. (2003) *Intermediate Financial Distress Management With Thomson One*. United States of America: Cengage South-Western.
- Brigham, Eugene dan Joel F Houston, 2001. *Manajemen Keuangan II*. Jakarta: Salemba Empat.
- Emrinnaldi. 2007. *Analisis Pengaruh Praktek Tata Kelola Perusahaan (Corporate Governance) Terhadap Kesulitan Keuangan Perusahaan (Financial Distress): Suatu Kajian Empiris*. Jurnal Bisnis dan Akuntansi, Vol. 9, No. 1.
- Fanny, Triesie A. 2017. *Analisis Perbandingan Model Prediksi Financial Distress pada Sub Sektor Perkebunan*. Jurnal Ilmu dan Riset Akuntansi. Vol. 6. No. 6. Juni 2017.
- Fulmer, J. G. Jr., Moon, James E., Gavin, Thomas A., Erwin, Michael J. 1984. *A Bankruptcy Classification Model For Small Firms*. Journal of Commercial Bank Lending, 25-37.
- Gendro, Wiyono. 2011. *Merancang Penelitian Bisnis dengan Alat Analisis SPSS 17.0 & Smart PLS 2.0*. Yogyakarta: Percetakan STIM YKPM.
- Ghozali, Imam. 2013. *Aplikasi Analisis Multivariate dengan Program SPSS*. Edisi Ketujuh. Semarang: Badan Penerbit Universitas Diponegoro.
- Hanafi, Mamduh M. 2014. *Manajemen Keuangan*. Edisi 1. Yogyakarta :BPFE.
- Hanafi, Mamduh M., dan Abdul Halim. 2016. *Analisis Laporan Keuangan*. UPP STIM YKPN, Yogyakarta.
- Hartono. 2005. *Hubungan Teori Signalling dengan Underpricing Saham Perdana di Bursa Efek Jakarta*. Jurnal Bisnis dan Manajemen. 5 (1). hal. 35-50.
- Jama'an. 2008. *Pengaruh Mekanisme Corporate Governance dan Kualitas Kantor Akuntan Publik Terhadap Integritas Informasi Laporan Keuangan (Studi Pada Perusahaan Publik Di BEJ)*. Tesis Strata-2. Program Studi Magister Sains Akuntansi. Universitas Diponegoro, Semarang.
- Kusumaningtyas, Dega. 2017. *Analisis Prediksi Kebangkrutan Dengan Menggunakan Model Zmijewski, Springate Dan Fulmer Pada Perusahaan Ritel Di Bursa Efek Indonesia*. Artikel Ilmiah: Sekolah Tinggi Ilmu Ekonomi Perbanas. Surabaya.
- Lukman, M dan Ahmar, N. 2015. *Model Prediksi Kebangkrutan Fullmer H-Score Dan Springate: Mana Yang Lebih Kuat?*. Seminar Nasional Cendekiawan: 2015.
- Peter dan Yoseph. (2011). *Analisis Kebangkrutan Dengan Metode Z-Score Altman*,

- Springate dan Zmijewski Pada PT. Indofood Sukses Makmur Tbk Periode 2005-2009*. Jurusan Manajemen, Universitas Kristen Maranatha. Akurat Jurnal Ilmiah Akuntansi Nomor 04 Tahun ke-2 Januari-April 2011.
- Priambodo, Dimas. 2017. *Analisis Perbandingan Model Altman, Springate, Grover, Dan Zmijewski Dalam Memprediksi Financial Distress (Studi Empiris Pada Perusahaan Sektor Pertambangan Yang Terdaftar Di Bursa Efek Indonesia Periode 2012-2015)*. Jurnal Akuntansi Fakultas Ekonomi Universitas Negeri Yogyakarta
- R, K., & G, R. 2012. *Predicting Solvency of Non Banking Financial Institutions in India Using Fulmer and Springate Model*. Journal of Services Research Vol. 2 No. 1.
- Rahayu, Putri. 2016. *Analisis Penggunaan Metode Springate (S-Score) Sebagai Prediktor Kebangkrutan (Studi pada Perusahaan Textile yang Terdaftar di Bursa Efek Indonesia pada Tahun 2011-2013)*. Jurnal Ekonomi dan Bisnis Universitas Muhammadiyah Surakarta.
- Rahmadani, Anissa A. 2015. *Analisis Kesesuaian Prediksi Kebangkrutan Model Altman Z-Score, Fulmer Dan Springate Terhadap Opini Auditor Pada Perusahaan Delisting tahun 2015*. Jurnal Ekonomi dan Bisnis Islam: Vol. 1. No. 2
- Restuti, Maria Immaculata. 2006. *Pengaruh Pertumbuhan Perusahaan Terhadap Peringkat Obligasi Dan Yield Obligasi*. Jurnal Akuntansi dan Keuangan, Volume 1 No 3, 2007.
- Springate, Gordon L.V. 1978. *Predicting The Possibility of Failure in a Canadian Firm*. Unpublished Master Thesis. Simon Fraser University. January 1978.
- Sumbodo, Joko. 2010. *Perbandingan Model Diskriminan Dan Model Logit Untuk Memprediksi Financial Distress Perusahaan Manufaktur Di Bei*. Universitas Sebelas Maret. Surakarta.
- Sarwono, Jonathan. 2009. *Memadu Pendekatan Kuantitatif dan Kualitatif: Mungkinkah?*. Jurnal Ilmiah Manajemen bisnis. Vol 9, No. 2. Mei 2009: 119-132.
- Wolk, et al 2001. *Signaling, Agency Theory, Accounting Policy Choice*. Accounting and Business Research. Vol. 18. No 69:47-56.
- <https://ekbis.sindonews.com/read/1085897/39/perusahaan-besar-bangkrut-di-indonesia-1455640928> (Retrieved on July 20, 2018, at 20:00)
- www.idx.co.id (Retrieved on July 17, 2018, at 19:00)