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TAS EKONOMI DAN



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About Madic 8 2023

Management Dynamics Conference (MADIC) ke-8 adalah seminar nasional yang diselenggarakan oleh Fakultas Ekonomi dan Bisnis Universitas Hasanuddin bekerja sama dengan Forum Pengelola Jurnal Manajemen (FPJM). Tema seminar “*Penguatan Manajemen UMKM sebagai Motor Penggerak Pemulihan Ekonomi Nasional*”. Konferensi ini bertujuan untuk menghimpun berbagai pandangan dan pengalaman empiris dari para praktisi dan akademisi ekonomi mengenai penguatan UMKM sebagai pilar ekonomi utama serta memberikan solusi untuk tujuan ketahanan keberlanjutan (SDGs) Indonesia. Para akademisi, praktisi, peneliti telah berkontribusi dalam pengembangan penelitian manajemen dengan berpartisipasi dalam MADIC 8.

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Sambutan Dekan Fakultas Ekonomi dan Bisnis Universitas Hasanuddin

Selamat datang di Management Dynamics Conference (MADIC) ke-8 diadakan pada tanggal 16 – 17 maret 20223 di Makassar, Indonesia. Konferensi ini diselenggarakan untuk mempromosikan diskusi antara berbagai pemangku kepentingan tentang, manajemen dan bidang ekonomi. Kali ini, Fakultas Ekonomi dan Bisnis, Universitas Hasanuddin menjadi tuan rumah bekerja sama dengan Forum Pengelola Jurnal Manajemen (FPJM). Melanjutkan tradisi menyatukan penelitian, pembuat kebijakan, akademisi dan berbagai pemangku kepentingan untuk mempresentasikan dan mendiskusikan isu terkini terkait perkembangan ekonomi nasional. Untuk memperkuat pembahasan tentang manajemen, ekonomi dan bidang akuntansi, kami sepakat mengangkat topik konferensi tahun ini berjudul “*Penguatan Manajemen UMKM sebagai Motor Penggerak Pemulihan Ekonomi Nasional*”. Untuk memberikan informasi terbaru mengenai topik kepada pembaca dan peserta, kami ingin menyampaikan apresiasi dan terima kasih kepada 3 narasumber dihadirkan dalam acara ini yaitu M. Fankar Umran CEO BRI Insurane, Causa Iman Karana Kepala Perwakilan Bank Indonesia Provinsi Sulawesi Selatan, dan Darwisman Kepala OJK Regional Sulampapua atas wawasan dan dukungan mereka selama konferensi. Kami berharap acara ini sangat mendorong diskusi tentang peningkatan kualitas UMKM di Indonesia. Selain itu kami ingin menyampaikan terima kasih dan dukungan kami kepada

Terakhir, kami ingin mengucapkan terima kasih sekali lagi atas kontribusi dan kerja sama yang sangat baik di antara kami para peserta konferensi. Selain itu, kami mengucapkan terima kasih atas kerjasama semua pihak panitia dalam menyelenggarakan konferensi. Kami berharap dapat bekerja sama dengan semua pemangku kepentingan yang terlibat dalam acara ini. Kami berharap proses ini akan menyediakan berbagai manuskrip unggulan yang dapat memberikan kontribusi besar dalam bidang ekonomi, manajemen dan akuntansi.

Prof.Dr.Abd. Rahman Kadir, M.Si., CIPM
Dekan Fakultas Ekonomi dan Bisnis
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Sambutan Ketua panitia Management Dynamic Conference ke - 8

Saya sangat senang bahwa acara Management Dynamic Conference ke-8 dengan tema "Penguatan Manajemen UMKM sebagai Motor Penggerak Pemulihan Ekonomi Nasional" telah terlaksana dengan sukses. Semoga acara ini memberikan banyak manfaat dan inspirasi bagi semua peserta yang hadir.

Saya ingin mengucapkan selamat dan mengapresiasi seluruh panitia yang telah bekerja keras dan dedikasi tinggi dalam menyelenggarakan acara ini. Tanpa upaya mereka, acara ini tidak akan mungkin terwujud. Terima kasih atas kerja keras dan komitmen yang telah diberikan.

Selain itu, saya juga ingin mengucapkan terima kasih kepada narasumber yang telah berbagi pengetahuan dan pengalaman mereka dalam mendukung penguatan manajemen UMKM. Kontribusi mereka sangat berharga dan saya berharap peserta dapat mengambil manfaat yang besar dari presentasi dan diskusi yang telah dilakukan.

Saya berharap bahwa acara ini menjadi awal dari langkah-langkah konkret dalam memperkuat sektor UMKM sebagai motor penggerak pemulihan ekonomi nasional. Mari kita terus bekerja sama, berinovasi, dan berkolaborasi dalam mendukung pertumbuhan UMKM dan memajukan ekonomi kita.

Terima kasih kepada semua yang telah berpartisipasi dalam acara ini, termasuk peserta, narasumber, dan semua pihak yang telah memberikan dukungan. Semoga kita dapat melanjutkan semangat dan energi positif ini untuk memperkuat sektor UMKM dan membangun ekonomi yang lebih kuat.

Sekali lagi, selamat atas kesuksesan acara Management Dynamic Conference ke-8. Semoga langkah-langkah yang dihasilkan dari acara ini dapat memberikan dampak yang positif bagi penguatan manajemen UMKM dan pemulihan ekonomi nasional.

Insany Fitri Nurqamar, S.E.,M.M.

Ketua panitia Management Dynamic Conference ke - 8
Universitas Hasanudin

ANALYSIS OF FINANCIAL STATEMENTS AS A PREDICTION TOOL FINANCIAL DISTRESS (Company Case Study Go Public Coal Mining)

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Abstract

This study aimed to determine the level of bankruptcy of the Company by using Altman Z-Score and Springate Score model analysis on Coal Mining Company Listing in Indonesia Stock Exchange. Because the Coal Mining Company has a significant role in the Indonesian Economy. The data used in this study is the annual financial statements that can be in the book Indonesian Capital Market Directory. Analytical technique used is discriminant analysis by using variable from Altman Z-Score which amounted to four (4) financial ratios, that is $X1 = \text{Working Capital to Total Assets}$, $X2 = \text{Earning Before Interest and Tax to Total Assets}$, $X4 = \text{Total Equity to Total Liabilities}$. This research also uses variable from Springate Score which amounted to four (4) financial ratios, namely $X1 = \text{Working Capital to Total Assets}$, $X2 = \text{Earning Before Interest and Tax to Total Assets}$, $X3 = \text{Earning Before Tax to Current Liabilities}$, $X4 = \text{Sales to Total Assets}$.

Keywords : Financial Distress.

1. Introduction

The development of the coal industry is in the spotlight in the business world because the performance of coal companies has decreased by 31.22 percent in 2020. The decline in the performance of coal companies is due to slowing economic growth in China and declining coal selling prices. The slowdown in China's economic growth, which is the second largest economy in the world and Indonesia's most important trading partner, has had a negative impact. The crisis regarding sustainable mining accompanied by declining coal prices, declining export figures forced several coal mining companies to close. Chairman of the Samarinda Indonesian Coal Entrepreneurs Association (APBI), Eko Priatno said, of around 60 mining companies in Samarinda, more than 70% of them have collapsed.

If these problems continue, it will have an impact on the possibility of the company experiencing bankruptcy, which means the company's failure to carry out company operations to generate profits.

2. Method

The data used in this study is secondary data, namely data taken through intermediaries, or data taken indirectly because it takes data from financial performance and independent auditor reports from coal mining companies listed

on the Indonesia Stock Exchange through documents and data from the official website. IDX www.idx.co.id. Obtaining the information needed in order to test the hypothesis of this study, the authors used the documentation data collection method, namely researchers looking for data at the Makassar Representative PIPM (Indonesian Stock Exchange). In addition, through the official website of the Indonesia Stock Exchange, namely www.idx.co.id and the official website of the company that will be investigated. The variables and research measurements are:

Table 1. The Variabel and research measurement

Variable	Definition	Variable	Scale
INDEPENDEN (X1)	The liquidity ratio measures a company's ability to meet its short-term obligations	WCTA	Ratio
Working Capital to total Asset (WCTA)		$\frac{\text{Working Capital}}{\text{Total asset}}$	Ratio
(X2)	The growth ratio shows the company's growth rate that can be achieved without having to borrow funds from other parties	(RETA)	Ratio
Retained Earnings to total asset (RETA)		$\frac{\text{Retained Earning}}{\text{Total asset}}$	
(X3)	Profitability ratio that measures the productivity of the company's assets in generating profits	(EBITTA)	Ratio
Earning Before Interest and Tax to Total Asset to total asset (EBITTA)		$\frac{\text{EBIT}}{\text{Total asset}}$	
(X4)	The leverage ratio shows the company's ability to finance funding with funding sources	(MVE to BVTL)	Ratio
Market Value of Equity to Book Value of Total Liabilities (MTVL)		$\frac{\text{MVE}}{\text{BVTL}}$	
Z-SCORE (Z)	From the company's financial report data will be analyzed using several financial ratios that are considered to be able to predict the bankruptcy of a company. Several financial ratios that detect the company's liquidity, profitability, and activity will produce ratios or numbers that will be further processed using the Altman formula.	$Z = 6,56X1 + 3,26X2 + 6,72X3 + 1,05X4$ Rudianto, 2013 : 257	<ul style="list-style-type: none"> a. a. <i>Z-Score > 2.6 is categorized as a very healthy company.</i> b. <i>1.1 < Z-Score < 2.6 is in the gray area.</i> c. <i>Z-Score < 1.1 is categorized as a company that has enormous financial difficulties and is at high risk.</i>

The author chooses to analyze the probability of bankruptcy prediction using the Altman Z-Score discriminant model and the Springate Score Analysis model. Altman Z Score is a tool used to predict the level of bankruptcy of a company by calculating the value of several ratios which are then included in a discriminant equation. Springate Score is a method for predicting the viability of a company by combining several common financial ratios with different weights given to one another. Found four types of financial ratios to the Altman Z-Score formula which can be combined to see the difference between bankrupt and non-bankrupt companies. the formula is as follows:

$$Z = 6,56X1 + 3,26X2 + 6,72X3 + 1,05X4$$

$$\begin{aligned} X1 \text{ (WCTA)} &= \frac{\text{Working capital}}{\text{Total Asset}} \\ X2 \text{ (RETA)} &= \frac{\text{retained earning}}{\text{Total Asset}} \\ X3 \text{ (EBITTA)} &= \frac{\text{EBIT}}{\text{Total Asset}} \\ X4 \text{ (MVE to BVTL)} &= \frac{\text{equity book value}}{\text{Book Value of Debt}} \end{aligned}$$

With the assessment standards (Rudianto, 2013: 258) as follows:

- 1) Z-Score > 2.6 (Non Bankrupt), categorized as a very healthy company so that it does not experience financial difficulties.
- 2) 1.1 < Z-Score < 2.6 (Grey Area), is in the gray area so it is categorized as a company that has financial difficulties, but the possibility of being saved and the possibility of going bankrupt are equally dependent on the policy decisions of the company's management as the decision maker.
- 3) Z-Score < 1.1 (Bankrupt), categorized as a company that has enormous financial difficulties and is at high risk so the possibility of bankruptcy is very large.

The Springate Score formula for various types of companies, namely:

$$Z = 1,03X1 + 3,07X2 + 0,66X3 + 0,4X4$$

$$\begin{aligned} X1 \text{ (WCTA)} &= \frac{\text{working capital}}{\text{Total Asset}} \\ X2 \text{ (EBITTA)} &= \frac{\text{EBIT}}{\text{Total Asset}} \\ X3 \text{ (EBTCL)} &= \frac{\text{EBT}}{\text{current debt}} \\ X4 \text{ (STA)} &= \frac{\text{sales}}{\text{Total Asset}} \end{aligned}$$

The results of calculations using the Springate Score formula will produce different scores between one company and another. The score must be compared with the following assessment standards to assess the viability of the company :

$Z > 0.862$ = Healthy Company

$Z < 0.862$ = The company has the potential to go bankrupt

If the Z value is above 0.862, then the company is still classified as healthy. If the Z value is below 0.862, then the company is considered to be in danger of bankruptcy.

3. Results

Process and Results of the Altman Z-Score Analysis Model

To calculate the Z-Score value for the four ratios above, each ratio is multiplied by the standard value specified in the Altman Z-Score analysis model using the formula:

$$Z = 6,56 X1 + 3,26 X2 + 6,72 X3 + 1,05 X4$$

Then then added up, it will get the Z-Score value of each company. Altman model cutoff points based on market value are:

$$\begin{aligned} Z > 2,9 &= \text{Safe zone} \\ 1,23 < Z < 2,9 &= \text{Grey zone} \\ Z < 1,23 &= \text{Dangerous zone} \end{aligned}$$

An example of calculating the Altman Z-Score method:

$$\begin{aligned} 2019 &= X1 = 0,129 & 2020 &= X1 = 0,073 \\ &X2 = -0,276 & &X2 = -0,257 \\ &X3 = 0,638 & &X3 = 0,594 \\ &X4 = 1,666 & &X4 = 1,516 \\ 2021 &= X1 = -0,003 \\ &X2 = -0,238 \\ &X3 = 0,446 \\ &X4 = 1,285 \end{aligned}$$

$$Z = 6,56 X1 + 3,26 X2 + 6,72 X3 + 1,05 X4$$

(Altman Z-Score formula in Rudianto)

$$\begin{aligned} Z2019 &= 6,56 (0,129) + 3,26 (-0,276) + 6,72 (0,638) + 1,05 (1,666) \\ &= 0,851 + -0,901 + 4,292 + 1,749 \\ &= 5,9918 > 2,9 \text{ (Safe Zone)} \\ Z2020 &= 6,56 (0,073) + 3,26 (-0,257) + 6,72 (0,594) + 1,05 (1,516) \\ &= 0,479 + -0,839 + 3,993 + 1,592 \\ &= 5,225 > 2,9 \text{ (Safe Zone)} \\ Z2021 &= 6,56 (-0,003) + 3,26 (-0,238) + 6,72 (0,446) + 1,05 (1,285) \\ &= -0,022 + -0,778 + 2,999 + 1,349 \\ &= 3,548 > 2,9 \text{ (Safe Zone)} \end{aligned}$$

Table 2. Altman Z-Score value for 2019

Source: processed data

No	Sample code	Company name (Sample)	Altman Z-Score value 2019	Prediction
1	HRUM	Harum Energy Tbk	14,772105	Safe zone
2	GEMS	Golden Energy Mines Tbk	11,928654	Safe zone
3	ANTM	Aneka Tambang Persero Tbk	5,968167	Safe zone
4	BUMI	Bumi Resources Tbk	-3,260343	Dangerous zone
5	BSSR	Baramulti Suksessarana Tbk	7,87096	Safe zone

6	ADRO	Adaro Energy Tbk	5,3266945	Safe zone
7	ATPK	Bara Jaya Internasional Tbk	5,696288	Safe zone
8	ARII	Atlas Resources Tbk	-0,7129075	Dangerous zone
9	DEWA	Darma Henwa Tbk	5,99188	Safe zone
10	BYAN	Bayan Resources Tbk	2,0079686	Grey zone

Table. 3 *Altman Z-Score* value for 2020

Source: processed data

ample code	Company name (Sample)	<i>Altman Z-Score</i> value 2020	Prediction	
1	HRUM	Harum Energy Tbk	17,445387	Safe zone
2	GEMS	Golden Energy Mines Tbk	9,04265	Safe zone
3	ANTM	Aneka Tambang Persero Tbk	6,1006607	Safe zone
4	BUMI	Bumi Resources Tbk	-7,6586581	Dangerous zone
5	BSSR	Baramulti Suksessarana Tbk	9,901378	Safe zone
6	ADRO	Adaro Energy Tbk	5,5429611	Safe zone
7	ATPK	Bara Jaya Internasional Tbk	2,9739736	Safe zone
8	ARII	Atlas Resources Tbk	-2,983466	Dangerous zone
9	DEWA	Darma Henwa Tbk	5,2258166	Safe zone
10	BYAN	Bayan Resources Tbk	2,5838834	Safe zone

Table 4. *Altman Z-Score* value for 2021

Source: processed data

ample code	Company name (Sample)	<i>Altman Z-Score</i> value 2021	Prediction	
1	HRUM	Harum Energy Tbk	15,946807	Safe zone
2	GEMS	Golden Energy Mines Tbk	8,795272	Safe zone
3	ANTM	Aneka Tambang Persero Tbk	6,000288	Safe zone
4	BUMI	Bumi Resources Tbk	-12,77975	Dangerous zone
5	BSSR	Baramulti Suksessarana Tbk	10,89784	Safe zone
6	ADRO	Adaro Energy Tbk	5,677648	Safe zone
7	ATPK	Bara Jaya Internasional Tbk	1,009124	Dangerous zone
8	ARII	Atlas Resources Tbk	-3,708240	Dangerous zone
9	DEWA	Darma Henwa Tbk	3,54828	Safe zone
10	BYAN	Bayan Resources Tbk	2,50734	Grey zone

Table. 5 Percent Prediction Likelihood of bankruptcy 2019-2021

Source: processed data

Predictive Percentage	Year		
	2019	2020	2021
Dangerous zone	30 %	30 %	33 %
Grey zone	20 %	0 %	20 %
Safe zone	50 %	70 %	47%

Process and Results Analysis Model Springate score

To calculate the Z-Score value for the four ratios above, each ratio is multiplied by the standard value specified in the Springate score analysis model using the formula:

$$Z = 1,03 X1 + 3,07 X2 + 0,66 X3 + 0,4 X4$$

Then then added up, it will get the Z-Score value of each company. The Springate model cutoff points based on market value are:

$Z > 0,862$ = healthy company
 $Z < 0,862$ = Potential Bankrupt Company

Table 6. Springate score analysis method value 2019

Source: processed data

ample code	Company name (Sample)	pringate score value 2019	Prediction	
1	HRUM	Harum Energy Tbk	3,71342239	Healthy
2	GEMS	Golden Energy Mines Tbk	3,77110486	Healthy
3	ANTM	Aneka Tambang Persero Tbk	1,23228249	Healthy
4	BUMI	Bumi Resources Tbk	0,4353023	potential bankrupt
5	BSSR	Baramulti Suksessarana Tbk	3,67415816	Healthy
6	ADRO	Adaro Energy Tbk	1,962440717	Healthy
7	ATPK	Bara Jaya Internasional Tbk	1,6586384	Healthy
8	ARII	Atlas Resources Tbk	-0,23150866	potential bankrupt
9	DEWA	Darma Henwa Tbk	2,39468	Healthy
10	BYAN	Bayan Resources Tbk	1,25992321	Healthy

Table 7. Springate score Analysis Method Value 2020

Source: processed data

ample code	Company name (Sample)	ringate score value 2020	Prediction	
1	HRUM	Harum Energy Tbk	1,924222604	Healthy
2	GEMS	Golden Energy Mines Tbk	2,667456	Healthy
3	ANTM	Aneka Tambang Persero Tbk	0,99102688	Healthy
4	BUMI	Bumi Resources Tbk	0,8968157	Healthy
5	BSSR	Baramulti Suksessarana Tbk	4,63159094	Healthy
6	ADRO	Adaro Energy Tbk	1,94450559	Healthy
7	ATPK	Bara Jaya Internasional Tbk	-0,01958018	potential bankruptcy
8	ARII	Atlas Resources Tbk	-0,42908477	potential bankruptcy
9	DEWA	Darma Henwa Tbk	2,190524	Healthy
10	BYAN	Bayan Resources Tbk	0,8834605	Healthy

Table 8. The value of the Springate score analysis method is 2021

Source: processed data

No	ode Sampel	Nama Perusahaan (Sampel)	ilai Springate score 2021	Prediksi
1	HRUM	Harum Energy Tbk	1,842967	Healthy
2	GEMS	Golden Energy Mines Tbk	2,68549302	Healthy
3	ANTM	Aneka Tambang Persero Tbk	1,242673961	Healthy
4	BUMI	Bumi Resources Tbk	-1,34178735	potential bankruptcy
5	BSSR	Baramulti Suksessarana Tbk	4,39148912	Healthy

6	ADRO	Adaro Energy Tbk	1,98699331	Healthy
7	ATPK	Bara Jaya Internasional Tbk	-0,2275522	potential bankruptcy
8	ARII	Atlas Resources Tbk	-0,5222583	potential bankruptcy
9	DEWA	Darma Henwa Tbk	1,568508344	Healthy
10	BYAN	Bayan Resources Tbk	1,01180116	Healthy

Table 9. Percentage Prediction Likelihood of bankruptcy 2019-2021

Source: processed data

Predictive Percentage	Year		
	2019	2020	2021
Potential bankruptcy	20%	20%	30%
Healthy	80%	80%	70%

4. Discussion

The results of the study show that in the Altman Z-Score, several companies are in the safe zone, gray zone and dangerous zone. Likewise, in the Springate Z-Score model, several companies show that they are in good health, and have the potential for bankruptcy. The companies in the safe zone in the Altman Z-Score model in 2019 are Harum Energy Tbk, Golden Energy Mines Tbk, Aneka Tambang Persero Tbk, Baramulti Suksessarana Tbk, Adaro Energy Tbk, Bara Jaya International Tbk, Darma Henwa Tbk, for companies those included in the dangerous zone are Bumi Resources Tbk, and Atlas Resources Tbk, while those in the gray zone are Bayan Resources Tbk. in 2020 the companies that are in the safe zone are the same as the companies that are in the safe zone in 2019, only one company is added, namely Bayan Resources Tbk. Whereas in 2021 if Bara Jaya International Tbk enters the safe zone in 2019 and 2020 but not in 2021 the company will enter the dangerous zone, while Bayan Resources Tbk is in the gray zone.

In contrast to the springate score model which states the company is in two different states, namely a healthy company, and a company that has the potential to go bankrupt. The results of springate scores in 2019 were eight companies declared healthy and two companies declared potentially bankrupt, namely Bumi Resources Tbk and Atlas Resources Tbk. Likewise in 2020 eight companies were declared healthy and two were declared to have the potential for bankruptcy including Bara Jaya International Tbk, and Atlas Resources Tbk. And in 2021 seven companies are declared healthy while three are declared to have the potential for bankruptcy including Bumi Resources Tbk, Bara Jaya International Tbk, and Atlas Resources Tbk.

5. Conclusion & Suggestion

A. Conclusion

The Altman Z-Score Model and the Springate Score Model are able to predict the probability of bankruptcy for all types of companies using 4 financial ratios.

According to the Altman Z-Score Model in 2019, there are two companies that have the potential to go bankrupt or are in a dangerous zone, namely PT Bumi Resources

Tbk and PT Atlas Resources Tbk, while only one company is in the gray zone, namely PT Bayan Resources Tbk. others are predicted to be in the safe zone. In 2020, there are two companies in the dangerous zone, namely PT Bumi Resources Tbk and PT Atlas Resources Tbk, 0% of the companies are in the gray zone, and 70% of them are in the safe zone. 2021 as many as 33% of coal mining companies that have been researched are in the dangerous zone, namely, PT Bumi Resources Tbk, PT Bara Jaya Internasional Tbk, and PT Atlas Resources Tbk, 20% of them are in the gray zone, namely PT Bayan Resources Tbk, while for safe zone as much as 47% of companies are in this zone.

According to the Springate Score Model in 2019, 20% of the coal mining companies under study are predicted to have the potential to go bankrupt, including PT Bumi Resources Tbk and PT Atlas Resources Tbk. 80% of them are financially sound. In 2020, 20% of companies will experience the same potential for bankruptcy as in 2019, PT Atlas Resources Tbk is predicted to have the potential to go bankrupt, PT Bara Jaya Internasional Tbk is also predicted to have the same potential to go bankrupt. 80% of them the financial performance of the coal mining companies studied is healthy. 2021 as many as 30% of companies are predicted to go bankrupt, an increase from the previous year which was only 20%, PT Bumi Resources Tbk, PT Bara Jaya Internasional Tbk, and PT Atlas Resources Tbk. 70% of them are companies with healthy financial performance.

The Altman Z-Score and Springate Score models in 2019 and 2021 conclude that the same two companies are in a dangerous zone, while in 2020 according to the Altman model PT Bumi Resources Tbk and PT Atlas Resources Tbk are in the Danger zone, whereas according to the Springate model Scores for 2020 are predicted for PT Bara Jaya Internasional and PT Atlas Resources to go bankrupt. The author concludes that the Altman and Springate methods are almost the same, it's just that the Springate model only has two assessment standards to assess the viability of companies, namely companies that have the potential to go bankrupt and companies that are healthy.

Based on the main problem that the author has described in Chapter I, namely, Can the financial reports of coal mining companies listed on the Indonesia Stock Exchange for the 2019-2021 period be able to predict the possibility of bankruptcy using the Altman discriminant model and Springate Score it turns out that after examining the financial statements of listed coal mining companies on the Indonesia Stock Exchange can be used to predict and save companies from possible bankruptcy with the Altman discriminant model and Springate Score. This research can be useful for taking anticipatory action, companies should also try to cover up their financial difficulties while improving the conditions they are experiencing. This is intended so that the condition of financial distress does not last long. In addition, the existence of the company is maintained and not abandoned by consumers.

B. Suggestion

Because of these limitations, the researcher provides several suggestions that can be used to develop future research:

1. In future research, it is hoped that the number of samples and periods should be added or the type of company should be different, so that later it will produce more accurate information.

2. Future research can use other existing prediction models, for example the Zmijewski, Ohlson, Fulmer, Grover, Zavgren, CA Score models and other models.
3. Future research is no longer predictive of bankruptcy but can be directed to researchers to compare prediction models to determine their level of accuracy.

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