

Analysis of Potential Risk of Business Losses in Transportation And Logistics Companies

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Article Info	Abstract
<i>Keywords:</i> ○ Altman Z-Score ○ Grover G-Score ○ Bankruptcy ○ Springate S-Score ○ Zmijewski X-Score	Purpose – This study aims to find out and predict the possibility of bankruptcy potential in transportation and logistics subsector companies listed on the Indonesia Stock Exchange (IDX) for the 2020-2022 period with the methods used, namely Altman Z-Score, Springate S-Score, Zmijewski X-Score, Grover G-Score. Design/methodology/approach – The method to analyze the data uses a quantitative descriptive method with a sample of 10 companies that have been determined based on purpose sampling. The type of data is the financial report for the 2020-2022 period. Findings – The results of this study show that based on calculations using the Altman Z-Score model, 10 companies are found to have a chance of going bankrupt, the Springate S-Score model shows that 8 companies have the potential to go bankrupt, the Zmijewski Z-Score model has the potential to go bankrupt and there are only 5 companies that are consistently in a position that does not have the potential to go bankrupt, the Grover G-Score model has 4 companies that are likely to go bankrupt and There are only 2 companies that are consistently in good shape.
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INTRODUCTION

A company is an institution that is organized and managed to provide goods or services to the community with profit motives or incentives (Hermanto, 2022). The purpose of the company itself is to carry out a business activity to get profits or what is often called profit. The potential for bankruptcy in every business is likely to occur due to internal factors or external factors that trigger concerns for business actors, including companies. Bankruptcy is the risk of bankruptcy which reflects the certainty that a company will not be able to continue its operations if the company's financial condition is in a very worrying and minimal/impossible state (Bilderbeek, 2002, as quoted in Hutabarat, 2020).

Companies engaged in transportation and logistics are one of the sectors that have unique business characteristics and are very vulnerable to external fluctuations such as changes in fuel prices, regulatory policies, and global economic factors. One of the external factors that has a huge impact on the company's operations is due to the existence of Covid-19 which decided

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the government to make regulatory policies to prevent the Covid-19 outbreak by imposing restrictions on activities and imposing lockdowns. This has a significant impact on the company's operational activities which disrupt the financial decline which declines sharply and allows the potential for bankruptcy. The purpose of this study is to analyze using various models to estimate bankruptcy opportunities of transportation and logistics companies. Bankruptcy is simply defined as the unsuccess of a company in carrying out its operations to make a profit. Bankruptcy refers to the deterioration of a company's financial condition and the inability to continue the business due to debts that exceed the value of its assets. Bankruptcy can also be interpreted as company liquidity, company closure, and insolvency (Supriadi, 2020). The causes of bankruptcy are divided into two types, namely internal and external factors. Internal factors are factors that come from within the management of a company. Meanwhile, external factors can arise from external factors that are directly related to the company's operations or from macroeconomic factors (Shuryadharma, 2022).

By predicting this financial performance, it can be a consideration for stakeholders that can be used to anticipate the risk of problems that may occur in the future. During the Covid-19 pandemic, the business conditions of the transportation and logistics subsector are quite interesting to be used as an object of research, because like the current real conditions, all activities experience an impact that greatly affects business results. From the results of the annual financial report presented on the Indonesia stock exchange, in the 34 listed companies in the transportation and logistics sector, there are at least 10 companies that suffered losses in two periods between 2020 – 2022. From this data, if there is a continuous decline, it will have an impact on the stability of the company to survive and experience the potential for bankruptcy to be very likely. Quoting from detik finance, Chairman of the Indonesia National Air Carriers Association (INACA) Denon Prawiraatmadja said, "It can be seen that the number of passenger movements has seen a significant decline. " So we only had about 19 million passengers in the first half of 2020". According to Abidin, Zainal (2022) stated that bankruptcy predictive analysis is an analysis that helps predict the likelihood of a company going bankrupt due to financial problems. Corporate bankruptcy has a chance to occur due to a company's inability to predict economic progress and competition in the business world (Irfani, 2020). In addition, the beginning of a company's bankruptcy is marked by several factors, such as: continuous losses in operating results, late payment of customer loans, poor working capital management, and various other reasons can cause the financial condition of a company to deteriorate and become unsustainable.

A financial crisis refers to a situation in which the company is unable to pay its debts on time, resulting in the elimination or reduction of dividend payments. This condition begins with continuous changes in yields that tend to be negative. The first sign of potential financial problems for the company is reflected in the negative operating cash flow trend. This situation shows that operating cash expenditure is greater than cash income obtained from operating activities.

Based on the description of the phenomenon above, the author is encouraged to research on companies that have the potential to go bankrupt using the Altman Z-Score, Springate S-Score, Zmijewski X-Score, Grover G-Score models with a sample in the form of financial

statements of transportation and logistics companies listed on the Indonesia Stock Exchange from 2020 – 2022. Based on the problems in the background of the defense, conclusions can be drawn including:

1. What are the results of using the Altman Z-Score method to assess the potential for bankruptcy of transportation and logistics companies listed on the Indonesia Stock Exchange for the 2020-2022 period?
2. What are the results of the application of the Springate S-Score method to assess the level of potential bankruptcy of a transportation and logistics company listed on the Indonesia Stock Exchange for the 2020-2022 period?
3. What are the results of the use of the Zmijewski X-Score method to assess the level of bankruptcy chances of a transportation and logistics company listed on the Indonesia Stock Exchange for the 2020-2022 period?
4. What are the results of the use of the Grover G-Score method to assess the level of potential bankruptcy in transportation and logistics companies listed on the Indonesia Stock Exchange for the 2020-2022 period?

RESEARCH METHOD

This research data is secondary data downloaded from the financial statements (audit) for the 2020-2022 period. The author obtained the data by accessing the website of the Indonesia Stock Exchange on www.idx.co.id. The population of this study is all transportation and logistics subsector companies listed on the Indonesia Stock Exchange (IDX) for the 2020-2022 period as many as 34 companies. The purpose sampling technique is used by the author in taking samples with certain criteria, including:

1. Companies in the transportation and logistics subsector are listed on the Indonesia Stock Exchange (IDX) for the 2020-2022 period and present complete and audited financial statements.
2. Companies in the transportation and logistics subsector were declared to have suffered business losses twice in the financial statements for the 2020-2022 period.

Based on the sample criteria, out of 34 companies, there are 10 companies classified in the research sample category, namely PT Garuda Indonesia (Persero), Tbk – GIAA, PT Air Asia Indonesia, Tbk – CMPP, PT. WEHA Transport Indonesia, Tbk – WEHA, PT. Eka Sari Lorena Transport, Tbk – LRNA, PT. Express Transindo Utama, Tbk – TAXI, PT. Dewata Freightinternational, Tbk – DEAL, PT. Sidomulyo Selaras, Tbk – SDMU, PT. Krida Jaringan Nusantara, Tbk – KJEN, PT. Mitra International Resources, Tbk – MIRA, PT. Guna Timur Raya, Tbk – TRUK.

Altman Model (Z-Score)

Mathematically, the equation of the Altman model (Z-Score) is formulated: (Irma, 2018)

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

Where:

X_1 = Working Capital to Total Assets X_2 = Retained Income to Total Assets

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X3 = Profit and Interest before Tax on Total Assets

X4 = Equity Market Value Relative to Debt Book Value

X5 = Sales to Total Assets

If the Z-Score score is < 1.23 , the company has the opportunity to go bankrupt. However, typing a score between $1.23 - 2.90$ means that it is in the gray zone. If a score of 2.90 is obtained, the company has no potential to go bankrupt.

Springate Model (S-Score)

The Springate model is formulated as follows: (Stefannie:2019)

$$S = 1.03 X1 + 3.07 X2 + 0.66 X3 + 0.4 X4$$

Information:

X1 = Capital to Total Assets

X2 = Net Profit before Interest and Tax on Total Assets X3 = Net Profit before Tax on Current Liabilities

X4 = Sales to Total Assets

The cut off value for this model, if S-Score:

- $S < 0.862$ Potentially Bankrupt
- $0.862 < S < 1.062$ Companies in the Grey Zone
- $S > 1.062$ Not Potentially Bankruptcy

If the score obtained is > 0.862 , then the company can be grouped into a healthy category and if the score obtained is < 0.862 , then the company is categorized as having the potential for bankruptcy.

Zmijewski Model (X-Score)

Zmijewski's model is mathematically formulated as follows: (Christiana, 2018) $X = -4.3 - 4.5X1 + 5.7X2 - 0.004X3$

Where:

X1 = Ratio of Net Profit to Total Assets (Return on Asset).

X2 = Ratio of Total Debt to Total Assets (Debt Ratio).

X3 = Current Assets to Current Liabilities Ratio.

If the score obtained is greater than 0 (zero), then the company is not expected to go bankrupt, but if the score obtained is less than 0 (zero), then the company is not expected to go bankrupt.

Model Grover (G-Gover)

Grover's model is mathematically formulated as follows (Anggraini, 2022):

$$G\text{-Score} = 1,650X1 + 3,404X2 - 0.016 \text{ ROA} + 0.057$$

Financial Ratio:

X1= Working Capital to Total Assets

X2= Profit before Tax and Interest on Total Assets ROA = Net Income to Total Assets

G-Score Measurement Scale (Cut Off):

- $G\text{-Score} \leq -0.02$ Potentially Bankrupt

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- b. $-0.02 < \text{G-Score} < 0.01$ Grey Zone
- c. $\text{G-Score} \geq 0.01$ Does Not Have the Potential to Go Bankrupt

DISCUSSION

Altman Model

Table 1. Altman Model Calculation Results

No	Company Name	Year	X1	X2	X3	X4	X5	Z-Score
1	PT Garuda Indonesia (Persero),Tbk - GIAA	2020	-0.418	-0.423	-0.796	-0.890	0.138	-2.389
		2021	-0.912	-1.444	-2.080	-0.686	0.186	-4.935
		2022	-0.169	-0.826	2.083	-1.709	0.337	-0.285
2	PT Air Asia Indonesia,Tbk - CMPP	2020	-0.944	-0.001	-1.666	-0.655	0.265	-3.001
		2021	-1.524	-3.198	-1.262	-1.167	0.123	-7.027
		2022	-1.605	-3.458	-1.012	-1.532	0.706	-6.902
3	PT. WEHA Transport Indonesia,Tbk - WEHA	2020	-0.097	-0.138	-0.605	-0.161	0.294	-0.708
		2021	-0.093	-0.209	-0.153	-0.225	0.420	-0.260
		2022	0.066	-0.063	0.290	-0.054	0.629	0.868
4	PT. Eka Sari Lorena Transport,Tbk - LRNA	2020	-0.022	-0.556	-0.473	0.748	0.240	-0.062
		2021	0.001	-0.783	0.005	0.658	0.293	0.174
		2022	-0.032	-0.967	0.000	0.585	0.414	0.000
5	PT. Express TransindoUtama, Tbk - TAXI	2020	0.729	-0.306	-0.990	-0.507	0.089	-0.985
		2021	1.049	-19.738	6.530	0.045	0.080	-12.034
		2022	1.098	-24.585	-0.678	0.037	0.040	-24.088
6	PT. Dewata Freightinternational ,Tbk -DEAL	2020	-0.154	-0.215	-0.721	-0.230	0.251	-1.069
		2021	-0.425	-1.305	-0.603	-0.831	0.505	-2.659
		2022	-0.307	-1.490	-0.270	-0.891	0.568	-2.390
7	PT. Sidomulyo Selaras, Tbk - SDMU	2020	-0.150	-0.007	-0.824	0.033	0.502	-0.446
		2021	-0.790	-1.041	-0.205	-0.016	0.488	-1.564
		2022	0.047	-1.105	0.074	0.014	0.567	-0.402
8	PT. Krida Jaringan Nusantara, Tbk - KJEN	2020	0.090	0.018	-0.090	0.767	0.180	0.965
		2021	0.084	-0.015	-0.110	0.747	0.122	0.827
		2022	0.083	-0.015	-0.005	0.747	0.124	0.934
9	PT. Mitra International Resources, Tbk - MIRA	2020	0.031	-5.787	-0.198	0.259	0.274	-5.421
		2021	0.019	-6.147	-0.156	0.245	0.284	-5.755
		2022	-0.179	-7.082	-0.415	0.208	0.315	-7.153

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10	PT. Guna Timur Raya,	2020	-0.079	0.044	-0.341	0.876	0.497	0.997
	Tbk - TRUK	2021	-0.062	-0.038	-0.183	0.809	0.516	1.042
		2022	-0.031	-0.125	-0.210	0.751	0.548	0.932

Source : Processed data, 2024

Based on the results of calculations using the Gover method, it shows that between 2020 – 2022 PT Garuda Indonesia (Persero), Tbk – GIAA and PT. Sidomulyo Selaras, Tbk – SDMU, found a chance of bankruptcy in 2020 and 2021 but in 2022 there is no potential for bankruptcy. Meanwhile, 4 companies received a G-Score of < -0.02 which means that they have the potential for bankruptcy, namely PT Air Asia Indonesia, Tbk – CMPP, PT. Dewata Freightinternational, Tbk – DEAL, PT. Mitra International Resources, Tbk – MIRA, PT. Guna Timur Raya, Tbk – TRUK. In contrast to PT. Express Transindo Utama, Tbk – TAXI and PT. Krida Jaringan Nusantara, Tbk – KJEN, which has consistently been between 2020 – 2022, is at a safe point because it gets a G-Score of > 0.01 , which means that it does not have the potential to go bankrupt.

CONCLUSION

Based on the results of the calculation, the author concludes that:

1. Based on calculations using the Altman Z-Score model from 10 companies sampled in this study during the period 2020 – 2022, the average Z-Score was less than 1.81, which can be interpreted as all of them have the potential to be expected to go bankrupt.
2. Based on calculations using the Springrate S-Score model from 10 companies in 2020 as a whole, there is a potential possibility of bankruptcy. However, in 2021 there was 1 company with financial improvements that placed it in a non-bankrupt position and then in 2022 it was followed by 2 companies that did not have the potential to go bankrupt.
3. Based on calculations using the Zmijewski X-Score model from 10 companies that were used as research objects in 2020-2022, there were only 4 companies that had the potential to experience bankruptcy during the 3 years. 1 company that has the opportunity to go bankrupt for 2020 but again improves its financial performance so that in 2021 and 2022 it is not likely to go bankrupt. And there are 5 companies that are consistently in a condition that does not have the opportunity to go bankrupt in the 2020-2022 period.
4. Based on calculations using the Grover G-Score model from 10 companies that were used as research objects in 2020-2022, there are 4 companies that are likely to go bankrupt during the 2020-2022 period. Meanwhile, there are 2 companies that are improving their financial condition with a position that does not have a chance to go bankrupt in 2022, and 1 company that is in good condition in 2021 and 2022 only, and there are 2 companies that are consistently in good condition during the 2020-2022 period.
5. Based on calculations using the Altman Z-Score, Springrate S-Score, Zmijewski X-Score, Grover G Score models from 10 companies sampled in this study during the 2020-2022 period, 74.17% were declared potentially bankrupt, 8.33% stated that the company was

in the gray area, and 17.5% of the companies were declared not to experience potential bankruptcy

Based on the conclusion of the study, the author suggests for interested parties, including:

1. Companies that get poor scores or are in the gray zone, are expected to continue to survive and improve their financial performance, so as to provide better results.
2. Companies that get a good score, it is recommended to be able to maintain and also continue to improve and continue to always evaluate, so as to cause a decline in financial performance.
3. For the benefit of investors and creditors to be able to see the results of this study as a consideration, but the results of this research assessment are not the only consideration about whether or not it is feasible as a place to invest or provide loans to dig up additional in-depth information about the company in question.
4. For the researcher later, the author strongly suggests being able to use other models, different objects and increase the number of samples to reflect the results even better.

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