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Article

Analysing the Potential of Bankruptcy using Altman Z-Score: A Case Study of PT. Garuda Indonesia

Darwin Lie [a], Yerisma Welly [a],*, Ady Inrawan [a], Lenny Dermawan Sembiring [a] and Debi Eka Putri [a]

[a] Sekolah Tinggi Ilmu Ekonomi Sultan Agung, Kota Pematang Siantar, Sumatera Utara 21145, Indonesia; darwin@stiesultanagung.ac.id (D.L); ady@stiesultanagung.ac.id (A.I); lenny@stiesultanagung.ac.id (L.D.S); debieka@stiesultanagung.ac.id (D.E.P)

* Correspondence: welly.yerisma@gmail.com (Y.W)

Abstract: The improper company's financial condition can affect the company's performance to stay on track in the airline's competition. The company should be gaining extra efforts, especially the management system, to achieve the company goal of obtaining the maximum profit. This study aimed to analyse the financial distress of Indonesian airline companies. This study was designed using a quantitative approach through secondary data collected from the financial report of the Indonesia Stock Exchange (IDX) from 2016 to 2020. The data were analysed using the Altman Z-Score. The variable of this study includes working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, market value of equity to book value of total liabilities and sales to total assets. The results of the study revealed that PT. Garuda Indonesia faced the financial difficulty that potentially led to bankruptcy risk. Evidence on the basis of Altman Z-Score value of PT. Garuda Indonesia in 2016-2020 is less than 1.81. In 2020, PT. Garuda Indonesia suffered high losses due to the impact of the COVID-19 pandemic.

Keywords: financial distress, bankruptcy, Altman Z-Score, Indonesia stock exchange.

1. Introduction

The company's financial condition is improper can affect the company performance to stay on track in the airline's competition (Tan & Peng, 2003). The company should make extra efforts, especially through management, to achieve company goals and obtain the maximum profit. The management must operate is airline functions effectively and efficiently. The achievement of maximum results is indicated through the level of the company's financial distress (Lake, 2010). Companies that have advantages will be able to survive in increasingly fierce competition. One of the advantages that the company must possess is to have excellent and steady financial performance so that it can maintain and improve financial performance every year. It is also a point plus or company strength for potential investors in deciding to invest in the company. Companies can risk bankruptcy if they fail to maintain proper management. A company's bankruptcy is influenced by external factors such as natural disasters and economic conditions and internal factors such as a lack of excellent human resources and management cooperation (Yunus, 2021).

Financial distress is a situation where the company's financial condition has decreased significantly (Hakkio & Keeton, 2009; Pranowo et al., 2010). The condition of financial difficulties stems from the inability of the company's management to manage the company, resulting in operating losses or net losses for the current year or operating cash flow that is smaller than its operating profit. Companies that experience financial difficulties on an ongoing basis over a long period have a high potential for bankruptcy (Fitriani & Huda, 2020). Financial statement analysis is one way to determine the current and future level of a company's financial distress (Enyi, 2018; Khadafi et al., 2021; Palepu et al., 2020). To develop and improve the business, the company's health level is important to be maintained. The presence of an opportunity to earn a profit can cover the possibility of a prediction of bankruptcy. By using financial statement analysis, it can be assessed how the company's ability to fulfil short-term and long-term obligations, the company's capital structure, the effectiveness of the use of assets, operating results or income that has been achieved, the expenses to be paid and predicting the potential for bankruptcy (Lake, 2010). The year 2020 was a very tough year for the business world, especially in Indonesia, due to the COVID-19 pandemic. The COVID-19 pandemic has affected all sectors of the economy, including the air transportation sector.

The year 2020 was a very tough year for the business world, especially in Indonesia, due to the COVID-19 pandemic. The COVID-19 pandemic has affected all sectors of the economy, one of which is the air transportation sector. The Central Statistics Agency recorded that the number of aircraft passengers fell by 90% in May 2020, decreased number of passengers that occurred at all major airports observed, namely Ngurah Rai Airport-Denpasar 94.56%, Juanda-Surabaya 94.48%, Kualanamu-Medan 87, 76%, Hasanuddin-Makassar 86.33% and Soekarno Hatta-Banten 85.60% (Affandi & Meutia, 2021).

These events affect the profitability undergone by various airlines in Indonesia, one of which is PT. Garuda Indonesia (Persero), Tbk. The airline PT. Garuda Indonesia (Persero), Tbk recorded a massive loss of more than Rp. 15 Trillion in the third quarter of 2020. In the third quarter of 2020, this flag carrier airline could only generate revenue of US$1.14 billion or 67.79% from the same period in the previous year. The loss was recorded in the company's financial statements for the third quarter of 2020, visited on the Indonesia Stock Exchange (IDX). This contrasts with the records of the third quarter of 2019 financial statements with a net profit of US$ 122.42 million or around Rp. 1.7 Trillion. In hindsight, Garuda's read performance has dominated its financial statements for the past few years. Garuda was recorded to have suffered several losses before the arrival of the COVID-19 pandemic (Shandy et al., 2022).

Table 1. Revenue and Net Profit of PT. Garuda Indonesia.

Year	Revenue	Net Profit	Category
2016	3.279.806.762	9.364.858	Loss
2017	3.401.980.004	(213.389.678)	Profit
2018	3.529.322.999	(228.889.524)	Profit
2019	3.773.399.072	6.457.765	Loss
2020	917.289.551	(1.091.697.373)	Profit

Data source: Fau (2021)

Table 1 displays the income of PT. Garuda Indonesia in 2016–2020 tends to increase. In 2016 revenue was $3,279,806,762, in 2017 revenue was $3,401,980,004, in 2018 revenue was $3,529,322,999, in 2019 revenue was $3,773,399,072, but in 2020 it underwent a revenue significant decline for $917,289.551. Then other related matters were followed by the acquisition of net income, which is it tends to suffer losses, namely from the net income obtained by the company. In 2016, the net profit obtained by PT. Garuda Indonesia amounted to $ 9,364,858,   in 2017 it suffered a loss of $ -(213,389,678), then in 2018 again underwent a loss that was greater than the loss in the previous year of $ - (228,889.524), and in 2019 they managed to earn a profit of $ 6,457,765, but in 2020 again underwent a very significant loss of $ (1,091,697,373). In this case, PT. Garuda Indonesia is more likely to undergoes profit losses. This condition was worsened by the impact of the COVID-19 pandemic, which have been increasingly putting the company in financial difficulty due to the decrease in passenger flow, which is considered more sustainable (Fau 2021).

Therefore, this study required a predictive analysis for measuring the level of the financial distress of a company that can be used as an early warning for the company during financial distress. This analysis aims to provide statistical prediction to avoid and anticipate the potential for bankruptcy by the company in the future. This will greatly useful to various parties such as shareholders, investors, government, accountants, and management of the company concerned to obtain information about how big the chance of the company can survive or how impactful the company's bankruptcy is. This information can be obtained through the financial ratios contained in the company's financial statements which are used as the basis for the assessment. Various bankruptcy analysis models have been developed to predict the onset of corporate bankruptcy, such as the Altman Z-Score model developed by Edward I. Altman in 1968. The analytical model uses the financial ratio variables contained in the financial statements to predict the company's

bankruptcy (Affandi & Meutia, 2021). On the basis of the phenomenon, this study aimed to analyse the financial distress (potential for bankruptcy) of Indonesian airline companies using Altman Z-Score in PT. Garuda Indonesia.

2. Literature Review

2.1. Financial Statements

Financial statements are information that is considered a basis for making decisions, ranging from investors or potential investors to the management of the company itself (Hanafi & Halim, 2012). According to (Damayanti et al. 2019), financial statements are reports that reveal the company's financial condition at this time or within a certain period. Financial statements' purpose is essentially to assist users in estimating the company's future by comparing, evaluating and analysing trends from various aspects of the company's finances (Bambang Wahyudiono & MM 2014).

2.2. Financial Distress

The financial distress condition stems from the inability of the company's management to manage the company, which results in operational losses or net losses for the current year or operating cash flow that is smaller than its operating profit. Companies that experience financial distress on an ongoing basis over a long period have a high potential for bankruptcy (Fitriani & Huda, 2020).

2.3. Bankruptcy

Bankruptcy is a condition or situation where a company experiences a shortage and insufficient funds to finance or operate the business (Fau, 2021). According to Pertiwi (2011), bankruptcy as a failure can be defined in terms, firstly, economic failure (economic distress) is a condition where the company loses money or income from companies that cannot cover their costs. This event is interpreted when the level of the profit is smaller than the cost of capital or the present value of the company's cash flows is smaller than the liabilities. This failure occurs when the company's actual cash flows have fallen below the expected cash flows. Second, financial distress (financial distress) means difficulty in funds in terms of cash and working capital. Some asset-liability management plays as a very important role in the arrangement to prevent being exposed to financial distresses. A company's bankruptcy will quickly occur if the company is in a country undergoing economic difficulties because economic difficulties can trigger rapid corporate bankruptcy that may occur in companies that are initially or have undergone an unsound company.

2.4. Altman Z-Score

Altman Z-Score is a tool to predict the decline of a company's financial problems by calculating the value of several ratios and then inputting it in a discriminant equation. Altman combines various ratios into predictive models with statistical methods, especially the differential test used to predict the occurrence of corporate bankruptcy with the term Z-Score. In this model, Altman uses several financial ratios to be analysed: the liquidity, solvency, activity, and profitability.

3. Materials and Methods

PT. Garuda Indonesia (Persero), Tbk. was the subject of this study. This study was a descriptive study that collected information about company finances using a quantitative approach, namely analysing the company's financial statement data and then tabulating it to determine which category the company can be confirmed to be sound or unsound. This study used secondary data from the company's financial statements for the 2016-2020 period by accessing the official website of the Indonesia Stock Exchange www.IDX.co.id. This study used the Multivariate discriminant analysis method, namely the Altman Z-Score analysis model. The analysis was performed from financial statement data in the form of balance sheets and profit/loss reports. The financial statement data will be analysed further using the ratios in the Altman Z-Score analysis model. The variables studied in this study were five important ratios as the indicators of potential bankruptcy in the company, with the following equation:

$$Z = 1.2\ WCTA + 1.4\ RETA + 3.3\ EBITA + 0.6\ MVEB + 1.0\ STA \tag{1}$$

Working Capital to Total Assets (WCTA). This ratio was used to measure the liquidity of a company's assets to its total capitalisation. And liquidity from total assets and working capital position (net). In addition, the liquidity ratio was also used to measure the company's ability to meet short-term obligations that are due.

$$WCTA = \frac{CA\text{-}CL}{TA} \tag{2}$$

Retained Earnings to Total Assets (RETA). This ratio was used to measure cumulative profitability and to detect the company's ability to generate profits in terms of the company's ability to generate profits. The company was concerned with obtaining profits compared to the speed of rotation of operating activities as a measure of business efficiency. Profitability or profitability reveals the company's ability to generate profits during a certain period.

$$RETA = \frac{RE}{TA} \tag{3}$$

Earnings Before Interest and Taxes to Total Assets (EBITA). This ratio was used to measure the actual productivity of the company's assets. In addition, it was also a reflection of the profitability ratio, which was a ratio that can measure the ability/effectiveness of management in generating profits for a certain period. In addition, it was also a ratio that can measure the ability of the capital invested in overall assets to generate profits for all investors, including shareholders and bonds.

$$EBITA = \frac{EBIT}{TA} \tag{4}$$

Market Value of Equity to Book Value of Total Liabilities (MVEB). This ratio was used to measure how much a company's value assets decrease before the amount of debt is greater than its assets and the company becomes insolvent. The activity ratio is a ratio that measures how effectively the company uses its resources. This ratio measured the company's ability to guarantee each debt through its capital.

$$MVEB = \frac{BVE}{TD} \tag{5}$$

Sales to Total Assets (STA). This ratio was used to measure management's ability to face competitive conditions. It is also part of the activity ratio. The ratio measures the efficiency of changes in the use of its total assets to generate sales.

$$STA = \frac{SALES}{TA} \tag{6}$$

The classification of healthy and bankrupt companies was based on the Altman Z-Score can be seen in Table 2 below:

Table 2. Altman Z-Score Assessment Criteria.

Criteria	Category
Z > 2.99	Safe Zone
1.81 < Z < 2.99	Grey Zone
Z < 1.81	Distress Zone

4. Results

Table 2 captures the result of Altman Z-Score every year is below the cut-off point <1.81. It means that PT. Garuda Indonesia (Persero), Tbk from the 2016-2020 period, was classified as an unsound company and is undergoing financial difficulties and has the potential to go bankrupt.

Table 3. Altman Z-Score of PT. Garuda Indonesia during 2016-2020.

Year	WCTA	RETA	EBITA	MVEB	STA	Z-Score
	1.2*WCTA	1.4*RETA	3.3*EBITA	0.6*MVEB	1.0*STA	Value
2016	(0.106605)	(0.057521)	0.028379	0.370241	1.0338	1.141141
2017	(0.262883)	(0.127367)	(0.018835)	0.317177	1.1100	0.744375
2018	(0.497770)	(0.181231)	(0.038236)	0.153437	1.0421	0.156937
2019	(0.507664)	(0.178105)	0.031696	0.150417	1.0262	0.362501
2020	(0.348309)	(0.301936)	(0.188964)	(0.152597)	0.1149	(0.440920)

4.1. Working Capital to Total Assets (WCTA)

This ratio reveals the extent of the company's ability to generate net working capital from its total assets. If the networking capital value is negative, it indicates the company has potential difficulties covering its short-term obligations due to insufficient current assets to cover these obligations (Affandi & Meutia 2021). PT. Garuda Indonesia (Persero), Tbk obtained the X1 ratio value from 2016-2020 consecutively negative due to several current liabilities of the company that exceed the total current assets possessed by the company, this results in the number of current assets possessed by the company cannot be cover all current liabilities borne by the company. This indicates that the liquidity level of PT. Garuda Indonesia (Persero), Tbk for the 2016-2020 period was svery poor or improper. The results of this study are similar with study report by (Affandi & Meutia 2021), (Fau 2021), and (Yunus 2021).

4.2. Retained Earnings to Total Assets (RETA)

PT. Garuda Indonesia (Persero), Tbk obtained a negative value of X2 ratio from 2016-2020, which means that the accumulated retained earnings each year was negative (deficit). It indicates that the ability of its assets to obtain retained earnings is very low due to the lack of profits that are unable to cover the expenses that must be borne during the period. The results of this study are also similar to study report by (Affandi & Meutia 2021), (Fau, 2021), and (Yunus 2021).

4.3. Earning Before Interest and Taxes to Total Assets (EBITA)

This ratio reveals the extent to which the company can generate profit before tax from assets possessed by the company. PT. Garuda Indonesia (Persero), Tbk obtained the X3 ratio value from 2017-2020 consecutively decreased and was negative due to the company's profit or profit undergoing a loss (deficit), especially in 2020 undergoing a very large loss. Factors that caused the downward financial stability included increased operational costs related to the company's expansion and extraordinary transactions such as tax amnesty fees and contingent fines for cargo cartels (Affandi & Meutia 2021). It indicates that the company's management was unable to manage all of its assets effectively in generating profits, where the operating profit achieved by the company reveals that operating costs cannot record its business profit and loss.

4.4. Market Value of Equity to Book Value of Total Liabilities (MVEB)

PT. Garuda Indonesia (Persero), Tbk obtained a ratio value (X4) in a row from 2016-2020, which has decreased. The highest ratio in 2016 was 0.37%, and the lowest in 2020 was -0.15%. It indicates that this company has accumulated debt greater than its capital, which always decreases yearly. In general, companies that have the potential to go bankrupt have a larger proportion of debt compared to their capital or the market value of their shares.

4.5. Sales to Total Assets (STA)

PT. Garuda Indonesia (Persero), Tbk obtained a ratio value (X5) in a row from 2017-2020, which has decreased. The highest ratio in 2017 was 1.11%. It indicates that during this period, the company successfully generated revenue. However, the lowest ratio was in the 2020 period at 0.11% due to the increasing value of total assets, but the income underwent a drastic decline. It indicates that in 2020 the company is not effectively managing all of its assets which are increasing in generating profits. The results of the analysis indicated that the financial performance of PT. Garuda Indonesia, Tbk was in an unsound financial condition. It was revealed that the company's financial performance was getting worse from one period to another. Based on the score obtained, PT. Garuda Indonesia, Tbk is in the category of companies undergoing financial distress and have great potential for bankruptcy. Especially since the COVID-19 pandemic hit, it indicated that the Z-Score results in 2020 are negative. The results reports also have been previously reported by the similar result from Affandi & Meutia (2021), Fau (2021), and Yunus (2021) with the results of PT. Garuda Indonesia, Tbk gets a relatively very low Z score.

5. Conclusions

In conclusion, this study indicated that the prediction of financial distress using the Altman Z-Score analysis model at PT Garuda Indonesia revealed the airline was undergoing financial distress during 2016–2020 period. The results of the Z score indicated this distress at PT. Garuda Indonesia always reveals a Z score <1.81, indicating that the airline PT. Garuda Indonesia was an unsound company in each study period. Especially in 2020, the Z-Score value was negative, indicating the company's condition is on the verge of collapse due to the impact of COVID-19. Only one analysis model limited to the study was used in this study, namely the Altman Z Score analysis method. Therefore, it is required to conduct a further study that involves other analytical models, such as the Springate and Zmijewski analysis models; thus, the analysis can be performed thoroughly by comparing the results of the several analytical models.

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