



Analysis of Financial Distress Prediction at PT Garuda Indonesia Tbk for 2020-2023 Using the Grover, Taffler, and Springate

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Abstract

This study aims to evaluate the potential financial distress of PT Garuda Indonesia Tbk during the period 2020-2023 using three prediction models: Grover, Taffler, and Springate. Financial distress is an early sign of financial instability that can lead to bankruptcy, so it is important to analyze it to prevent greater risks. This study uses a quantitative descriptive method with secondary data from the company's financial statements. The results of the analysis show that although Garuda Indonesia's financial condition improved in 2021 and 2022, financial stress returned in 2023. The Grover model is more sensitive in identifying financial distress, while the Taffler method tends to be optimistic, and Springate shows more variable results. Based on these findings, companies need to implement more effective financial strategies to maintain their stability and reduce the risk of bankruptcy.

Keywords: financial distress, financial analysis, bankruptcy prediction, PT Garuda Indonesia Tbk.

1. Introduction

Indonesia consists of many islands, connecting different regions relies heavily on an efficient transportation system. One of the most significant forms of transportation is air travel, which is essential for bridging areas that are geographically separated and inaccessible by land or water. With first-class service and a global network that facilitates the mobility of companies and foreign travelers, Garuda Indonesia is a key contributor to better connectivity in Indonesia.

In Indonesia, air travel is still changing to meet the demands of population mobility and economic expansion, and airlines like Garuda Indonesia are vital to this development. Competition between domestic and foreign companies is intensifying as the global economy develops. In addition, company performance and stock value may decline due to Indonesia's economic uncertainty. One of the early signs of bankruptcy is financial distress, which results in a decline in annual profits due to the company's inability to carry out operations to fulfill its money-making objectives (Pianti et al., 2024).

A company's ups and downs are normal. circumstances that may cause creditors and investors to become concerned in the event that a business has financial difficulties that could result in bankruptcy (Kustianto & Octavianus Negoro, 2020). This will become a more significant issue if a company's bankruptcy procedure cannot be predicted in advance. If the bankruptcy process of a company cannot be anticipated sooner, then this will become a more serious problem. Due to a number of internal and external issues, Garuda Indonesia has experienced more severe financial difficulties than any other airline listed on the IDX. Garuda Indonesia has struggled to exist in times of crisis, especially during the COVID-19 pandemic, due to its status as a full-service national airline, rising costs, managerial issues, and growing debt.

(Kompas, 2021) The Ministry of State-Owned Enterprises (BUMN) is open about the financial crisis experienced by PT Garuda Indonesia (Persero) Tbk. Restructuring is also an effort to save the airline. The company is known to have debts reaching IDR 70 trillion or around USD 4.5 billion. On the other hand, Garuda Indonesia's revenue is only US\$50 million per month, while its expenses are US\$150 million per month. That means Garuda Indonesia continues to lose USD 100 million or around USD 1.43 trillion (exchange rate of IDR 14,300 per US dollar) every month.

Garuda Indonesia's financial situation is not favorable. The corporation reported a net loss of US\$ 898.65 million in the first half of 2021, or IDR 12.85 trillion in rupiah terms. Since the first quarter of 2021, the record loss has even continued to grow, reaching US\$ 384.35 million, or IDR 5.57 trillion. However, Garuda's debt has skyrocketed to IDR 70 trillion, which is the main issue of the litigation process the company is facing (Resia, 2021). Much of this borrowing is the result of aircraft lease fees that were misstated in the company's financial statements in previous

years. Aircraft lease agreements with values above the market average are a form of mismanagement, according to statements by the Ministry of SOEs (Aksara et al., 2023). In addition, one of the causes of inefficiency is the use of a fleet that is technically unfit to be operated by Garuda.

(CNN Indonesia, 2021) Irfan Setiaputra, president and director of Garuda Indonesia, disclosed that the company's debt had grown to IDR 70 trillion and was growing by IDR 1 trillion each month. The company's debt is a result of its revenue not being sufficient to cover its operating costs. Irfan estimates that it will only make about US\$56 million in May 2021. However, Garuda Indonesia still owes US\$56 million for leasing aircraft, US\$20 million for maintaining the aircraft, US\$20 million for avtur, and US\$20 million for paying staff salaries.

In actuality, Garuda Indonesia's issues persisted from 2020 to the present. According to Toto, the company's current issues are actually more complex than those from prior years. The current issue is a result of both poor management and the decline in demand brought on by the COVID-19 pandemic (Lalita Kusuma & Purnamasari, 2023). The international airline industry lost more than \$100 billion in 2020, with average sales dropping by up to 90%, according to the International Air Transport Association (IATA).

Table 1. PT Garuda Indonesia Tbk Financial Report 2020 – 2023 (In Millions USD)

Year	Total Assets	Total Liabilities	Total Equity	Revenue Business	Expenses Operating	Net Profit Before Tax
2020	8,071,631,920	9,572,288,493	1,500,656,573	1,012,487,171	2,258,192,383	2,022,143,245
2021	4,788,905,182	10,094,038,049	5,305,132,867	783,756,501	1,739,927,381	3,811,567,610
2022	4,146,684,195	4,799,715,041	653,030,846	1,226,733,482	1,595,222,902	3,818,970,707
2023	4,590,290,948	5,023,457,828	433,166,880	1,907,295,060	1,739,635,495	220,467,399

Source: Indonesia Stock Exchange (Financial Statements of PT Garuda Indonesia Tbk)

2. Literature Review

2.1 Financial Statement

The end result of recording company transaction data is a financial report (Ambarsari, 2020). Given the importance of financial statements, every business needs its own financial statements to evaluate its financial health. According to the Statement of Financial Accounting Standards (PSAK) No.1 in Hery (2015: 5), the purpose of financial statements is to give information about a company's financial status that many users can use to help them make decisions (Mayasirah, 2021).

When business transactions are recorded, the end product is the financial report. Every business must have this report in order to track and comprehend its financial situation because of its significance. Harahap (2013: 105) asserts that the financial statements display the state of the business's finances as of a given date (balance sheet) or as of a specific time period (profit and loss) (Saiful, 2024). Usually made per three or six months according to internal needs, while the annual report provides a broader picture (Syaharman & Si, 2021).

2.2 Financial Distress

Financial distress prediction is a useful tool in evaluating the business continuity of a company (Lau, 2021). Auditors can assess the company's business continuity by using financial distress predictions. Similarly, by taking corrective action, companies that anticipate financial distress can prevent bankruptcy. Poor management of the company's foundation can lead to decreased performance and a number of other problems, including financial difficulties (Nadya Salsabillah et al., 2024).

Financial distress is the period of financial collapse preceding insolvency or liquidation, according to Rudianto (2013: 20) (Goh, 2023). The company's incapacity or lack of funds to fulfil its responsibilities on time is a sign of financial distress.

3. Material and Methods

3.1 Materials

PT Garuda Indonesia Tbk (GIAA) is an Indonesian airline that has its headquarters at Jl. M1, Office Area Garuda City Center Building Soekarno-Hatta International Airport Cengkareng zip code 19120, Indonesia. The airline was founded on January 26, 1949 with the initial name Indonesia Airways which later changed to Garuda Indonesia.

Garuda Indonesia is a State-Owned Enterprise (SOE) in the aviation sector. The company serves more than 80 domestic and international destinations. As one of the largest national airlines, Garuda Indonesia is committed to always providing high-quality services by emphasizing Indonesian hospitality.

3.2 Methods

In this paper, we employ quantitative descriptive research to evaluate the probability of financial difficulty for PT Garuda Indonesia Tbk. between 2020 and 2023. to use a number of prediction models, including Grover, Taffler, and Springate, to characterise and evaluate the company's financial status and determine the probability of financial hardship. The company's published annual financial statements and other trustworthy sources are the primary sources of secondary data used in this study (Nor Latifah et al., 2024).

We use numerical information that can be viewed or analyzed statistically. The data used in this study comes from secondary sources, information that can be accessed and collected from official company publications, namely the financial statements of PT Garuda Indonesia Tbk which are released regularly.

The population in this study is a collection of items that have specific characteristics with topics and serve as the basis for analysis and drawing conclusions (Marlina, 2019). The population here is PT Garuda Indonesia TBK which is listed on the Indonesia Stock Exchange in the period 2020-2023. The saturated sample research technique is used to analyze data from the annual financial statements of PT Garuda Indonesia Tbk over a four-year period to make conclusions on financial distress prediction studies.

3.2.1 Metode Grover

Grover's model was developed by revisiting the Altman Z-Score. Jeffrey S. Grover used a sample from Altman's 1968 model and added 13 new financial ratios. This study involved 70 companies, consisting of 35 that went bankrupt and 35 that did not, in the period 1982-1996 (Methods et al., 2024) resulting in the following function:

$$G - Score = 1.650X_1 + 3.404X_2 - 0.016X_3 + 0.057$$

Description :

x_1 = Working capital/Total assets

x_2 = Earnings before interest and taxes/Total assets

x_3 = Net income/Total assets

3.2.2 Taffler

The Taffler model measures the ability of the company's assets to generate pre-tax profits to pay short-term debt. This bankruptcy analysis uses four ratios in its calculations (Oktaviani, 2024).

$$T = 0.53X_1 + 0.13X_2 + 0.18X_3 + 0.16X_4$$

Description:

T = Bankruptcy Index

x_1 = Net income before tax / Current Debt

x_2 = Current assets / Current debt

x_3 = Current Debt / Total Assets

x_4 = Sales / Total Assets

3.2.3 Metode Springate

Using a Multiple Discriminant Analysis (MDA) approach, Springate developed a bankruptcy prediction model in 1978. There were 19 financial ratios that made up the original S-Score; however, after testing, four key ratios were selected to distinguish between bankrupt and non-bankrupt businesses (Gita Mustika & Ratnawaty Marginingsih, 2024). The accuracy of this model is 92.5%. The following is the final model:

$$S - Score = 1.03X_1 + 3.07X_2 + 0.66X_3 + 0.4X_4$$

Description:

X_1 = Working capital to total assets ratio

X_2 = Ratio of earnings before interest and taxes to total assets

X_3 = Ratio of profit before tax to current debt

X_4 = Sales to total assets ratio

The Grover technique is employed because it can produce forecasts that are more accurate than those of a number of other models, particularly when evaluating the financial health of the business by taking asset efficiency and profitability into account. In the meantime, the taffler approach was selected due to the fact that it is especially made

to evaluate the financial stability of the company by evaluating its profitability, liquidity, and leverage, which makes it appropriate for examining businesses in the aviation sector. Then, by taking into account important financial measures like profitability and operational efficiency, the springate approach is employed since it is effective at identifying businesses that may face financial issues.

Combining these three approaches allows the study to produce more thorough and precise findings when evaluating PT Garuda Indonesia's financial health over the course of the study.

4. Results and Discussion

4.1 Result

PT Garuda Indonesia, Tbk, one of the businesses listed on the Indonesia Stock Exchange (IDX), is the focus of this study. Because the sample employed in this study is saturated—that is, in the form of PT Garuda Indonesia, Tbk's financial statements from 2020 to 2023—there is only 1 (one) sample.

4.1.1 Grover Method Calculation

4.1.1.1 Working Capital to Total Assets (X_1)

Compute The working capital to total assets ratio displays the proportion of assets that are net working capital. A high ratio indicates good liquidity, while a low or negative ratio suggests potential liquidity problems. The following is the formula:

$$X_1 = \frac{\text{Working Capital}}{\text{Total Assets}}$$

These are the outcomes of PT Garuda Indonesia Tbk's 2020–2023 working capital vs total assets computation.:

Table 2. Working Capital to Total Assets (x_1) (In Millions USD)

Year	Working Capital	Total Assets	X_1
2020	-2,968,663,321	8,071,631,920	-0.3677
2021	-4,509,830,809	4,788,905,182	-0.9417
2022	-322,825,150	4,146,684,195	-0.0778
2023	-293,317,723	4,590,290,948	-0.0638

Source: Data processed by researchers, 2025

Based on the table, the ratio of working capital to total assets (x_1) of PT Garuda Indonesia Tbk shows a negative value every year. In 2020, the x_1 ratio was -0.3677, worsening to -0.9417 in 2021. In 2022 and 2023 the ratio improved to -0.0778 and -0.0638, but remained negative. The working capital deficit and reliance on short-term debt indicate the need for a strong financial strategy to achieve positive liquidity.

4.1.1.2 Earnings before Interest and Taxes to Total Assets (X_1)

The ratio of EBIT to total assets measures the company's efficiency in generating operating profit from its assets. The higher the ratio, the more effectively the company utilizes assets to achieve profits (Arum et al., 2022). The formula is as follows:

$$X_2 = \frac{\text{Earnings before Interest and Taxes}}{\text{Total Assets}}$$

The results of PT Garuda Indonesia Tbk's 2020–2023 earnings before interest and taxes on total assets are as follows:

Table 3. Earnings before Interest and Taxes to Total Assets (X_2) (In Millions USD)

Year	Earnings before Interest and Taxes	Total Assets	X_2
2020	2,063,840,092	8,071,631,920	0.2556
2021	4,079,735,741	4,788,905,182	0.8519
2022	4,021,086,683	4,146,684,195	0.9675
2023	201,515,583	4,590,290,948	0.0439

Source: Data processed by researchers, 2025

Based on the table, the ratio of earnings before interest and taxes to total assets (x_2) of PT Garuda Indonesia Tbk increased from 0.2556 in 2020 to 0.8519 in 2021 and 0.9675 in 2022. However, in 2023 the ratio dropped dramatically to 0.0439, indicating an improved performance in 2021-2022 which then weakened significantly in 2023.

4.1.1.3 Net Income to Total Assets (x_3)

Return on Assets (ROA) measures a company's efficiency in generating profits from its assets. A high ROA indicates assets are being used effectively, while a low ROA signals a lack of asset productivity. The formula is as follows:

$$X_3 = \text{Net Income} / \text{Total Assets}$$

The outcomes of PT Garuda Indonesia Tbk's 2020–2023 net profit calculation on total assets are as follows :

Table 4. Net Income to Total Asset (x_3) (In Millions USD)

Year	Net Income	Total Assets	X_3
2020	2,022,143,245	8,071,631,920	0.2505
2021	3,811,567,610	4,788,905,182	0.7959
2022	3,818,970,707	4,146,684,195	0.9209
2023	220,467,399	4,590,290,948	0.048

Source: Data processed by researchers, 2025

Based on the table, the ratio of net profit to total assets (x_3) of PT Garuda Indonesia Tbk increased from 0.2505 in 2020 to 0.7959 in 2021 and 0.9209 in 2022. However, in 2023 the ratio dropped dramatically to 0.0480, indicating an improved performance in 2021-2022 which then decreased significantly in 2023.

4.1.2 Taffler Method Calculation

4.1.2.1 Current Debt to Net Profit Before Tax (x_1)

Present Debt to Pre-Tax Net Profit (x_1) The ratio of profit before taxes to current debt indicates the company's capacity to meet short-term obligations with earnings before taxes. The ratio rises as the company's capacity to settle its debts increases. The formula is as follows :

$$X_1 = \text{Net Profit before Tax} / \text{Current Debt}$$

The outcomes of PT Garuda Indonesia Tbk's 2020–2023 net profit before tax calculation versus current debt are as follows :

Table 5. Net Profit before Tax to Current Debt (x_1) (In Millions USD)

Year	Net Profit Before Tax	Current Debt	X_1
2020	2,063,840,092	3,402,501,490	0.6065
2021	4,079,735,741	4,698,884,971	0.0402
2022	4,021,086,683	1,016,149,223	3.9571
2023	201,515,583	810,926,220	0.2485

Source: Data processed by researchers, 2025

Based on the table, the ratio of profit before tax to current debt (x_1) of PT Garuda Indonesia Tbk fell from 0.6065 in 2020 to 0.0402 in 2021. However, in 2022 it rose significantly to 3.9571, indicating a strong ability to cover current debt. In 2023, the ratio fell again to 0.2485, indicating a decline in managing debt compared to the previous year.

4.1.2.2 Current Assets to Current Debt (x_2)

The ratio of current assets to current debt measures the company's ability to pay off short-term liabilities with liquid assets. The higher the ratio, the better the company is at meeting its financial obligations. The formula is as follows:

$$X_2 = \text{Current Assets} / \text{Current Debt}$$

The following are the results of the calculation of current assets against current debt at PT Garuda Indonesia Tbk in 2020-2023:

Table 6. Current Assets to Current Debt (X_2) (In Millions USD)

Year	Current Assets	Current Liabilities	X_2
2020	433,838,169	3,402,501,490	0.1275
2021	189,054,162	4,698,884,971	0.0402
2022	6,93,324,073	1,016,149,223	0.6823
2023	517,608,497	810,926,220	0.6382

Source: Data processed by researchers, 2025

Based on the table, the ratio of current assets to current debt of PT Garuda Indonesia Tbk fell from 0.1275 in 2020 to 0.0402 in 2021, indicating financial distress. However, the ratio increased to 0.6823 in 2022 and 0.6382 in 2023, signaling an improvement in the ability to cover current debt.

4.1.2.3 Current Debt to Total Assets (x_3)

The ratio of current debt to total assets shows the proportion of short-term liabilities to the company's assets. A high ratio signals a heavy reliance on short-term debt, potentially increasing financial risk. The formula is as follows:

$$X_3 = \text{Current Debt} / \text{Total Assets}$$

The outcomes of PT Garuda Indonesia Tbk's 2020–2023 current debt to total asset calculation are as follows:

Tabel 7. Current Debt to Total Assets (x_3) (In Millions USD)

Year	Current Debt	Total Assets	X_3
2020	3,402,501,490	8,071,631,920	0.4215
2021	4,698,884,971	4,778,905,182	0.9832
2022	1,016,149,223	4,146,684,195	0.2450
2023	810,926,220	4,590,290,948	0.1766

Source: Data processed by researchers, 2025

Based on the table, the ratio of current debt to total assets of PT Garuda Indonesia Tbk rose from 0.4215 in 2020 to 0.9832 in 2021, indicating a high dependence on short-term debt. However, the ratio declined to 0.2450 in 2022 and 0.1766 in 2023, indicating an improved financial structure.

4.1.2.4 Sales to Total Assets (x_4)

The ratio of sales to total assets measures the efficiency of a company in generating revenue from its assets. The higher the ratio, the more effective the use of assets in creating sales, reflecting operational efficiency. The formula is as follows:

$$X_4 = \text{Sales} / \text{Total Assets}$$

The following are the results of the calculation of sales to total assets at PT Garuda Indonesia Tbk in 2020-2023:

Tabel 8. Sales to Total Assets (X_4) (In Millions USD)

Year	Sales	Total Assets	X_4
2020	1,102,487,171	8,071,631,920	0.1254
2021	783,756,501	4,778,905,182	0.1636
2022	1,226,733,482	4,146,684,195	0.2958
2023	1,907,295,060	4,590,290,948	0.4155

Source: Data processed by researchers, 2025

Based on the table, the ratio of sales to total assets of PT Garuda Indonesia Tbk increased from 0.1254 in 2020 to 0.4155 in 2023. This increase shows an increase in operational efficiency in utilizing assets to generate sales.

4.1.3 Springate Method Calculation

4.1.3.1 Working Capital to Total Assets (x_1)

The ratio of working capital to total assets shows the proportion of assets that are net working capital. A high ratio indicates good liquidity, while a low or negative ratio may indicate financial distress. The formula is as follows:

$$X_1 = \frac{\text{Working Capital}}{\text{Total Assets}}$$

The following are the results of the calculation of working capital against total assets at PT Garuda Indonesia Tbk in 2020-2023:

Table 9. Working Capital to Total Assets (x_1) (In Millions USD)

Year	Working Capital	Total Assets	X_1
2020	-2,968,663,321	8,071,631,920	- 0.3677
2021	-4,509,830,809	4,788,905,182	- 0.9417
2022	-322,825,150	4,146,684,195	- 0.0778
2023	-293,317,723	4,590,290,948	- 0.0638

Source: Data processed by researchers, 2025

Based on the table, the ratio of working capital to total assets (x_1) of PT Garuda Indonesia Tbk remains negative every year, indicating a working capital deficit and reliance on short-term debt. In 2020, the x_1 ratio is -0.3677, worsening to -0.9417 in 2021. In 2022 and 2023, it improved to -0.0778 and -0.0638, but remained negative. The company needs a strong financial strategy to achieve positive liquidity.

4.1.3.2 Earnings before Interest and Taxes to Total Assets (x_2)

The ratio of EBIT to total assets measures a company's efficiency in generating operating profit from its assets. The higher the ratio, the more effectively assets are used to generate profits. The formula is as follows:

$$X_2 = \frac{\text{Earnings before Interest and Taxes}}{\text{Total Assets}}$$

The outcomes of PT Garuda Indonesia Tbk's 2020–2023 earnings before interest and taxes on total assets are as follows :

Table 10. Earnings before Interest and Taxes to Total Assets (x_2) (In Millions USD)

Year	Earnings before Interest and Taxes	Total Assets	X_2
2020	2,063,840,092	8,071,631,920	0.2556
2021	4,079,735,741	4,788,905,182	0.8519
2022	4,021,086,683	4,146,684,195	0.9675
2023	201,515,583	4,590,290,948	0.0439

Source: Data processed by researchers, 2025

The table indicates that PT Garuda Indonesia Tbk's profits before interest and tax to total assets (x_2) ratio increased from 0.2556 in 2020 to 0.9675 in 2022, indicating better financial performance. But in 2023, the ratio fell sharply to 0.0439, indicating a substantial downturn.

4.1.3.3 Profit before Tax to Current Debt (x_3)

The ability of the business to pay short-term obligations with operating profit is gauged by the ratio of profit before taxes to current debt. The better a corporation is positioned financially to pay off short-term debt, the higher the ratio. The following is the formula:

$$X_3 = \frac{\text{Profit before Tax}}{\text{Current Debt}}$$

The outcomes of PT Garuda Indonesia Tbk's 2020–2023 profit before tax calculation versus current debt are in Table 11.

Table 11. Profit before Tax to Current Debt (x_3) (In Millions USD)

Year	Profit before Tax	Current Debt	X_3
2020	2,063,840,092	8,071,631,920	0.2556
2021	4,079,735,741	4,788,905,182	0.8519
2022	4,021,086,683	4,146,684,195	0.9675
2023	201,515,583	4,590,290,948	0.0439

Source: Data processed by researchers, 2025

Based on the table, the ratio of earnings before interest and tax to total assets (x_2) of PT Garuda Indonesia Tbk increases from 0.2556 in 2020 to 0.9675 in 2022, reflecting financial improvement. However, in 2023 the ratio dropped dramatically to 0.0439, signaling a significant decline.

4.2 Discussion

4.2.1 Grover Method

The following step involves entering the results into the Grover equation model based on the outcomes of the calculation of the three variables utilised in the Grover method. The following are the Grover method equation's model and outcomes:

$$G - Score = 1,650X_1 + 3,404X_2 - 0,016X_3 + 0,057$$

Description:

X_1 = Working Capital / Total Assets

X_2 = Earnings Before Interest and Taxes (EBIT) / Total Assets

X_3 = Return On Assets (Net Income / Total Assets)

The cut off value for the Grover method is :

If $G \leq -0.02$, the company is categorized as bankrupt or predicted to have the potential for bankruptcy,

If $G \geq 0.01$ then the company is categorized as healthy or predicted to have no potential bankruptcy.

The following is a table of the results of the analysis of financial distress predictions using the Grover method at PT Garuda Indonesia Tbk. 2020 - 2023:

Table 12. Results of Financial Distress Analysis with the Grover Method at PT Garuda Indonesia Tbk. Year 2020 - 2023

Year	1.650 X_1	3.404 X_2	0.016 X_3	0.057	G-Score	Potential
2020	-0.3677	0.2556	0.2505	0.057	0.2532	healthy
2021	-0.9417	0.8519	0.7959	0.057	1.2763	healthy
2022	-0.0778	0.9675	0.9209	0.057	3.0932	Healthy
2023	-0.0638	0.0439	0.0480	0.057	-0.0136	Distress

Source: Data processed by researchers, 2025

In 2020, PT Garuda Indonesia Tbk has a G-Score of 0.02532, which indicates a healthy financial condition based on the cutoff value set. Although the ratio of earnings before interest and tax (x_2) of 0.2556 and net profit before tax (x_3) of 0.2505 shows positive performance, working capital to total assets (x_1) is negative (-0.3677). This reflects a financial condition that is still good even though there is a working capital deficit.

In 2021, the G-Score increased to 1.2763, remaining in the healthy company category. Positive performance can be seen from the increase in earnings before interest and tax (x_2) to 0.8519 and net profit before tax (x_3) to 0.7959, although working capital to total assets (x_1) remains negative (-0.9417). Nevertheless, the company remains in good financial condition.

In 2022, the G-Score reached 3.0931, indicating a healthy financial condition. Earnings before interest and tax (x_2) rose to 0.9675, while net income before tax (x_3) increased to 0.9209. Meanwhile, working capital to total assets (x_1) was still negative (-0.0778), but better than the previous year. This strengthens the indication of improving financial conditions.

However, in 2023, the G-Score drops dramatically to -0.0136, indicating an unhealthy financial condition or risk of bankruptcy. Although earnings before interest and tax (x_2) and net income before tax (x_3) were still positive at 0.0439 and 0.0480, working capital to total assets (x_1) remained negative (-0.0638). This situation indicates increasing financial pressure and the need for strategic measures to improve the company's financial condition.

4.2.2 Taffler Method

After the four variables utilised in the Taffler method have been calculated, the findings must be entered into the Taffler equation model. Here are the equation model and the Taffler method equation's outcomes :

$$T = 0,53X_1 + 0,13X_2 + 0,18X_3 + 0,16X_4$$

Description:

T = Bankruptcy index

X_1 = Net Profit before Tax / Current Debt

X_2 = Current Assets / Current Debt

X_3 = Current Debt / Total Assets

X_4 = Sales / Total Assets

The cut off value for the Taffler method is :

If $T < 0.2$, the company is categorized as bankrupt or predicted to have the potential for bankruptcy,

If $0.2 \leq T \leq 0.3$ then the company is categorized as Gray Area

If $T > 0.3$ then the company can be categorized as healthy.

The following is a table of the results of the analysis of financial distress predictions using the Taffler method at PT Garuda Indonesia Tbk. 2020 - 2023:

Table 13. Results of Financial Distress Analysis with the Taffler Method at PT Garuda Indonesia Tbk. Year 2020 - 2023

Year	0.53 X_1	0.13 X_2	0.18 X_3	0.16 X_4	T	Potential
2020	0.6065	0.1275	0.4215	0.1254	0.4339	Healthy
2021	0.8682	0.0402	0.9832	0.1636	0.6685	Healthy
2022	3.9571	0.6823	0.2450	0.958	2.2773	Healthy
2023	0.2485	0.6382	0.1766	0.4155	0.3129	Healthy

Source: Data processed by researchers, 2025

PT Garuda Indonesia Tbk's 2020 T value of 0.4339 indicates that it is in good financial standing based on the cutoff value. The main pillars of support are the current debt to total assets (0.4215), current assets to current debt (0.1275), net profit before taxes to current debt (0.6065), and sales to total assets (0.4339) ratios. In 2021, the T value increased to 0.6685, still within the permissible range. Although the ratio of current assets to current debt decreased (0.0402), this growth was supported by the ratios of net profit before taxes to current debt (0.8682), current debt to total assets (0.9832), and sales to total assets (0.1636).

A stronger financial situation was indicated in 2022 when the T-value increased to 2.2773. This was caused by a sharp rise in the net profit before tax to current debt ratio, which reached 3.9571, along with other ratios. Even if the T-value is still quite robust, it falls to 0.3129 by 2023. The ratios of current debt to total assets (0.1766), current assets to current debt (0.6382), net profit before tax to current debt (0.2485), and sales to total assets (0.4155) are the primary determinants. These decreases do, however, indicate financial difficulties that should be monitored.

4.2.2 Springate Method

The following stage involves entering the results into the Springate equation model based on the computation of the four variables utilised in the Springate method. The following are the equation model and the Springate method equation's outcomes:

$$S - Score = 1,03X_1 + 3,07X_2 + 0,66X_3 + 0,4X_4$$

Description:

X_1 = Working Capital / Total Assets

X_2 = Earnings before Interest and Taxes / Total Assets

X_3 = Profit before Tax / Current Debt

X_4 = Sales / Total Assets

The cut off value for the Springate method is:

If $S < 0.862$, the company is categorized as bankrupt or predicted to have the potential for bankruptcy,

If $0.862 < S < 1.062$ then the company is categorized as Gray Area

If $S > 1.062$ then the company can be categorized in a safe zone (healthy).

Table 14 Results of Financial Distress Analysis with the Springate Method at PT Garuda Indonesia Tbk. Year 2020-2023

Year	1.03 X_1	3.07 X_2	0.66 X_3	0.4 X_4	S-Score	Potential
2020	-0.3677	0.2556	0.6065	0.1254	0.8564	Distress
2021	-0.9417	0.8519	0.8682	0.1636	1.8300	Healthy
2022	-0.0778	0.9675	3.9571	0.2958	5.6200	Healthy
2023	-0.0638	0.0439	0.2485	0.4155	0.3992	Distress

Source: Data processed by researchers, 2025

PT Garuda Indonesia Tbk was classified as unhealthy (distressed) in 2020 with an S-Score of 0.8564. This is caused by working capital to total assets (-0.3677), earnings before tax on current debt (0.6065), sales to total assets (0.1254), and earnings before interest and tax (-0.9417).

With an increase to 1.8300 in 2021, the S-Score indicated sound financial standing. Sales to total assets (0.1636), earnings before tax on current debt (0.8682), and earnings before interest and tax (0.8519) are the primary drivers; nonetheless, working capital to total assets is still negative (-0.9417).

The S-Score increased to 5.6200 in 2022, a sign of improved financial health. Earnings before interest and tax (0.9675), sales to total assets (0.2958), and earnings before tax on current debt (3.9571) all significantly increased to support this development, while working capital to total assets improved to (-0.0778).

But in 2023, the S-Score fell sharply to 0.3992, once more falling into the distress category. While sales to total assets climbed to 0.4155, the contributing elements were working capital to total assets, which remained negative (-0.0638), earnings before interest and tax (0.0439), and earnings before tax to current debt (0.2485). This indicates that there is once again strain on the company's financial situation.

5. Conclusion

Based on research on the prediction of financial distress of PT Garuda Indonesia Tbk in 2020-2023 using the Grover, Taffler, and Springate methods, the following conclusions are obtained: **The Grover method** shows that in 2020-2022, the company's financial condition is quite stable with a score above the 0.01 threshold, indicating a healthy state. However, in 2023 the score drops dramatically below the threshold, indicating the beginning of financial distress. This suggests that despite an earlier recovery, financial stress worsened in 2023. **The Taffler method** provides more positive results than other methods. Throughout 2020-2023, the score remains above the 0.2 threshold, indicating that the company is not experiencing significant financial distress. This indicates that Garuda Indonesia still has good financial capacity to fulfill its short-term obligations, although it still needs to be aware of potential risks. **The Springate method** provides more varied results. In 2020 and 2023, the score is close to the threshold of 0.862, putting the company in the gray zone, meaning there is a risk of financial distress. However, in 2021 and 2022, the scores increased, reflecting improvement before weakening again in 2023. This suggests there are financial fluctuations that indicate challenges to overcome. From the three methods, it can be concluded that Garuda Indonesia's financial condition improved in 2021-2022 but came back under pressure in 2023. The Grover method is more sensitive in detecting financial distress, while Taffler is more optimistic. The Springate method shows financial fluctuations, indicating instability. Therefore, the company needs to take strategic steps to improve its financial structure and reduce the risk of financial distress in the future.

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