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ANALYSIS OF FINANCIAL DISTRESS USING THE ALTMAN Z-SCORE MODEL IN PT SIDO MUNCUL TBK IN THE PERIOD 2020-2022

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ABSTRACT

This research aims to analyze the potential for financial distress in PT Sido Muncul Tbk for the 2020-2022 period by using five financial variables in the Altman Z-Score model. The variables are Working Capital to Total Assets (X1), Retained Earnings to Total Assets (X2), Earnings before Interest and Taxes to Total Assets (X3), Market Value of Common and Preferred Stock to Book Value of Total Debt (X4), and Sales to Total Assets (X5). This research is quantitative with secondary data sources of PT Sido Muncul Tbk. The research data used are annual financial reports for 2020-2022. The annual financial report from the company's official website and the website of the Indonesia Stock Exchange (IDX) This study used the Altman Z-Score method to analyze financial distress in companies. The result is PT Sido Muncul Tbk's increase in the Z-Score value every year with a Z-Score value > 2.99 for 2020-2022. Based on the cut-off point of the Altman Z-Score method for PT Sido Muncul Tbk is in a safe zone. A company with a safe zone is one that the company is a good financial condition and has great potential in developing its business and getting more advanced in business activities over the next few years.
Keywords: Financial Distress, Altman Z-Score, Profitability, Liquidity, Leverage

1. INTRODUCTION

The success of a company's business depends on the company's ability to generate profits or profits in the long term. Profits and losses are one indication that can be used to determine whether a company is right in carrying out its business activities. Companies with the ability to generate good profits can continue their business operations. Therefore, companies must understand the importance of profitability in running their business and develop the best strategy that can help companies to keep making a profit. According to Munawir (2013: 33) Profitability is the company's ability to generate profits during a certain period. Companies with good profitability have an impact on the company's ease in obtaining financing from banks, attracting investors to fund its operations, and to be able to continue to develop its business.

Productivity ability is one of the factors in supporting the success of a business for the company. A productive workforce can help companies achieve their sales targets. The more products are created, the greater the company's opportunity to increase sales, which in turn has an impact on increasing company profits. However, in reality, not a few companies that have been running their business activities for years have had to face bankruptcy due to financial distress that the company experienced which led to bankruptcy. Financial distress occur when a company or individual is unable to generate sufficient income to fulfill or pay its financial obligations.

Financial distress is the initial stage of bankruptcy of a company. Corporate bankruptcy usually begins with a condition of financial difficulties. The condition of financial distress means that the company's financial condition decreases every year. This condition is generally characterized by various conditions. One of them is that the company has had a negative net profit for two consecutive years (Mas'ud and Srengga, 2012). Ignoring the signs of financial distress can be very dangerous for a company's business continuity. In general, it can be interpreted as a failure of the company in carrying out business operations.

Bankruptcy of a company not only harms the company, but can also harm other parties who work with the company. Therefore, an analysis of the prediction of bankruptcy of a company needs to be done in order to get an early warning. Since early the company knows the indications of bankruptcy, the management can immediately carry out an update strategy to prevent bankruptcy. There are several methods that are generally used to detect potential bankruptcy in a company, including the Altman Z-Score, Springate Score, and Zmijewski Score. Bankruptcy

analysis is very popular because of its considerable accuracy in determining bankruptcy predictions. Bankruptcy analysis is used to predict a company as an assessment and consideration of the company's condition in the future.

2. LITERATURE REVIEW

2.1 Financial Distress

Financial distress prediction is a condition in which the business cannot meet its debt obligation and petitions either for reorganization of its debs or liquidation of its debts. (Annuri dan Ruzikna, 2017). According to Curry and Banjarnahor (2018) financial distress is a condition in which a company's finances are in an unhealthy condition or experience a decline prior to bankruptcy or liquidation.

2.2 Profitability

The profitability of a company can be assessed based on profits and assets or capital to be compared. According to (Kasmir 2019: 114) the profitability ratio is a ratio to assess a company's ability to make a profit in a certain period. This ratio also provides a measure of the effectiveness of a company's management. This is seen based on the profit generated from sales or from investment income. According to (Prihadi 2020: 166), profitability is the ability to generate profits.

2.3 Liquidity

This ratio compares short-term liabilities with the company's short-term resources available to meet these obligations. This liquidity ratio also describes the company's current financial competence and the company's ability to remain competent when facing problems (Triwahyuningtyas, 2012). According to Sukamulja (2019), the liquidity ratio reflects a company's ability to pay off its short-term obligations, or the company's ability to convert its assets into cash. This ratio is very important for short-term creditors because it is able to show short-term credit risk and at the same time shows the efficient use of the company's short-term assets.

2.4 Leverage

According to Sigit in Rahmayanti and Hadromi (2017), the leverage ratio is a ratio that describes a company's ability to fulfill its obligations both short term and long term. This ratio analysis is important for measuring a company's ability to pay debts if one day the company is liquidated or dissolved.

The leverage ratio shows the proportion of a company's debt. The higher the proportion of debt to funding the company's assets, the riskier a business will be. There are several companies that have very high debt funding and this is influenced by risky business sector conditions and is influenced by business maturity. The more mature a business is, the more the company will tend to obtain funding from debt (Sukamulja, 2019)

3. RESEARCH METHOD

The object used in this study is PT Sido Muncul Tbk using the company's financial statements for the 2020-2022 period which are listed on the Indonesia Stock Exchange (IDX). This study uses five financial variables in the Altman Z-Score model, namely Working Capital to Total Assets / Working Capital to Total Assets (X1), Retained Earnings to Total Assets (X2), Profit Before Interest and Taxes to Total Assets / Earning Before Interest and Taxes (EBIT) to Total Assets (X3), Market Value of Common and Preferred Stock to Book Value of Total Debt / Market Value Equity to Book Value of Liabilities (X4) and Sales to Total Assets / Sales to Total Assets (X5). The type of data used in this study is quantitative data and the data source used is secondary data in the form of Annual Financial Reports for the 2020-2022 period which have been published by PT Sido Muncul Tbk through the company's official website and which have been listed on the Indonesia Stock Exchange website at www.idx.co.id.

The analysis technique used in this research is descriptive analysis technique. In descriptive analysis techniques, the authors use tables and graphs to simplify and clarify the delivery of research results.

$$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 1X5$$

Description:
Z   : Overall Index
X1   : Working Capital to Total Asset (Working Capital / Total Assets)

X2   : Retained Earnings to Total Asset (Retained earnings / Total Assets)
X3   : Earning Before Interest and Taxes (EBIT) to Total Asset
X4   : Market Value Equity to Book Value of Liabilities
X5   : Sales to Total Asset (Sales / Total Assets)

With the cut-off point as follows:
a. If the Z value < 1.8 , it is a bankrupt company
b. If the value is $1.8 < Z < 2.99$ then it is included in the gray area (it cannot be determined whether the company is healthy or bankrupt).
c. If the Z value > 2.99, it is a healthy company.

The ratios used in the Altman method:
1. Working Capital on Total Assets (X_1)

$$X_1 = \frac{\text{Current Assets} - \text{Current Liabilties}}{\text{Current Assets} + \text{Non Current Assets}}$$

Using research indicators that have been done by Gilrita, Moch. Dzulkirom and M.G Wi Endang N.P in 2015, this variable is used to measure the company's ability to meet its short-term obligations and to measure the level of liquidity of the company's assets. A working capital with a positive value indicates the company's ability to pay its bills, whereas if a company has a negative capital value, the company will experience difficulties in fulfilling its obligations.

2. Retained Earnings on Total Assets (X_2)

$$X_2 = \frac{\text{Retained Earnings}}{\text{Current Assets} + \text{Non Current Asset}}$$

Using research indicators that have been done by Gilrita, Moch. Dzulkirom and M.G Wi Endang N.P in 2015, this variable is a measurement of the company's cumulative profitability or retained earnings which reflects the age of the company and the strength of the company's earnings. Low retained earnings may indicate a bad business year or a reduced lifespan for the company.

3. Profit Before Interest and Tax on Total Assets (X_3)

$$X_3 = \frac{\text{Profit Before Interest and Tax}}{\text{Current Assets} + \text{Non Current Asset}}$$

Using research indicators that have been done by Gilrita, Moch. Dzulkirom and M.G Wi Endang N.P in 2015, the variables included in this profitability ratio have a function to measure the company's ability to generate profits from the assets used or can be said as a measure of the productivity of company assets.

4. Market Value of Common and Preferred Stock to Book Value of Total Debt (X_4)

$$X_4 = \frac{\text{Market Value of Common \& Preferred Stock}}{\text{Book Value of Total Debt}}$$

Using research indicators that have been done by Gilrita, Moch. Dzulkirom and M.G Wi Endang N.P in 2015, variables are used to describe solvency (leverage) in the form of a company's long-term financial ability and to determine the amount of company capital used to bear debt.

5.   Sales of Total Assets (X_5)

$$X_5 = \frac{Sales}{Current\ Assets + Non\ Current\ Asset}$$

Using research indicators that have been done by Gilrita, Moch. Dzulkirom and M.G Wi Endang N.P in 2015, this variable serves to measure management's ability to use assets to generate sales and illustrates the level of turnover of all company assets.

4.   RESULTS AND DISCUSSION

PT Sido Muncul Tbk is a traditional herbal medicine and pharmaceutical company using the latest machines. Initially, Sido Muncul was a home industry and slowly developed into the big and well-known company it is today. In 1951, Sido Muncul was started. In 1970 a limited partnership was formed under the name CV Sido Muncul Jamu & Pharmaceutical Industries and then in 1975 it was changed to a limited liability company under the name PT Sido Muncul Jamu and Pharmacy Industries until now.

The following is research data from the financial statements of PT Sido Muncul Tbk in the form of components for calculating the five variable Z-Score models which are summarized in tabular form to facilitate the calculation and analysis process, namely as follows:

Table 1. Components of Calculation of 5 Variables Z-Score Method PT Sido Muncul Tbk

Account Name	2020	2021	2022
Current Assets	2,052,081,000,000	2,244,707,000,000	2,194,242,000,000
Total Assets	3,849,516,000,000	4,068,970,000,000	4,081,442,000,000
Current Liabilities	560,043,000,000	543,370,000,000	2,052,081,000,000
Working Capital	1,492,038,000,000	1,701,337,000,000	142,161,000,000
EBIT	1,199,548,000,000	1,613,231,000,000	1,419,852,000,000
Price stock per shares (Closing Price)	755	865	805
Number of shares outstanding	30,000,000,000	30,000,000,000	30,000,000,000
Total Liabilities	627,776,000,000	597,785,000,000	575,967,000,000
Net Sales	3,335,411,000,000	4,020,980,000,000	3,865,523,000,000

Source: Financial Statement PT Sido Muncul Tbk

DISCUSSION

Below is a table of working capital and the ratio of working capital to total assets at PT. Sido Muncul Tbk for the 2020-2022 period as follows:

Table 2. Working Capital PT Sido Muncul Tbk Period 2020-2022

Year	Current Asset	Current Liabilities	Working Capital	Change of Working Capital
2020	2,052,081,000,000	560,043,000,000	1,492,038,000,000	-
2021	2,244,707,000,000	543,370,000,000	1,701,337,000,000	14.03%
2022	2,194,242,000,000	2,052,081,000,000	142,161,000,000	-91.64%

Source: Processed data, 2023

Table 3. Working Capital Ratio on Total Assets PT Sido Muncul Tbk Period 2020-2022

Year	Working Capital	Total Assets	Change of Total Assets (%)	Ratio X1	Change of Ratio X1 (%)
2020	1,492,038,000,000	3,849,516,000,000	-	0.388	-
2021	1,701,337,000,000	4,068,970,000,000	5.70%	0.418	7.88%
2022	142,161,000,000	4,081,442,000,000	0.31%	0.035	-91.67%

Source: Processed data, 2023

The ratio of working capital to total assets is the ratio used to measure a company's ability to meet its short-term financial obligations (total current liabilities) by comparing the company's net liquid assets to the company's total assets. Working Capital is the difference between current assets and current liabilities, so the ratio of Working Capital to Total Assets can determine a company's solvency in the short term.

Based on the table above, the ratio of working capital to total company assets shows a positive result in 2020 of 0.388. In 2021 and 2022 also showed positive results, namely 0.418 and 0.035. It can be concluded that the calculation of the ratio of working capital to total assets of PT Sido Muncul Tbk for the 2020-2022 period shows positive results every year. The positive ratio of working capital to total assets indicates that the company is able to meet its short-term obligations.

Table 4. Retained Earnings PT Sido Muncul Tbk Period 2020-2022

Year	Retained Earnings determined its use	Retained Earnings Not specified its use	Retained Earnings
2020	322,984,000,000	750,330,000,000	1,073,314,000,000
2021	322,984,000,000	1,000,451,000,000	1,323,435,000,000
2022	322,984,000,000	1,030,686,000,000	1,353,670,000,000

Source: Processed data, 2023

Table 5. Retained Earning on Total Assets PT Sido Muncul Tbk Period 2020-2022

Year	Retained Earnings	Total Assets	Change of Total Assets (%)	Ratio X2	Change of Ratio X2 (%)
2020	1,073,314,000,000	3,849,516,000,000	-	0.279	-
2021	1,323,435,000,000	4,068,970,000,000	5.70%	0.325	16.65%
2022	1,353,670,000,000	4,081,442,000,000	0.31%	0.332	1.97%

Source: Processed data, 2023

The ratio of retained earnings to total assets is the ratio used to measure a company's ability to generate cumulative profits (profitability). The ratio of retained earnings to total assets can help measure the extent to which a company relies on debt, or leverage.

Based on the table for calculating the ratio of retained earnings to total assets above, it can be explained that in 2020 the results of calculating the ratio of retained earnings to total company assets are positive, namely 0.279. In 2021 and 2022 also show positive values, namely 0.325 and 0.332. This shows that the greater the ratio, the greater the ability of the company's retained earnings in forming company funds and being able to fulfill its debt obligations.

Table 6. EBIT Ratio on Total Assets PT Sido Muncul Tbk Period 2020-2022

Year	EBIT	Total Assets	Change of EBIT (%)	Ratio X3	Change of Ratio X3 (%)
2020	1,199,548,000,000	3,849,516,000,000	-	0.312	-
2021	1,613,231,000,000	4,068,970,000,000	34.49%	0.396	27.23%
2022	1,419,852,000,000	4,081,442,000,000	-11.99%	0.348	-12.26%

Source: Processed data, 2023

The ratio of earnings before interest and/or taxes (EBIT/Earnings Before Interest and Taxes) to total assets is the ratio used to measure a company's performance in generating profit from the company's own assets, before the company makes payments of interest and taxes resulting from the distribution of profit before interest and taxes and total assets. Another purpose of this ratio is to determine how effectively a company is using its assets to generate income.

Based on the table for calculating the ratio of EBIT to total assets above, it can be explained that in 2020, the ratio of EBIT to total company assets shows a positive result of 0.312 with a total asset value of 3,849,516,000,000. In 2021 it also showed positive results with an increase of 0.396 with a total asset value of 4,068,970,000,000. Likewise in 2022 it shows a positive result of 0.348 with a total asset value of 4,081,442,000,000.

From the explanation above, it can be concluded that PT Sido Muncul Tbk obtains a positive value each year in the ratio of EBIT to total assets in 2020, 2021 and 2022. The company has the highest ratio of EBIT to total assets in 2021, which is 0.396. Then in 2022, the ratio of EBIT to the company's total assets will slightly decrease to 0.048. The decrease in this ratio is due to the decrease in the company's EBIT value in 2022.

Table 7. Capital Market Value Own PT Sido Muncul Tbk Period 2020-2022

Year	Price Stock per Shares	Number of shares outstanding	Capital Market Value Own	Change of Capital Market Value Own (%)
2020	755	30,000,000,000	22,650,000,000,000	-
2021	865	30,000,000,000	25,950,000,000,000	14.57%
2022	805	30,000,000,000	24,150,000,000,000	-6.94%

Source: Processed data, 2023

Table 8. Ratio of Own Capital Market Value to Debt Book Value
PT Sido Muncul Tbk Period 2020-2022

Year	Market value Owner's equity	Total Liabilities	Ratio X4	Change of Ratio X4 (%)
2020	22,650,000,000,000	627,776,000,000	36.080	-
2021	25,950,000,000,000	597,785,000,000	43.410	20.32%
2022	24,150,000,000,000	575,967,000,000	41.929	-3.41%

Source: Processed data, 2023

The ratio of the market value of its own capital to the book value of debt is a ratio that shows the company's ability to fulfill its obligations on the market value of equity (shares). Based on the calculation table for the ratio of own capital market value to the book value of debt, it can be explained that in 2020, the company obtained positive results for the ratio of own capital market value to the book value of debt, namely 36.080. In 2020, the company obtained an equity market value of IDR 22,650,000,000,000. In 2021, the company also obtained a positive result of 43,410. This increased ratio is assumed to occur because the market value of the company's own capital in 2021 has increased, while the company's total liabilities or debt have decreased. In 2022, the company obtained a positive result for the ratio of equity market value to debt book value, which was 41.929.

It can be concluded that, PT Sido Muncul Tbk has a stable ratio of equity market value to total debt by obtaining a consistently positive ratio value every year. This means that the company obtains a positive ratio value, namely the company is able to settle obligations with its market value. The ratio of the market value of own capital to the high book value of debt can also be interpreted as high investor confidence in the company's financial strength. The market value of the capital itself is obtained by multiplying the number of ordinary shares outstanding by the market price of the shares.

Table 9. Sales Ratio on Total Assets PT Sido Muncul Tbk Period 2020-2022

Year	Sales	Total Assets	Change of Sales (%)	Ratio X5	Change of Ratio X5 (%)
2020	3,335,411,000,000	1,758,578,169,995	-	1.897	-
2021	4,020,980,000,000	1,588,136,471,649	20.55%	2.532	33.49%
2022	3,865,523,000,000	1,583,979,016,422	-3.87%	2.440	-3.61%

Source: Processed data, 2023

The ratio of sales to total assets is the ratio used to measure the turnover ability of all assets owned by a company in one year. This ratio is also used to measure the amount of sales that can be obtained by the company for every rupiah of assets.

Based on the table for calculating the ratio of retained earnings to total assets above, it is explained that in 2020 the company obtained a positive value for the ratio of sales to total assets, namely 1.897 times. In 2021, the company will obtain a positive value for the ratio of sales to total assets, which is 2.532 times. This value has increased, this increased ratio is assumed to occur because the company experienced an increase in net sales in 2021. Even though the company's total assets decreased in that year, the amount was not significant. In 2022, the company will obtain a positive value for the ratio of sales to total assets, which is 2,440 times. The conclusion that can be drawn from the explanation above is that PT Sido Muncul Tbk annually obtains a positive value for the ratio of sales to total assets. The ratio that has increased due to an increase in the company's sales in 2021 is Rp. 4,020,980,000,000 from the previous year. The highest ratio of sales to total assets was obtained by the company in 2021, which was 2.532 times. Meanwhile, the smallest ratio of sales to total assets of the company was obtained in 2020, which was 1.897 times.

Summary of Research Results

The table below is a table of calculation results showing the values of the five ratios of the Z-Score variable that have been obtained by the company, the value of the company's Z-Score index, and the rating obtained by the company in the 2020-2022 period, namely as follows:

Table 10. Five Ratio Variabel Z-Score PT Sido Muncul Tbk Period 2020-2022

Year	Ratio X1	Ratio X2	Ratio X3	Ratio X4	Ratio X5
2020	0.465	0.390	1.028	23.091	1.897
2021	0.502	0.455	1.308	27.783	2.532
2022	0.042	0.464	1.148	26.835	2.440

Source: Processed data, 2023

Based on the table of five ratios of the Z-Score variable at PT Sido Muncul Tbk for the 2020-2022 period, it can be concluded that the ratio of working capital to total assets (X1) of the company during the study period has a positive value every year. This shows that the company has a good ability to generate working capital from all of its assets. The ratio of retained earnings to total assets (X2) of the company during the study period is positive with a value that continues to increase. This shows that the company has a good ability to generate retained earnings from the company's total assets. A positive retained earnings indicates that the company earns more profit. This shows that the company has a healthy financial condition because the amount of profit exceeds the amount of profit that has been recorded by the company in the previous year. The ratio of EBIT to total assets (X3) of the company is positive every year. The positive ratio of EBIT to total assets indicates that the company has a good ability to generate profit before interest and tax. This indicates that the company has a good financial performance condition because the company is effective in utilizing all of its resources to generate profits.

The ratio of the market value of its own capital to the book value of the company's debt (X4) during the study period is positive and the value is stable. A positive ratio indicates that the company is capable of settling its obligations at market value or from the proportion of owners capital because the company can guarantee all of its debts. The ratio of sales to total assets (X5) of the company during the study period is positive but the value is stable. This positive ratio indicates that the company has a good proportion of total assets so that it can generate income for the company from sales. This indicates that management has been effective in generating sales using company assets.

Table 11. Value of Z-Score PT Sido Muncul Tbk Period 2020-2022

Information	2019	2020	2021
Z-Score	26.871	32.580	30.929
Prediksi	Sehat	Sehat	Sehat

Source: Processed data, 2023

Based on the Z-Score table for PT Sido Muncul Tbk for the 2020-2022 period, it can be explained that the company obtained a positive Z-Score value during the research period. Its value is above the Z-Score model cut-off point classification, namely Z value> 2.99, it is a healthy company. The overall value of the Z-Score which is above the cut off point is assumed because the total current assets of the company are greater than the total current liabilities of the company. In addition, the company also has total assets and current assets which continue to increase every year. Based on the classification of the cut-off point of the Z-Score model, companies with a Z-Score value of > 2.99 are categorized as being in the "safe zone" which means that the company's financial condition is healthy and has great opportunities to progress and develop in its business activities in the next few years.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

From the results of research on the financial performance of PT Sido Muncul Tbk using the Altman Z-Score model for the 2020-2022 period, it can be concluded that:

PT Sido Muncul Tbk obtained an overall Z-Score above the cut off point, namely Z > 2.99 in 2020-2022. The overall Z-Score value above the cut off point is assumed to occur because the company's current assets are greater than the company's total current liabilities, total assets and current assets are continuously increasing, and sales are increasing in 2021.

PT Sido Muncul Tbk has larger current assets than current liabilities. This indicates that the company can meet its short-term financial obligations and is said to be liquid. The company also experienced an increase in total assets and current assets during the study period. The increase in total assets was due to an increase in the company's current assets. The increase in the company's current assets in 2021 was mainly due to an increase in cash and cash equivalents accounts.

PT Sido Muncul Tbk obtains a Z-Score that increases every year. When viewed based on the Altman Z-Score model cut-off point classification, companies with Z > 2.99 are categorized as being in the "safe zone" which means the company is in sound financial condition and has great potential in developing its business and advancing in business activities in the next few years.

5.2 Suggestion

For further research, it is suggested that you can add to the use of other financial distress methods such as Springate, Zmijewski and Grover as a comparative analysis material in predicting the potential for bankruptcy in a company. For further research it is also recommended to extend the research period so that the research findings can show even better and more accurate results.

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(ETS) **P/V** You have used the passive voice in this sentence. You may want to revise it using the active voice.

(ETS) **Article Error** You may need to use an article before this word. Consider using the article **the**.

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Prep. You may be using the wrong preposition.

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P/V You have used the passive voice in this sentence. You may want to revise it using the active voice.

Proper Nouns You may need to use a capital letter for this proper noun.

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Article Error You may need to use an article before this word. Consider using the article **the**.

Run-on This sentence may be a run-on sentence.

Confused You have used either an imprecise word or an incorrect word.

Article Error You may need to use an article before this word. Consider using the article **the**.

Article Error You may need to use an article before this word.

Confused You have used either an imprecise word or an incorrect word.

Proofread This part of the sentence contains an error or misspelling that makes your meaning unclear.

Missing "," Review the rules for using punctuation marks.