IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec

e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

Unraveling the Impact of Covid-19: Financial Distress and Resilience in Indonesian Retail Giants

I Ketut Mangku[1], Andika[*2], Nadia[3], Melli Agustiani[4]
[1,2,3,4] Management Study Program, Faculty of Economics and Business, Janabadra University, Yogyakarta, Indonesia
Correspondence Authors: andika@janabadra.ac.id

Article history: received July 19, 2023; revised August 04, 2023; accepted September 20, 2023

ABSTRACT

This study aimed to analyze whether PT. Matahari Department Store Tbk, PT. Hero Supermarket Tbk, PT. MAP Active Adiperkasa Tbk, and PT. Erajaya Swasembada Tbk experienced financial distress during the period of 2019-2021. The objective was to identify if any of these companies faced financial difficulties and, if so, determine the main variables that caused their financial problems. A sample of four companies from the Supermarket & Convenience Store, Clothing & Textile Retail, and Electronic Retail sub-industries was chosen using purposive sampling. The data analysis used the Altman Z-score (multiple discriminant analysis) method. The results revealed that two companies, PT. Hero Supermarket Tbk in 2019 and 2020, with Z-scores of 2.9510 and 2.5147, respectively, and PT. Matahari Department Store Tbk in 2020-2021, with Z-scores of 2.1954 and 2.6608, fell within the gray area. The gray area indicates that these companies were at risk of financial distress. Among these two companies, PT. Hero Supermarket Tbk faced financial distress in 2021, as indicated by a Z-score of 0.9288. On the other hand, the analysis indicated that two companies, PT. MAP Active Adiperkasa Tbk and PT. Erajaya Swasembada Tbk, remained in a healthy and safe financial condition throughout the three-year period, as their Z-scores were greater than 2.88. In conclusion, the study highlights the importance of financial health analysis for companies operating in the Supermarket & Convenience Store, Clothing & Textile Retail, and Electronic Retail industries. The Altman Z-score proved to be a valuable tool in identifying financial distress risks and assisting decision-makers and stakeholders in making informed and proactive strategies to mitigate potential financial difficulties.

Keyword: Financial distress, bankruptcy, Altman Z-score.

INTRODUCTION

The Indonesian economy faced an extraordinary crisis in 2020, which had never been experienced before. This crisis was caused by the Covid-19 pandemic originating from China and rapidly spreading worldwide, resulting in significant health and humanitarian issues. Policy measures to control the virus spread have limited people's mobility and caused economic recessions in many countries, including Indonesia. The pandemic also triggered uncertainty in the global financial markets and increased the vulnerability of developing countries like Indonesia. This complex situation demands immediate and extraordinary policy responses in the fields of health, economy, and finance [1].

The Ministry of Trade, in its analysis, states that the impact of the Covid-19 pandemic differs from previous years' global economic downturns. Policies to reduce virus transmission, such as quarantine, regional lockdowns, and social distancing, have had a significant impact on various economic sectors, including the retail sector. The retail sector has been one of the hardest-hit segments, with some retail companies experiencing revenue decline and losses [2].

Data from the Indonesian Retail Entrepreneurs Association (Aprindo) shows that by the end of 2020, approximately 1,200 retail stores had closed, with an average of 4-5 stores closing every day. Retail store revenue in the food segment also experienced an average decrease of 60%. However, some small-scale retailers managed to achieve revenue growth, although not as significant. The Bank Indonesia Retail Sales Survey data from 2016 to 2020 reveals varied but generally declining trends, particularly in late 2019 and 2020, indicating

e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

financial difficulties among retail companies in Indonesia [3].

Financial distress refers to a situation in which a company experiences a serious decline in finances before facing the possibility of bankruptcy or liquidation [4]. Signs of financial distress include difficulties in meeting obligations to creditors and operating the business due to insufficient funds. To identify financial difficulties, companies can evaluate and take preventive actions to avoid more severe situations, such as liquidation or bankruptcy [5].

One way to address bankruptcy is through financial analysis that consolidates and sets standards for companies [6]. Several models have been developed as analytical tools to correlate multiple financial ratios and predict the likelihood of financial difficulties in companies [7]. One well-known model is the Altman Z-Score model. Developed by Edward I. Altman in 1968, the model uses Multiple Discriminant Analysis (MDA) to identify key financial ratios that significantly impact the likelihood of bankruptcy. It combines five types of financial ratios to distinguish between potentially bankrupt and non-bankrupt companies. The Altman Z-Score model generates a specific score indicating the probability of a company facing bankruptcy [8], [9].

Financial difficulties serve as an early warning, indicating underlying problems within a company that require immediate attention and resolution [10]. By understanding the financial condition of a company, stakeholders can make informed decisions to improve its situation and prevent potential bankruptcy. Therefore, it is crucial to evaluate companies classified under the Department Store Industry on the Indonesia Stock Exchange (IDX Industrial Classification Version 1.1 2021:22) to assess their current financial conditions and potential future outcomes.

Literature Review

Signal Theory

Signal theory argues that corporate financial decisions are signals sent by managers to investors to consider feedback. These signals form the basis for the company's financial communication policies [11]. In this theory, managers, acting as agents, provide information through financial reports. If the company experiences financial distress, the financial reports can provide information about losses or deteriorating financial conditions, enabling managers to take action before liquidation and also signal external parties about the company's condition in the following year [12].

Financial Distress

According to Altman, Hotchkiss, and Wang [13], there are four terms related to a company experiencing financial difficulties (financial distress): (1) Failure, in an economic sense, means that the realized rate of return on invested capital, considering the sacrifices made for the risks, is significantly lower than the rate of return on similar investments. A somewhat different economic criterion can also be used, namely the insufficiency of revenue to cover the costs of producing that revenue, or the average return on investments continuously being below the company's cost of capital. (2) Insolvency is another term used to describe negative company performance and is generally used for more technical purposes. Technical insolvency occurs when a company is unable to meet its debt obligations when they come due. However, this condition might be a sign or symptom of short-term cash flow or liquidity decline, which could be viewed as temporary rather than chronic. For example, a balance sheet insolvency where the company's total liabilities exceed the fair value of its total assets, this condition is critical enough to require handling, such as restructuring and comprehensive analysis to restore the company's liquidity. (3) Default occurs when a borrower fails to fulfill agreements with creditors as specified in the loan contract. Technical default occurs when a company fails to meet covenants beyond the scheduled payments, such as violating the minimum current ratio or maximum debt ratio. Violations of these loan agreements often lead to renegotiation rather than immediate debt repayment and usually signal deteriorating company performance. (4) Companies are sometimes said to be bankrupt when their debts exceed the fair value of their assets to continue operations, failing to meet obligations to repay their debts when they come due, and so forth, as described above. However, the appropriate term when a company is officially announced by the court (according to bankruptcy laws) is insolvency (bankruptcy). Its assets are seized to settle obligations with creditors and shareholders.

Financial distress is a term used to describe a company's condition when it is experiencing financial difficulties [14]. According to [4] financial distress is a condition that indicates a decline in a company's

e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

performance compared to its financial condition before bankruptcy or liquidation. Financial difficulties are depicted by the inability or unavailability of company funds to pay off maturing obligations [12]. Financial difficulties begin when a company can no longer meet its obligations, especially short-term liabilities. If a company faces liquidity issues, it enters a period of financial distress, and if these financial difficulties are not addressed promptly, they can lead to bankruptcy [15].

According to Altman, Hotchkiss, and Wang, there are several causes of financial distress in companies: (1) poor operating performance and high financial leverage, (2) lack of technological innovation, (3) liquidity and funding shocks, (4) relatively high new business formation rates in certain periods, (5) deregulation of key industries, and (6) unexpected liabilities [13].

Model Altman Z-Score

According to Altman, Hotchkiss, and Wang [13]; and Lewaru & Loupatty [4]; the Altman Z-Score model is:

$$Z = 0{,}012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5$$

X1: *Working Capital to Total Assets*
X2: *Retained Earnings to Total Assets*
X3: *Earnings Before Interest and Tax to Total Assets*
X4: *Market Value of Equity to Total Liabilities*
X5: *Sales to Total Assets*

Working Capital to Total Assets: This ratio indicates the proportion of net working capital to the total assets of the company [16]. It relates to the ability to repay short-term debt that is due soon. The higher this ratio, the higher the company's liquidity. The formula used to calculate it is:

$$Working\ Capital\ to\ Total\ Assets = \frac{Current\ Assets - Account\ receivable}{Total\ Assts}$$

Retained Earnings to Total Assets: This ratio indicates the proportion of retained earnings used by the company to finance its total assets [17]. The larger the ratio figure, the greater the company's ability to finance its assets internally, thus reducing its dependence on external funding sources. It is essential to note that retained earnings are not cash but have already been utilized to fund the company's assets [18]. The formula to calculate retained earnings to total assets is:

$$Retained\ Earnings\ to\ Total\ Assets = \frac{Retained\ Earnings}{Total\ Assets}$$

Earnings Before Interest and Tax to Total Assets: The Earnings Before Interest and Tax to Total Assets ratio indicates a company's ability to generate profit before interest and taxes, using all of its assets or capital [19]. According to Brigham & Ehrhardt, this ratio is called the Basic Earning Power Ratio, which is calculated using the formula [20]:

$$Earnings\ Before\ Interest\ and\ Tax\ to\ Total\ Assets = \frac{Earning\ Before\ Interest\ and\ Tax}{Total\ Assets}$$

Market Value of Equity to Total Liabilities: The use of funds derived from debt or other fixed-cost financing sources serves as a leverage to enhance the company's profit-generating capability. On the other hand, it also creates fixed obligations that must be paid when they are due, regardless of whether the company earns a profit or experiences a loss. According to Gitman and Zutter, financial leverage magnifies risk and return levels through the utilization of fixed-cost financing, such as debt or preferred stock [18]. Considering that preferred stock dividends may not be paid if the company incurs losses, the more appropriate ratio used to measure bankruptcy risk here is the market value of equity to total debt ratio. This ratio demonstrates the company's ability to meet its obligations by using all of its equity if it were to be sold in the capital market. The book value of debt is obtained by combining current liabilities with long-term liabilities.

$$Market\ Value\ of\ Equity\ to\ Total\ Liabilities = \frac{Market\ Value\ of\ Equity}{Book\ value\ of\ Liabilities}$$

IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

Sales to Total Assets: The ratio, calculated by dividing sales by total assets, measures how effectively a company utilizes its overall assets to generate sales [21]. The sales to total assets ratio is also known as assets turnover, indicating the company's efficiency in utilizing its total assets. The higher the asset turnover, the more efficient the company's asset management. To improve efficiency, the company must increase its sales, divest some assets, or combine both approaches [22]. Sales to Total Assets is calculated using the following formula:

$$Sales\ to\ Total\ Assets\ = \frac{sales}{Total\ Assets}$$

In detail, the variables used in the Altman Z-Score model can be presented as shown in the following table 1:

Table 1. Z-Score Value Factors and Their Weights

Factors	Definitions/Statements	Weight of Each Factor
X_1	Working Capital/Total Assets	1,200
X_2	Retained earnings/Total assets	1,400
X_3	Earnings before interest and taxes/Total Assets	3,300
X_4	Market Value of equity/Book value of liabilities	0,600
X_5	Sales/Total Assets	0,999

Source: Altman, Hotchkiss, and Wang [13]

Conceptual Framework

The framework of this research employs the Altman Z-Score model from 1968 [23], which can be depicted as shown in the following Figure 1.

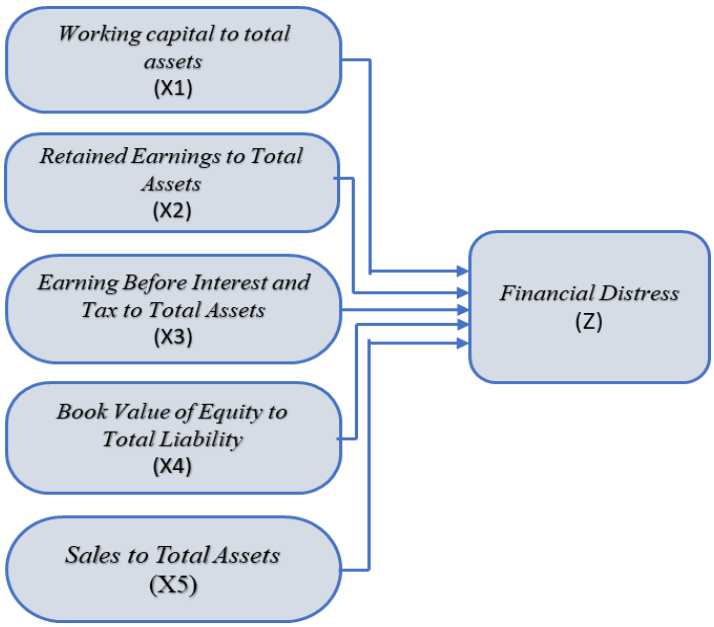


Figure 1. Research Model

The criteria for healthy and bankrupt companies based on the Altman Z-Score model are divided into three categories [9], namely: f the Z-Score value is less than 1.81, the company is considered bankrupt. If the Z-Score value is between 1.81 and 2.99, the company falls into the gray area (it cannot be determined whether the company is healthy or experiencing bankruptcy). If the Z-Score value is greater than 2.99, the company is considered not bankrupt (healthy).

Hypothesis

Based on the literature review and research objectives regarding financial distress with the Altman Z-score method, the proposed hypotheses are:

IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

H_1: Among the four companies selected as samples, there is at least one company in a financial distress position.;

H_2: Out of the five determinants of financial distress, the net working capital to total assets variable contributes the most to indicating the financial distress condition of a company.

METHOD

The object of this research is companies operating in the Consumer Cyclicals and Non-cyclicals sectors that are listed on the Indonesia Stock Exchange during the period 2019-2021. The samples were taken using purposive sampling method with the following criteria: (1) Companies as issuers, listed in the Consumer Cyclicals or Non-Cyclicals sectors on the Indonesia Stock Exchange during the period 2019-2021; (2) Companies as issuers have consecutively submitted audited financial reports for 3 years, from 2019 to 2021; (3) Companies as issuers have not been delisted from the Indonesia Stock Exchange during the period 2019-2021; (4) Suspected to have experienced financial distress during the period from 2019 to 2021. Based on these criteria, the eligible companies as samples are presented in the following Table 1.

Table 1. List of Companies Selected as Samples

No	Company Name	Company Code	IPO Date
1	PT. Matahari Departement Store Tbk	LPPF	October 9, 1989
2	PT. Hero Supermarket Tbk	HERO	August 21, 1989
3	PT. MAP Aktif Adiperkasa Tbk	MAPA	July 5, 2018
4	PT. Erajaya Swasembada Tbk	ERAA	December 14, 2011

Source: Bursa Efek Indonesia (Idx.co.id)

Operational Definition and Measurement of Variables

This research applies the Altman Z-Score Model formulated as follows: $Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5$. The variables used in the model along with their operational definitions can be seen in the following Table 2.

Table 2. Operational Definition of Variables

Variables	Definition
Working Capital to Total Asset (X_1)	The ratio that indicates the comparison of working capital to total assets is called the Working Capital to Total Assets Ratio [24]. $Working\ Capital\ to\ Total\ Assets = \frac{Current\ Assets - Account\ receivable}{Total\ Assts}$
Retained Earnings to Total Assets (X_2)	This ratio indicates the company's ability to generate retained earnings from total company assets [13]. $Retained\ Earnings\ to\ Total\ Assets = \frac{Retained\ Earnings}{Total\ Assets}$
EBIT to Total Assets (X_3)	The ratio that indicates a company's ability to generate profit from its business activities before tax and interest payments is called the "earnings before tax and interest" ratio or "EBTIR [13]. $Earnings\ Before\ Interest\ and\ Tax\ to\ Total\ Assets = \frac{Earning\ Before\ Interest\ and\ Tax}{Total\ Assets}$
Market Value of Equity to Book Value of Debt (X_4)	The ratio that indicates a company's ability to meet its obligations from its own capital in the capital market (common stock) [13]. $Earnings\ Before\ Interest\ and\ Tax\ to\ Total\ Assets = \frac{Earning\ Before\ Interest\ and\ Tax}{Total\ Assets}$

IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

Sales to Total Asets (X_5)	The ratio that functions to indicate that a company can generate a sufficient business volume compared to the amount of investment in total assets is called the "Asset Turnover Ratio [13]. $Sales\ to\ Total\ Assets = \frac{sales}{Total\ Assets}$
Financial Distress (Y)	Conditions of a company's operations experiencing a significant decrease in cash flow, often undergo substantial business restructuring, sell or cease certain operations, or make other necessary changes to restore profitability [13].

Data analysis in financial reports aims to measure and depict financial distress in companies classified under the Department Store Industry on the Indonesia Stock Exchange. The report includes data such as Working Capital, Retained Earnings, EBIT (Earnings Before Interest and Taxes), Market Value of Equity, and Sales for the years 2019-2021. This research utilizes the Altman Z-score model from 1968 (pre-modification). The steps of data analysis conducted are as follows:

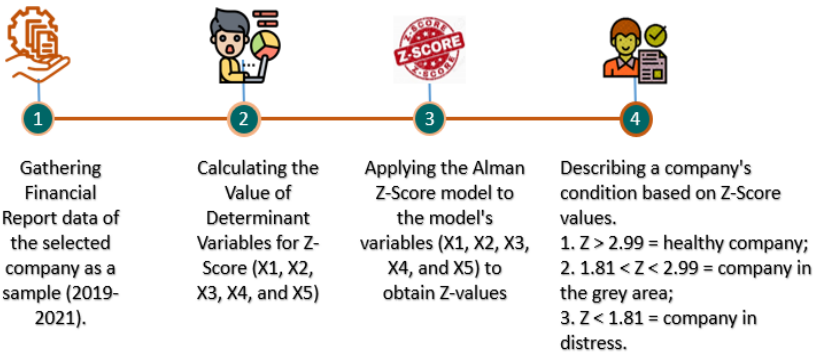


Figure 2: Stages of Data Analysis

RESEARCH RESULTS AND DISCUSSION

Data Analysis Results

The value of the variable Working Capital to Total Assets (X1)

The application of the formula for calculating the net working capital to total assets ratio based on financial data from the selected company as a sample, over 3 years, from 2019 to 2021, yielded the results as presented in the following Table 3.

Table 3: Working Capital to Total Assets Ratio Values for the Years 2019-2021

No	Company Name	Year			Average
		2019	2020	2021	
1	PT. Matahari Departement Store Tbk	0.0312	-0.1972	-0.0951	-0.0870
2	PT. Hero Supermarket Tbk	0.0048	-0.2984	-0.4601	-0.2512
3	PT. MAP Aktif Adiperkasa Tbk	0.4991	0.1877	0.2661	0.3176
4	PT. Erajaya Swasembada Tbk	0.2389	0.2144	0.2062	0.2199

Source: Processed company data

Graphically, the Net Working Capital Ratio to total assets of these four companies can be seen in the following figure 3.

IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

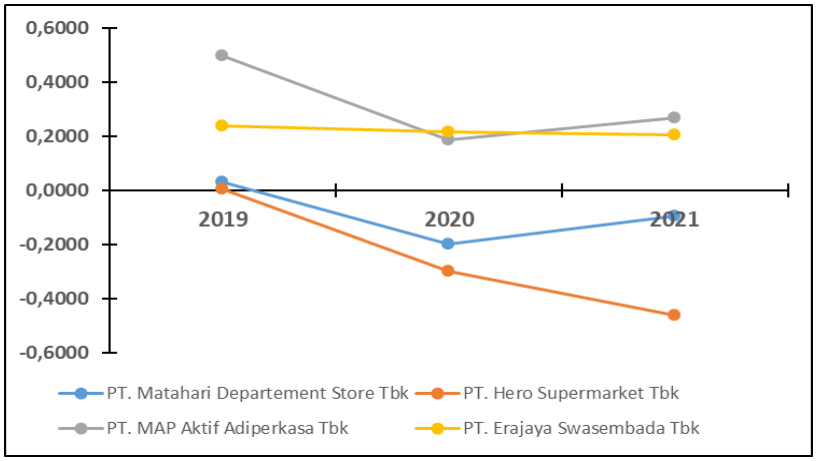


Figure 3: Net Working Capital to Total Assets Company's Graph Year 2019-2021

In the figure 3, it can be seen that in the year 2020-2021, there are two companies that have a positive or above-zero Net Working Capital to Total Assets ratio, while the other two companies experienced a negative ratio, namely PT Matahari Department Store Tbk and PT Hero Supermarket Tbk. Moreover, for PT Hero Supermarket Tbk, the negativity even increased in the year 2021.

The Variable Value of Retained Earnings to Total Assets Ratio (X2)

Based on the operational definition and formula for calculating the retained earnings to total asset ratio applied to the research data on the four companies during the 3-year observation period (2019-2021), the results obtained are presented in the following Table 4.

Table 4: Retained Earnings to Total Assets Ratio Values for the Years 2019-2021

No	Company Name	Year			Average
		2019	2020	2021	
1	PT. Matahari Departement Store Tbk	1.0874	0.5921	0.7605	0.8133
2	PT. Hero Supermarket Tbk	0.1075	0.2862	0.3766	0.2568
3	PT. MAP Aktif Adiperkasa Tbk	0.4585	0.3436	0.3961	0.3994
4	PT. Erajaya Swasembada Tbk	0.2679	0.2856	0.3512	0.3015

Source: Processed company data

Graphically, the retained earnings to total assets ratio of the selected company as a sample for 3 years (2019-2021) can be presented in the following Figure 4.

IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

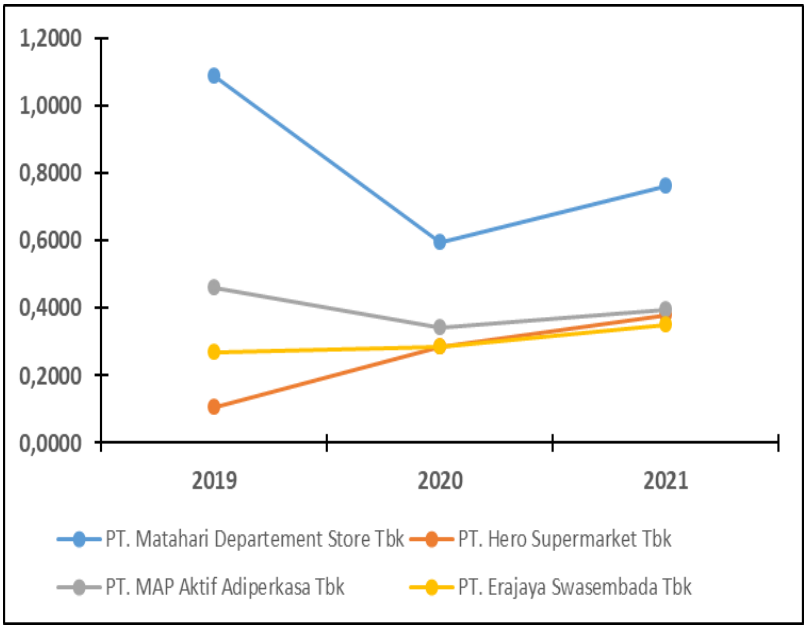


Figure 4: Retained Earnings to Total Assets Graph
of Four Companies 2019-2021

In the Figure 4, it can be seen that the retained earnings to total assets ratio of PT Hero Supermarket Tbk and PT Erajaya Swasembada Tbk is at the lowest position, despite experiencing an increase in 2021.

The Variable Value of Earnings Before Interest and Taxes to Total Assets (X3)

According to the operational definition of the variable and the application of the formula for the variable earnings before interest and taxes to total assets ratio, the obtained results for the selected company's financial data as a sample for three years (2019-2021) are presented in the following Table 5.

Table 5: Earnings Before Interest and Taxes to Total Assets Ratio Values for the Years 2019-2021

No	Company Name	Year			Average
		2019	2020	2021	
1	PT. Matahari Departement Store Tbk	0.3648	0.1479	0.1885	0.2337
2	PT. Hero Supermarket Tbk	0.0092	0.2123	0.1190	0.1135
3	PT. MAP Aktif Adiperkasa Tbk	0.2331	0.0017	0.0647	0.0998
4	PT. Erajaya Swasembada Tbk	0.0485	0.0818	0.1315	0.0873

Source: Processed company data

The analysis results that have been organized in Table 5, when presented in a graph, will appear as the following Figure 5.

IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

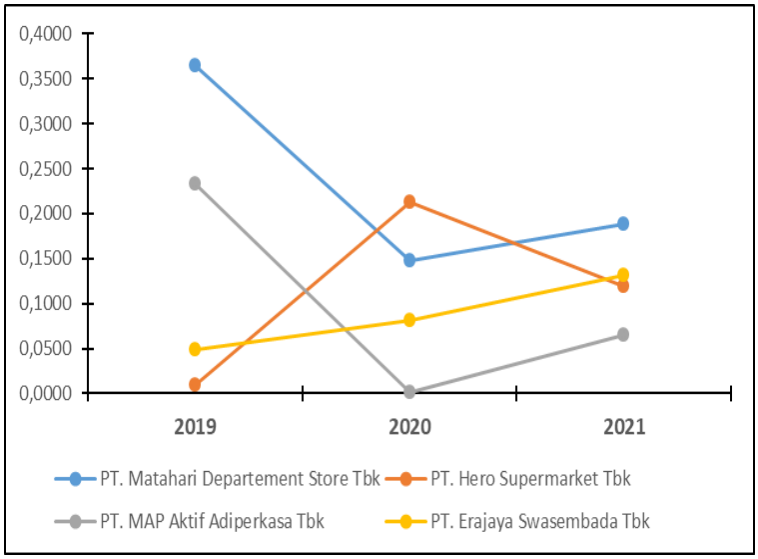


Figure 5: Earnings Before Interest and Taxes to Total Assets Graph 2019-2021

As we can see in figure 5, in 2020, the value of Earnings Before Interest and Taxes to Total Assets for PT Hero Supermarket Tbk and PT Erajaya Swasembada Tbk still experienced an increase, while two companies, namely PT Matahari Departemen Store Tbk and PT MAP Aktif Adiperkasa Tbk, experienced a decline, even almost reaching zero in 2020. In 2021, only one company experienced a decrease, namely PT Hero Supermarket Tbk.

Variable Market Value of Equity to Total Liability (X4)

By applying the market value of equity to total liabilities ratio formula as presented in the operational definition of the variable above, the results obtained from the financial data of selected companies as samples for three years (2019-2021) are presented in the following Table

Table 6: Market Value of Equity to Total Liability Ratios for the Years 2019-2021

No	Company Name	Year			Average
		2019	2020	2021	
1	PT. Matahari Departement Store Tbk	512.897	238.037	281.893	344.276
2	PT. Hero Supermarket Tbk	154.156	111.822	61.790	109.256
3	PT. MAP Aktif Adiperkasa Tbk	812.779	356.164	408.120	525.688
4	PT. Erajaya Swasembada Tbk	16.723	14.439	16.243	15.801

Source: Processed company data

Based on the analysis results presented in Table 6, the market value of equity to total liabilities ratio can be graphed as shown in Figure 6 below.

IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

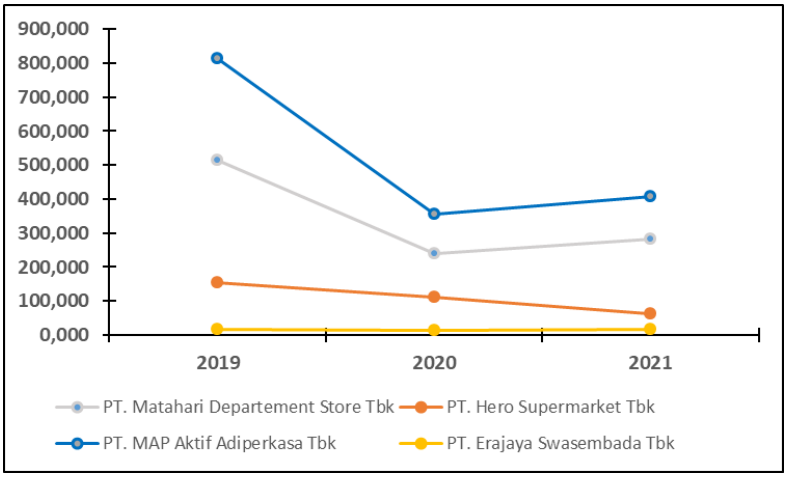


Figure 6: Market Value of Equity to Total Liabilities Ratio for the Years 2019-2021

Based on the graph in figure 6, it can be explained that the market value to total liabilities ratio, especially in the year 2020, was very low, particularly for two companies, PT Erajaya Swasembada Tbk and PT Matahari Departemen Store Tbk. This condition persisted until the year 2021, with PT Matahari Departemen Store Tbk experiencing a further decline.

Sales to Total Asset Ratio

By applying the formula from the operational definition of variables as previously stated in the preceding section, to the sample data of companies from the years 2019-2021, the results are obtained as presented in Table 7 below.

Table 7: Sales to Total Asset Ratio for the Years 2019-2021

No	Company Name	Year			Average
		2019	2020	2021	
1	PT. Matahari Departement Store Tbk	2.1263	0.7658	0.9547	1.2823
2	PT. Hero Supermarket Tbk	2.0263	1.8382	0.5549	1.4731
3	PT. MAP Aktif Adiperkasa Tbk	1.8128	0.8884	1.1359	1.2790
4	PT. Erajaya Swasembada Tbk	3.3798	3.0428	3.8222	3.4149

Source: Processed company data

Based on the analysis results in Table 7, the sales to total assets ratio can be presented in a graph, as shown in Figure 7 below.

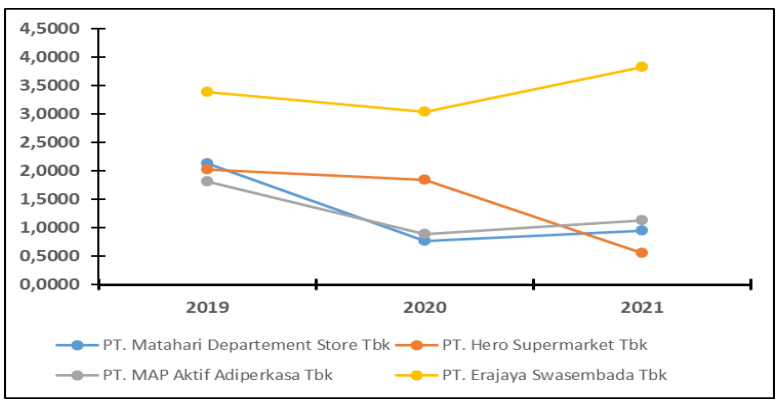


Figure 7: Sales to Assets Ratio Graph for the Years 2019-2021

IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

Due to a decrease in sales that occurred in 2020, almost all companies experienced a decline in their sales to assets ratio, except PT Hero Supermarket tbk. In 2021, while the other three companies experienced an increase, although not significantly, PT Hero Supermarket tbk. instead saw a sharp decline, causing the momentum from the previous year to be unable to be maintained.

Application of the Z-Score Model

Based on the calculation results of the determinative variable values for the Z-score, which have been computed in the previous section, the following Altman Z-Score model can be applied:

$$Z = 0{,}012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5$$

The results of the model implementation are presented in the following Table 8.

Table 8. Average Z-Scores of Companies for the years 2019-2021

No	Company Code	Year	X1	X2	X3	X4	X5	Z-Score	Desc.
		2019	0.0310	1.0874	0.3648	512.8968	2.1263	**5.2292**	**Healthy**
1	LPPF	2020	-0.9170	0.5926	0.1479	238.0369	0.7658	**2.1954**	**Grey Area**
		2021	-0.0950	0.7605	0.1885	281.8932	0.9547	**2.6608**	**Grey Area**
		2019	0.0050	0.1075	0.0092	154.1562	2.0263	**2.9510**	**Grey Area**
2	HERO	2020	-0.2980	0.2862	0.2123	111.8216	1.8382	**2.5147**	**Grey Area**
		2021	-0.4600	0.3766	0.1190	61.7896	0.5549	**0.9288**	**Distress**
		2019	0.4990	0.4585	0.2331	812.7791	1.8128	**6.7077**	**Healthy**
3	MAPA	2020	0.1880	0.3436	0.0017	356.1638	0.8884	**3.0316**	**Healthy**
		2021	0.2660	0.3960	0.0647	408.1200	1.1359	**3.5943**	**Healthy**
		2019	0.2390	0.2678	0.0485	16.7226	3.3798	**3.4849**	**Healthy**
4	ERAA	2020	0.2140	0.2856	0.0818	14.4386	3.0428	**3.1356**	**Healthy**
		2021	0.2060	0.3512	0.1315	16.2428	3.8222	**3.9276**	**Healthy**

Source: The result of data processing from table 3-7

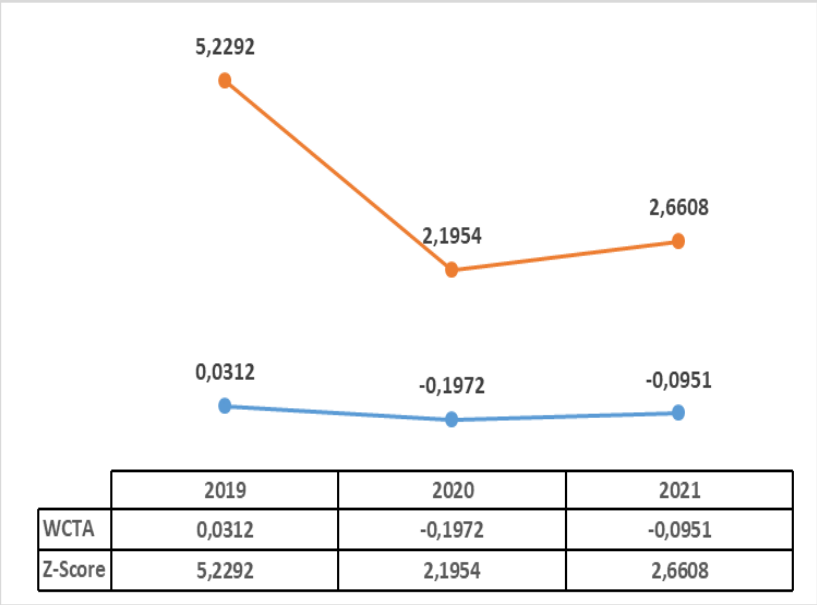
Discussion

Based on the results of applying the Z-Score Model in Table 8, the following points can be presented: **(1)** Referring to the results of the Z-Score calculations in 2019, 2020, and 2021 in Table 8, it can be seen that there are two companies in the grey area. PT. Hero Supermarket Tbk was in the grey area in 2019-2020 with Z-Score values of 2.9510 and 2.5147, and PT. Matahari Department Store Tbk was in the grey area in 2020-2021 with Z-Score values of 2.1954 and 2.6608. Meanwhile, the other two companies, PT. MAP Aktif Adiperkasa Tbk and PT. Erajaya Swasembada Tbk, remained in a healthy condition for three years (2019-2021) as their Z-Score values were above or Z-Score > 2.88. **(2)** PT. Matahari Departement Store Tbk was actually in a healthy condition in 2019, but in 2020-2021, it entered the grey area with Z-Score values of 2.1954 and 2.6608. **(3)** Among the two companies in the grey area as mentioned in point 1, one company experienced financial distress, which is PT. Hero Supermarket Tbk in 2021 with a Z-Score value of 0.9288.

Observing the Role of Financial Distress Determinant Variables

Based on the previously presented analysis, it is evident that there are two companies situated in the grey area, namely PT. Hero Supermarket Tbk and PT. Matahari Department Store Tbk, and one company experiencing financial distress, which is PT. Hero Supermarket Tbk. Specifically shown below is the contribution of the variable "working capital to total assets" (X1), which appears to significantly influence the Z-Score value for both PT. Matahari Department Store Tbk and PT. Hero Supermarket Tbk.

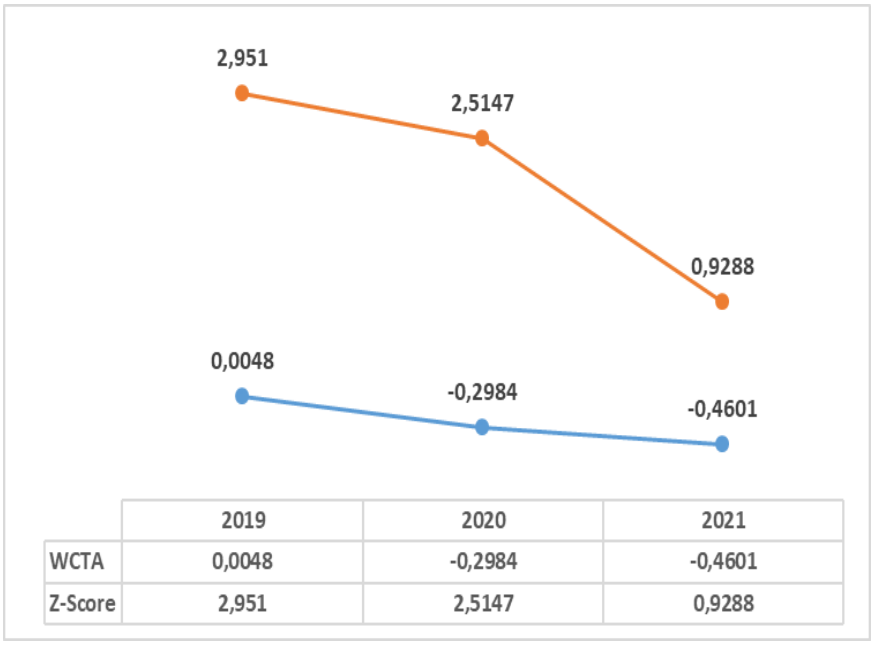
IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491



	2019	2020	2021
WCTA	0,0312	-0,1972	-0,0951
Z-Score	5,2292	2,1954	2,6608

Figure 8: Net Working Capital to Total Assets Value and Z-Score Value of PT Matahari Department Store Tbk.

From the graph, it can be seen that the Z-Score value of PT Matahari Department Store Tbk sharply decreased from 5.2292 to 2.1954. Alongside this decline, the working capital to total assets ratio also plummeted significantly from 0.0312 to -0.1972. In the year 2021, the Z-Score slightly increased from 2.2954 to 2.6608, while the increase in working capital to total assets ratio was not as significant, changing from -0.1972 to -0.0951. However, this increase was not sufficient to move the position into a **healthy** range, as it still remained in the grey area during 2020-2021. This situation provides an opportunity for the company to improve its performance in the coming years. If financial difficulties can be identified effectively, the company can evaluate and take actions to prevent more challenging situations such as liquidation or bankruptcy [25], [26]. This perspective can serve as guidance for the company to rise in the forthcoming years.



	2019	2020	2021
WCTA	0,0048	-0,2984	-0,4601
Z-Score	2,951	2,5147	0,9288

Figure 9: Net Working Capital to Total Assets Value and Z-Score Value of PT Matahari Department Store Tbk.

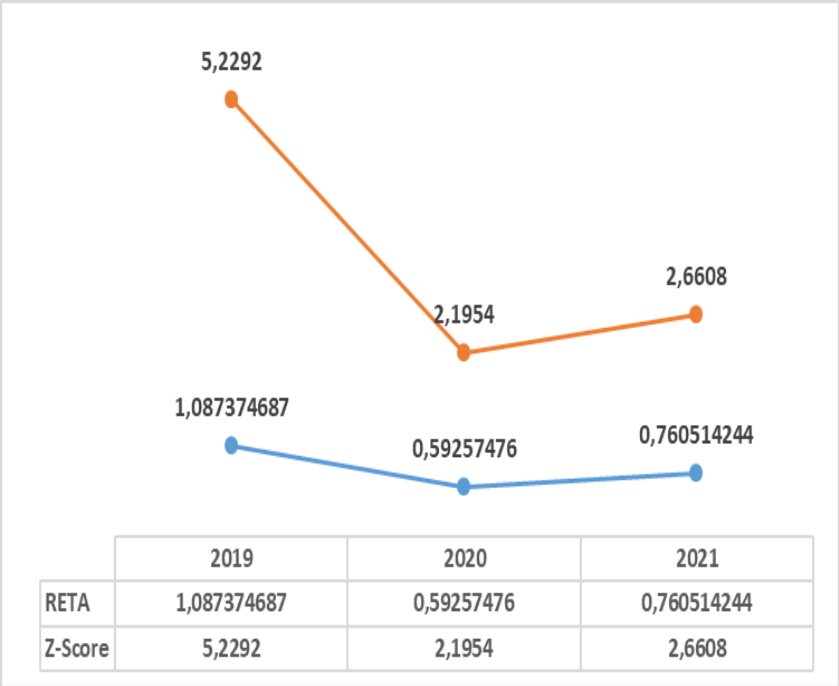
IJEC
International Journal of Economics
https://ejournal.ipinternasional.com/index.php/ijec
e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

Figure 9, shows the decline of Z-Score for PT Hero Supermarket Tbk. from 2.951 in 2019 to 2.5147 in 2020, which was caused by a drastic decrease in its net working capital to total assets ratio from 0.0048 in 2019 to -0.2984 in 2020. Subsequently, in the following year, 2021, the Z-score value declined significantly to 0.9288 due to a more severe deterioration in the net working capital to total assets position, reaching -0.4601. As a result, the company is no longer in the grey area but has entered a state of financial distress. Sinaga (2019) explains that when a company is in the grey area, it indicates that the company is experiencing some financial problems, and if the company does not take corrective actions, both in terms of management and financial structure, it will be at risk of bankruptcy in the coming years [27].

One of the functions of working capital in a company's operations is to provide sufficient investment for the company's sustainability [21], [28]. When the net working capital to total assets ratio is negative, it means that the company is facing difficulties in providing cash for day-to-day transactions and maintaining inventory of goods or services to be sold, resulting in a negative impact on sales and, consequently, on profits. This also leads to inadequate cash flow for the company's health [18].

The Positive Role of the Retained Earning to Total Assets Ratio

Retained earnings, within the company's total assets, represent an internal source of funds that do not require the issuance cost (flotation cost) associated with issuing new shares. A key element of the pecking-order theory is that companies prefer to use internal financing when possible, considering the costs of issuing new securities [29]. Investments are primarily funded internally, especially by reinvesting corporate profits, followed by issuing new debt securities, and finally issuing new shares [30]. When faced with difficulties in financing company operations, retained earnings become the best source of funds. Below is the relationship between the variable "Retained Earnings to Total Assets" and the Z-Score.



	2019	2020	2021
RETA	1,087374687	0,59257476	0,760514244
Z-Score	5,2292	2,1954	2,6608

Figure 10: Retained Earnings to Total Assets and Z-Score Graph at PT Matahari Departemen Store Tbk

From the above figure, it can be seen that in 2020, the company was in the grey area, with a Z-score value of 2.1954. In that year, the retained earnings to total assets were sufficient to survive, amounting to 0.59257176 or 59.26%, enabling the company to increase the Z-score value in 2021 from 2.1954 to 2.6608, thus avoiding any financial distress. In 2021, the retained earnings to total assets increased to 0.760524244 or 76.05%, allowing the company to withstand and improve its operations in the future, even though it still falls within the grey area.

e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

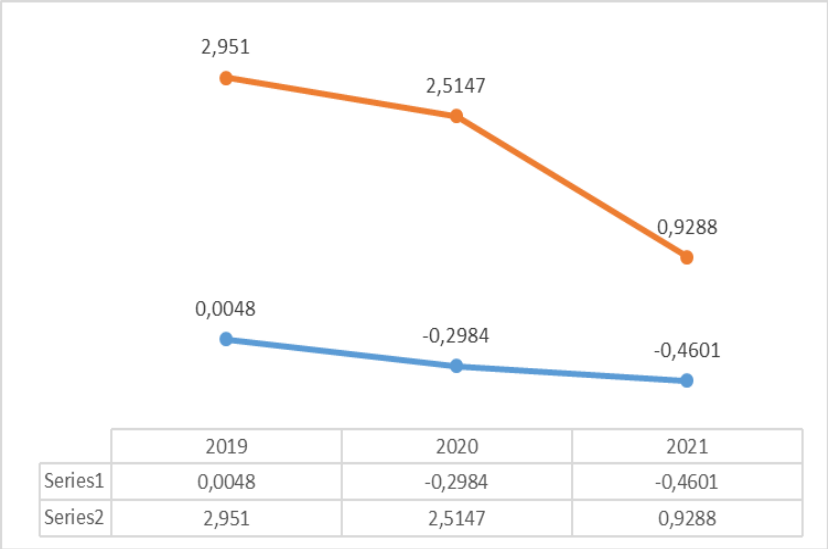


Figure 11: Retained Earning to Total Assets and Z-Score of PT Hero Supermarket Tbk.

From the above Figure 11, it is evident that the value of retained earnings to total assets is too low, despite experiencing an increase during the period from 2019 to 2021. Nonetheless, it remains insufficient to support the company's financing needs for its operations, leading it to transition from the grey area in 2019-2020 to a position of financial distress in 2021.

CONCLUSIONS

Based on the data analysis and discussion, the following conclusions can be drawn:
(1) Out of the four companies analyzed, two were in a "healthy" position, one was in a grey area in the years 2019-2020, namely PT Hero Supermarket, and one company was in a grey area in the year 2020-2021, namely PT Matahari Department Store Tbk. (2) Out of the two companies in the grey area in 2020, one company experienced financial distress in the year 2021, namely PT Hero Supermarket Tbk. (3) The variable that most significantly contributed to explaining the grey area and financial distress conditions in the four researched companies was the net working capital to total assets ratio.

Research Limitations

The limited sample selection has resulted in an insufficient depiction of the financial conditions experienced by the chosen companies as samples, namely: healthy, in a grey area, and facing financial distress. These conditions, although described, still fail to represent the overall industry's situation during the Covid-19 pandemic. Future research could be expanded by involving a larger sample size. Additionally, the description of the companies' conditions has not utilized stronger quantitative analysis, such as multivariate analysis, for example.

ACKNOWLEDGEMENTS

The author would like to thank the research partners who have helped complete this article.

REFERENCES

[1] Bank Indonesia, “Bangkit dan Optimis: Bersinergi dan Inovasi Untuk Pemulihan Ekonomi,” *LPI-Bank Indones. 2021*, 2021.

[2] R. Marginingsih, “Financial Technology (Fintech) Dalam Inklusi Keuangan Nasional di Masa Pandemi Covid-19,” *Monet. - J. Akunt. dan Keuang.*, vol. 8, no. 1, pp. 56–64, 2021, doi: 10.31294/moneter.v8i1.9903.

[3] I. Hanafi and S. G. Supriyadi, “Prediksi Financial Distress Perusahaan Manufaktur yang Terdapat di

e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

Bursa Efek Indonesia," *J. Ekon. Bisnis Ekuivalensi*, vol. 4, no. 1, pp. 24–51, 2018.

[4] T. S. Lewaru and L. G. Loupatty, "Prediction of Financial Distress As The Impact of The Covid-10 Pandemic on Trade, Service and Investment Companies in Indonesia Using Altman Z-Score Discriminant Analysis," *Int. J. Multi Sci.*, vol. 2, no. 8, pp. 1–20, 2021.

[5] A. S. Pratiwi, S. H. Satoto, S. B. Wahyu, and S. Suprapti, "the Effect of Financial Ratio in the Altman Z-Score on Financial Distress," *Int. J. Econ. Bus. Account. Res.*, vol. 6, no. 1, p. 902, 2022, doi: 10.29040/ijebar.v6i1.4736.

[6] R. Marginingsih, "Financial Distress Analysis Using The Altman Z-Score Method For Retail Companies During The Covid-19 Pandemic," *Enrich. J. Manag.*, vol. 12, no. 2, pp. 1796–1803, 2022, [Online]. Available: https://garuda.kemdikbud.go.id/documents/detail/2860007

[7] A. A. Toly, R. Permatasari, and E. Wiranata, "The Effect of Financial Ratio (Altman Z-Score) on Financial Distress Prediction in Manufacturing Sector in Indonesia 2016-2018," *23rd Asian Forum Bus. Educ. 2019)*, vol. 144, no. Afbe 2019, pp. 47–53, 2020, doi: 10.2991/aebmr.k.200606.008.

[8] I. Fitriani and P. Muniarty, "Bankruptcy Prediction Analysis Using the Altman Z-Score Method at PT Aneka Tambang (Persero) Tbk," *Ilomata Int. J. Manag.*, vol. 1, no. 2, pp. 51–58, 2020, doi: 10.52728/ijjm.v1i2.86.

[9] S. R. Diana, *Analisis Laporan Keuangan dan Aplikasinya*, 1st ed. Bogor: IN Media, 2018.

[10] F. Setiawan, "Financial Distress Analysis Using Altman Z-Score Model In Sharia Banking In Indonesia," *IQTISHODUNA J. Ekon. Islam*, vol. 10, no. 2, pp. 105–122, 2021, doi: 10.36835/iqtishoduna.v10i2.938.

[11] A. H. Nguyen and L. H. Nguyen, "Determinants of sustainability disclosure: Empirical evidence from vietnam," *J. Asian Financ. Econ. Bus.*, vol. 7, no. 6, pp. 73–84, 2020, doi: 10.13106/JAFEB.2020.VOL7.NO6.073.

[12] P. G. Tahu, "Predicting Financial Distress of Construction Companies in Indonesia: a Comparison of Altman Z-Score and Springate Methods," *Int. J. Sustain. Educ. Glob. Creat. Econ.*, vol. 2, no. 2, pp. 7–12, 2019, [Online]. Available: https://doi.org/10.1234/ijsegce.v3i1.84

[13] E. I. Altman, E. Hotchkiss, and W. Wang, *Corporate Financial Distress, Restructuring, and Bankruptcy (Analyze Leveraged Finance, Distressed Debt, and Bankruptcy)*, Fourth. Hoboken, New Jersey: John Wiley & Sons, Inc., 2019.

[14] Z. Cindik and I. H. Armutlulu, "A revision of Altman Z-Score model and a comparative analysis of Turkish companies' financial distress prediction," *Natl. Account. Rev.*, vol. 3, no. 2, pp. 237–255, 2021, doi: 10.3934/nar.2021012.

[15] I. Fahmi, *Analisis Laporan Keuangan*, 3rd ed. Bandung: Alfabeta, 2017.

[16] M. B. A. Stephen Nelson, *QuickBooks 2015 all-in-one for dummies*. John Wiley & Sons, Inc., 2019.

[17] T. Restianti and L. Agustina, "The Effect of Financial Ratios on Financial Distress Conditions in Sub Industrial Sector Company," *Account. Anal. J.*, vol. 7, no. 1, pp. 25–33, 2018, doi: 10.15294/aaj.v5i3.18996.

[18] L. J. Gitman and C. J. Zutter, *Principles of Managerial Finance*, Fourteenth. Harlow: Pearson Education Limited, 2017.

[19] S. F. A Khatib and A.-N. Ibrahim NOUR, "The Impact of Corporate Governance on Firm Performance During The COVID-19 Pandemic: Evidence from Malaysia," *J. Asian Financ. Econ. Bus.*, vol. 8, no. 2, pp. 943–952, 2021, [Online]. Available: https://ssrn.com/abstract=3762393

[20] E. F. Brigham and M. C. Ehrhardt, *Financial Management: Theory and Practice*, 16th ed. Boston USA: Cengage Learning, Inc., 2020.

e-ISSN: 2961-712X
Vol. 3 No. 1, April 2024
DOI: 10.55299/ijec.v3i1.491

[21] E. F. Brigham and J. F. Houston, *Fundamentals of Financial Management.*, Fifteenth. Boston USA: Cengage Learning, Inc., 2019.

[22] S. Besley and E. Brigham, *CFIN : Corporate Finance*, Sixth. Boston USA: Cengage Learning, Inc, 2019.

[23] E. I. Altman, "The Prediction of Corporate Bankruptcy: A Discriminant Analysis," *J. Finance*, vol. 23, no. 1, p. 193, 1968, doi: 10.2307/2325319.

[24] E. I. Altman, E. Hotchkiss, and W. Wang, "A 50-Year Retrospective on Credit Risk Models, the Altman Z-Score Family of Models, and Their Applications to Financial Markets and Managerial Strategies," *Corp. Financ. Distress, Restructuring, Bankruptcy*, pp. 189–216, 2019, doi: 10.1002/9781119541929.ch10.

[25] R. Marginingsih, "Financial Distress Analysis Using The Altman Z-Score Method For Retail Companies During The Covid-19 Pandemic," *Enrich. J. Manag.*, vol. 12, no. 2, pp. 1796–1803, 2022.

[26] E. I. Altman, E. Hotchkiss, and W. Wang, *Corporate financial distress, restructuring, and bankruptcy: analyze leveraged finance, distressed debt, and bankruptcy*, Fourth. New Jersey: John Wiley & Sons Inc, 2019.

[27] M. N. Sinaga, J. V Mangindaan, and F. A. O. Pelleng, "Analisis Tingkat Kebangkrutan Pada Perusahaan Asuransi Yang Terdaftar Di Bursa Efek Indonesia," *J. Adm. Bisnis*, vol. 9, no. 2, pp. 28–36, 2019.

[28] C. J. Zutter and S. B. Smart, *Principles of Managerial Finance*, Fifteenth. New York: Pearson, 2019.

[29] S. A. Ross, R. W. Westerfield, B. D. Jordan, G. S. Roberts, J. A. Pandes, and T. A. Holloway, *Fundamentals of Corporate Finance*, Tenth. Canada: McGraw-Hill, 2019.

[30] R. A. Brealey, S. C. Myers, and F. Allen, *Principles of Corporate Finance*, Twelefth. McGraw-Hill Education, 2017.