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Evaluation of Current Ratio and Return on Assets in Detecting Financial Distress: Evidence from Retail Companies in Indonesia

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Abstract
This study aims to analyze the effect of Current Ratio and Return on Assets (ROA) on financial distress in retail sub-sector companies listed on the Indonesia Stock Exchange (IDX) for the period 2020-2023. Financial distress is an unstable financial condition and can be an early indicator of bankruptcy. The financial distress prediction model used in this study is the Modified Altman Z-Score. This type of research is quantitative with multinomial logistic regression analysis method. The research sample consisted of 33 retail sub-sector companies selected through purposive sampling method. The data used is secondary data in the form of annual financial reports obtained from the official IDX website. The results showed that Current Ratio and Return on Assets (ROA) partially have a significant influence on financial distress. In addition, simultaneously Current Ratio and ROA have a significant effect on financial distress.

Keywords: Current Ratio, Return on Assets (ROA), Financial Distress, Altman Z-Score, Retail Company.

I. Introduction

The Indonesian economy and the order of life have been significantly impacted by the Covid-19 pandemic that has afflicted the country since early 2020. As of April 9, 2020, the Ministry of Manpower noted that there were more than 1.4 million workers throughout Indonesia who were affected by the Covid-19 pandemic (Sihaloho, 2020). Companies generally laid off workers, with some facing termination of employment (PHK) (Rina, 2020). This increased unemployment, which reduced people's purchasing power, because workers have limited income or even no income at all, forcing them to reduce their consumption of goods and services (Prayogo & Sukim, 2021).

The retail industry is among those impacted by the drop in people's purchasing power. People's purchasing power is often associated with the decline in the growth of the retail sector (Iskandar et al., 2020) . According Delasay et al. (2022), when purchasing power decreases, consumers are increasingly reluctant to visit shopping centers or physical stores, especially during the pandemic. As a result, physical retail stores have to face a significant decline in the number of visitors, which will ultimately affect their income (Nurfitri & Setyaningsih, 2024).

Some of the largest retail companies that experienced a decline in revenue include PT Matahari Putra Prima Tbk (MPPA), which experienced a decline in sales during the January-September 2021 period of 3.6% annually (Timorria, 2021). PT Hero Supermarket Tbk (HERO) experienced a decline in net revenue in 2020 of 26.99% annually to IDR 8.89 trillion, with losses of up to IDR 1.21 trillion, or an increase of IDR 28.22 billion compared to 2019 (Mulyana, 2021). Based on the annual report data, PT Matahari Department Store Tbk (LPPF) also experienced losses of up to IDR 870 billion in 2020 (Rika, 2021).

The aforementioned phenomenon indicates that a number of retail companies are facing financial distress. If the state of financial distress is not resolved right away, it is possible that the company will go bankrupt (Senbet et al., 1995). As stated by Senbet et al. (1995), financial distress has a significant relationship with bankruptcy.

Baimwera & Muriuki (2014) defines financial distress as a condition where a company cannot fulfill its obligations when due. Piatt & Piatt (2002), as cited in Hanifah & Purwanto (2013), also define financial distress as a stage of financial decline before bankruptcy or liquidation occurs. The manifestation of financial hardship can adversely affect investors and creditors, as stakeholders are concerned about a company's potential insolvency due to financial challenges (Santoso et al., 2023). One way to find out about bankruptcy is through financial report indicators using a prediction model (Putri & Yusmaniarti, 2023). Aminian et al. (2016) stated that the bankruptcy prediction model is a technique or prediction tool for companies to estimate the chances of bankruptcy using a combination of financial ratios.

One of the most well-known models is the Altman Z-Score, developed by Edward I. Altman in 1968 (Situmorang, 2018). Robiansyah et al. (2022) stated that the Altman Z-Score has three research models, including the first Altman Z-Score model (1968), the revised Altman Z-Score model (1983), and the modified Altman Z-Score model (1995). Gordon L.V. Springate developed the Springate Score in 1978, building on the Altman Z-Score. Like the Altman Z-Score, the Springate Score also uses multiple discriminant analysis (MDA) to choose 4 out of 19 financial ratios that can effectively tell the difference between businesses that are bankrupt and those that are not. Meanwhile, the Zmijewski Score is a model produced by Zmijewski in 1984 as a development of various previously existing models. Zmijewski uses three main financial ratios: ROA, current ratio, and debt to asset. Zmijewski emphasizes the amount of debt as the component that most influences bankruptcy (Robiansyah et al., 2022). Furthermore, the Ohlson O-Score is a model developed by James A. Ohlson in 1980. The Ohlson O-Score, like previous models, underwent transformation from previous studies (Komarudin et al., 2019). The Ohlson O-Score has 9 financial variables, which include company size (log assets), as well as Debt to Asset Ratio (DAR) and Return on Assets (ROA). Ohlson used the multiple logistic regressions method, which he said could cover the shortcomings of the multiple discriminant analysis (MDA) method that had been used by Altman (1968) and Springate (1978) (Asmaradana & Satyawan, 2022). The Grover Model is a model developed by Jeffrey S. Grover with modifications and evaluations of the Altman 1968 model. Jeffrey S. Grover used a sample according to the Altman Z-Score 1968 model by adding 13 new financial ratios (Prihanthini & Sari, 2013).

Of the various models that have been explained, this study uses the Altman Z-Score model (1995). This is because the Altman Z-Score model has a high level of accuracy. Based on research conducted by Putri & Yusmaniarti (2023), the Altman Z-Score model has an accuracy level of 90.48% with a type error of 2.38%. The modified Altman Z-Score model (1995) uses a flexible formula because it is appropriate for usage in developing nations like Indonesia and may be used to a variety of corporate business domains, both public and private (Robiansyah et al., 2022).

Several factors cause financial distress. Lisquidyt is one element that may influence financial distress. According to Damajanti et al. (2021), liquidity has the potential to affect financial distress. Wijaya & Suhendah (2023) stated that poor liquidity can cause companies to have difficulty in meeting short-term obligations, which can worsen financial conditions and increase the risk of financial distress. In this study, liquidity is measured by the current ratio (CR). Using total current assets, the current ratio (CR) assesses a company’s capacity to pay down its short-term loans (Mboi et al., 2018). According to research by Haras et al. (2022), financial distress is significantly impacted by the liquidity variable as evaluated by the current ratio, while Amanda & Tasman (2019) stated that there was no effect between the current ratio is an indicator of liquidity in relation on the potential for financial distress.

In addition, profitability is another element that can influence financial distress. Iskandar et al. (2020) stated that profitability is a ratio that may assess a company’s capacity to earn profitas relative to specific levels of sales, assets and equity capital. According to Achyani & Kusumawati (2023), companies with good levels of profitability tend to be better able to face economic pressures, while companies with low profitability are at high risk of experiencing financial distress. In this study, profitability was measured by return on assets (ROA). Return on Assets (ROA) is a metric that assesses a company’s capacity to produce net profit relative to its asset base (Mboi et al., 2018). Research conducted by Silanno et al. (2021) stated that the profitability variable measured using Return on Assets (ROA) has a significant effect on financial distress, while Maulana & Suhartati (2022) stated that Return on Assets (ROA) has no effect on financial distress. The

purpose of this study is to detect financial distress from the liquidity ratio with the proxy of the current ratio and the profitability ratio with the proxy of return on assets. The sections in this article consist of 1. Introduction; 2. Materials and Methods; 3. Results; 4. Discussion; and 5. Conclusion.

II. Materials And Methods

Signaling theory was initially proposed by Michael Spence in 1973. Signaling theory pertains to the informational signals required for investors to evaluate and decide whether to invest in the respective company's shares (Zulaecha & Mulvitasari, 2019). Phan et al. (2022) explained that companies transmit information to external parties as either positive or negative signals, as this information can be a significant factor for investors in forming a picture of the company's past and future. The company may disclose either favorable or unfavorable information (Wijaya & Suhendah, 2023). The good news provided can be in the form of good company conditions, profit announcements, and dividend distributions, while the bad news provided can be in the form of company losses so that dividends cannot be distributed or the company has high debts, which increase the risk of bankruptcy (financial distress) (Wijaya & Suhendah, 2023). Regarding financial distress, in signal theory, financial reports function as a tool to convey positive or negative signals to predict potential bankruptcy and reduce information asymmetry (Achyani & Kusumawati, 2023).

Hypothesis Development

The current ratio assesses a company's capacity to fulfill short-term liabilities or imminent debts using available current assets (Widiastuti & Ikhsan, 2022). According to the results of the ratio calculation, A low current ratio signifies elevated liquidity risk, whereas a high current ratio denotes surplus current assets, which adversely affects the company's profitability (Iskandar et al., 2020). Wijaya & Suhendah (2023) stated a high level of liquidity means that the company's performance is considered good and can reduce the possibility of financial distress.

H1: Current Ratio has a significant effect on financial distress.

Return on Assets (ROA) assesses a firm's capacity to produce net profit relative to its asset base (Mboi et al., 2018). The higher the company's return on assets (ROA), the greater the company's ability to generate profit from total assets (Mboi et al., 2018). If the return on assets (ROA) is low, it indicates that the company's assets are less productive in generating profit, and this condition will complicate the company's finances in internal funding sources for investment, which can lead to the possibility of financial distress (Dewi et al., 2019).

H2: Return on Assets has a significant effect on financial distress.

Hartono (2018) in Purwanti & Sya'adah (2020) stated that high liquidity indicates that the company will avoid financial distress as it is deemed capable of settling its present liabilities. However, high liquidity causes excess current assets, which are considered less good because the company's operational activities are not carried out optimally, so that it will affect efforts to achieve profit (profitability) (Kasmir, 2017). If the return on asset value is smaller, it is likely that the company's performance is less effective in managing assets to generate profit, which can result in financial distress (Purwanti & Sya'adah, 2020).

H3: Current Ratio and Return on Assets have a significant effect on financial distress.

III. Methods

This study's population comprises retail sub-sector enterprises registered on the Indonesia Stock Exchange from 2020 to 2023. The sample was selected using the purposive sampling method with the following criteria: companies listed on the Indonesia Stock Exchange for 4 consecutive years, namely 2020-2023, and companies that published their complete financial reports during that period.

The analytical methodology employed in this investigation is multinomial logistic regression analysis because dependent variable is polychotomous or has more than two categories. Logistic regression analysis

produces a model fit analysis that shows whether the research data is suitable for use in research, so it does not require a classical assumption test.

The independent variables are liquidity as measured by the current ratio and profitability as measured by return on assets.

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liablities} \quad (1)$$

We measure profitability using return on assets and the following formula:

$$Retun\ on\ Asdets = \frac{Net\ Income}{Total\ Assets} \quad (2)$$

The dependent variable in this study is financial distress. The measurement of the financial distress variable uses the Altman Z-Score Modification 1995 model. The formula for the Altman Z-Score method is as follows:

$$Z = 6{,}56\ X_1 + 3{,}26\ X_2 + 6{,}72\ X_3 + 1{,}05\ X_4 \quad (3)$$

Where:

Z = *Financial Distress Indeks*
X1 = *Working Capital/Total Assets*
X2 = *Retained Earnings/Total Assets*
X3 = *Earnings Before Interest and Taxes/Total Assets*
X4 = *Book Value of Equity/Book Value of Debt*

The classification of healthy and bankrupt companies is based on the Z-Score value, namely:
Z < 1,10 = financial distress
1,10 < Z < 2,60 = grey area
Z > 2,60 = safe

The dependent variable is polychotomous or has more than two categories. Dependent variables that consist of more than two categories are usually denoted by 0, 1, and 2 (0 = financial distress, 1 = grey area, and 2 = safe). The following is the formula for logistic regression analysis:

$$Ln = \frac{P}{1-P} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \quad (4)$$

Where:

Ln = Logarithm natural
P = The probability that Y = 0 (financial distress), Y = 1 (grey zone), Y = 2 (safe zone)
β0 = Constants of the regression equation
β1, β2 = Independent variable parameter coefficient
X1 = *Current Ratio*
X2 = *Return on Assets*

This model uses one category as the reference category, which serves as a basis for comparison with the other categories. If the dependent variable has three categories, then there will be two comparisons made with the reference category. The following shows how to use the multinomial logistic regression model with a dependent variable that has three categories:

$$Ln = \left(\frac{P_0}{P_1}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_n X_n \quad (5)$$

$$Ln = \left(\frac{P_2}{P_0}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_n X_n \quad (6)$$

Where:

$Ln = \left(\frac{P_0}{P_1}\right)$ and $Ln = \left(\frac{P_2}{P_0}\right)$ are log odds, or logit, which is the log of the ratio
P_1 and P_2 is probability of occurrence of categories 1 and 2
P_0 is probability of occurrence of categories 0
β_0 is intercept (constant) in the model
$\beta_1, \beta_2 \beta_3, \ldots \beta_n$ is coefficients for independent variables $X_1, X_2 X_3, \ldots X_n$

IV. Results

Information acquired from the official website of the Indonesia Stock Exchange shows that there are 34 retail sub-sector companies listed for four consecutive years, from 2020 to 2023. One company was excluded as a sample because it did not publish its complete financial report. The results of the sample selection obtained 33 companies listed for 4 consecutive years, so the amount of data used in this study is 33 x 4 = 132 data.

Multinomial Logistic Regression Analysis

1. Results Of The Regression Model Feasibility Test (Goodness Of Fit Test)

The outcomes of the feasibility assessment for the regression model on 132 data with the Pearson and Deviance tests showed inconsistent significance values, where the sig. value of Pearson was 0.002. These results can be concluded that the model is considered not fit with the data (there is a significant difference between the model and the data) because the sig. value of Pearson is below 0.05. To normalize the data, treatment is needed, namely removing outlier data. We identified 23 data points as outliers and removed them from the observation. Therefore, the data processed using the regression model in this study amounted to 109 data. The results showed that the significance value for the Pearson and Deviance tests was consistent, namely 1,000, greater than 0.05.

2. Results Of The Model Fit Test (Fitting Model)

There is a decrease in the value of -2 Log Likelihood from 219.761 on the intercept only to 56.390 after the independent variables are entered into the model (final). This decrease indicates that the regression model is better or can be said to be a model fit with the data, meaning that the addition of independent variables can produce better accuracy in predicting financial distress.

3. Results Of The Multicolinearity

In the multicollinearity test, a tolerance value of <0.1 and a VIF value of >10 indicate symptoms of multicollinearity. Conversely, if the tolerance value is >0.1 and the VIF value is <10, it can be concluded that the regression model is free from symptoms of multicollinearity. The tolerance value on the CR and ROA variables is 0.955 > 0.1, and the VIF value on the CR and ROA variables is 1.048 < 10, which means that the regression model is free from symptoms of multicollinearity (there is no correlation between independent variables).

Results Of Descriptive Statistics

The Current Ratio (CR) variable has the lowest (minimum) value of 0.100, owned by PT Omni Inovasi Indonesia Tbk (TELE) in 2022, and the highest (maximum) value of 8,007, owned by PT Aspirasi Hidup Indonesia Tbk (ACES) in 2022. The average (mean) current ratio value is 1,923 with a standard deviation value of 1.488, so it can be interpreted that the standard deviation is smaller than the average value. This shows that most companies in the sample have the ability to pay current liabilities with current assets, but the distribution of current ratio data is quite varied.

The Return on Assets (ROA) variable has the lowest (minimum) value of -2,451, owned by PT Omni Inovasi Indonesia Tbk (TELE) in 2022, and the highest (maximum) value of 0,241, owned by PT Matahari Departement Store Tbk (LPPF) in 2022. The average (mean) Return on Assets (ROA) value is 0.004 with a standard deviation value of 0,249, so it can be interpreted that the standard deviation is greater than the average value. This shows that the average return on assets of the company is relatively low or very small, around 0,4% of total assets, and the distribution of return on assets data varies greatly or tends to be spread out.

The categorical financial distress variable (FD Category) has the lowest (minimum) value of 0 and the highest (maximum) value of 2. The average (mean) value of the FD category is 1,257 with a standard deviation of 0,865.

Significance Parameter Test

1. Results Of Partial Test (Likelihood Ratio Test)

Based on the partial test results shown in Table 1. It can be seen that the Current Ratio (CR) variable shows a significance value of 0.001 < 0,05; then CR partially has a significant effect on financial distress as a whole model. The Return on Assets (ROA) variable shows a significance value of 0,001 < 0,05; then ROA partially has a significant effect on financial distress as a whole model. However, this must be retested on the estimated parameters for more specific testing because the likelihood ratio test tests the significance of the whole model.

Table 1. Partial Test (Likelihood Ratio Test)

Effect	*Model Fitting Criteria*	*Likelihood Ratio Tests*		
	-2 Log Likelihood of Reduced Model	*Chi-Square*	*df*	*Sig.*
Intercept	141,348	84,958	2	<0,001
CR	160,356	103,966	2	<0,001
ROA	121,385	64,995	2	<0,001

Source: Data processed by researchers (2025)
CR is current ratio and ROA is return on assets

2. Results Of Simultan (G-Test)

Table 2 presents the outcomes of the concurrent test, demonstrating the significance value (sig.) of the final model is 0,001, which means the significance value is <0,05. This figure reflects the rejection of H0 and the acceptance of H1, signifying that the independent variables together influence the dependent variable.

Table 2. Simultan Test (G-Test)

Model	*Model Fitting Criteria*	*Likelihood Ratio Tests*		
	-2 Log Likelihood	*Chi-Square*	*df*	*Sig.*
Intercept Only	219,761			
Final	56,390	163,370	4	<0,001

Source: Data processed by researchers (2025)

3. Results Of Determination Coefficient Test (Pseudo R-Square)

The Nagelkerke value in Table 3 is 0.896, indicating that the Current Ratio (CR) and Return on Assets (ROA) can account for 89.6% of the dependent variable, while the other 10.4% is influenced by other factors not included in the model.

Table 3. Determination Test (Pseudo R-Square)

Cox and Snell	0,777
Nagelkerke	0,896
McFadden	0,743

Source: Data processed by researchers (2025)

Model Classification Accuracy

Table 4 shows that for the financial distress category, from 30 data, as many as 27 data were accurately forecasted to be in the financial distress category with a classification accuracy of 90%. Then, from 21 data, only 14 data were correctly predicted to be in the grey area category, namely with a classification accuracy of 66,7%. Furthermore, the regression model correctly predicted 55 out of 58 data to be in the safe category, achieving a classification accuracy of 94,8%. Thus, the overall classification accuracy of the regression model is 88,1%.

Table 4. Model Classification Accuracy

Observed	*Predicted*			
	Financial Distress	*Grey Area*	Safe	*Percent Correct*
Financial Distress	27	3	0	90,0%
Grey Area	4	14	3	66,7%
Safe	0	3	55	94,8%
Overall Percentage	28,4%	18,3%	53,2%	88,1%

Source: Data processed by researchers (2025)

Estimation Parameters

Table 5 shows the estimation parameters

Table 5. Estimation Parameters

Financial Distress Category [a]		B	*Std. Error*	*Wald*	*df*	*Sig.*
Financial Distress	*Intercept*	26,294	7,341	12,830	1	<0,001
	CR	-22,861	6,913	10,935	1	<0,001
	ROA	-121,069	35,044	11,936	1	<0,001
Grey Area	*Intercept*	6,853	1,855	13,654	1	<0,001
	CR	-3,903	1,074	13,208	1	<0,001
	ROA	-41,518	11,770	12,443	1	<0,001

a. *The reference category is*: SAFE.

Source: Data processed by researchers (2025)
CR is current ratio and ROA is return on assets

Based on the estimated parameter table, there are two multinomial logistic regression models formed, namely:

1. Logit (Financial Distress)
   $Ln = \frac{Financial\ Distress}{Safe} = 26{,}294 - 22{,}861\ CR - 121{,}069\ ROA$

   The Current Ratio (CR) variable has a sig. value of 0,001 < 0,05 with a coefficient value of -22,861, meaning that the Current Ratio (CR) affects the probability of companies in the "Financial Distress" category lower than the probability of companies in the "Safe" category.

   The Return on Assets (ROA) variable has a sig. value of 0,001 < 0,05 with a coefficient value of -121,069, meaning that Return on Assets (ROA) affects the probability of companies in the "Financial Distress" category lower than the probability of companies in the "Safe" category.

2. Logit (Grey Area)
   $Ln = \frac{Grey\ Area}{Safe} = 6{,}853 - 3{,}903\ CR - 41{,}518\ ROA$

The Current Ratio (CR) variable has a sig. value of 0,001 < 0,05 with a coefficient value of -3,903, meaning that the Current Ratio (CR) affects the probability of companies in the "Grey Area" category lower than the probability of companies in the "Safe" category.

The Return on Assets (ROA) variable has a sig. value of 0,001 < 0,05 with a coefficient value of -41,518, meaning that Return on Assets (ROA) affects the probability of companies in the "Grey Area" category lower than the probability of companies in the "Safe" category.

Discussions

Current Ratio and Financial Distress

Based on the results of the study after the outlier data was removed, the Current Ratio (CR) variable in the logit (Financial Distress) and logit (Grey Area) had a sig. value of 0,001 < 0,05 with coefficient values of -22,861 and -3,903, meaning that the Current Ratio affects the probability of companies in the "Financial Distress" and "Grey Area" categories lower than the probability of companies in the "Safe" category. This study shows that the current ratio (CR) has a significant effect on financial distress, so hypothesis 1 (H1) is accepted. The results of this study are not in line with the research of Achyani & Kusumawati (2023), but they are in line with the research of Haras et al. (2022), which states that the liquidity variable measured using the current ratio has a significant effect on financial distress.

Return on Assets and Financia Distress

Based on the results of the study after the outlier data was removed, the Return on Assets (ROA) variable in the logit (Financial Distress) and logit (Grey Area) had a sig. value of 0,001 < 0,05 with coefficient values of -121,069 and -41,518, meaning that Return on Assets (ROA) affects the probability of companies in the "Financial Distress" and "Grey Area" categories lower than the probability of companies in the "Safe" category. This study shows that return on assets (ROA) has a significant effect on financial distress, so hypothesis 2 (H2) is accepted. The results of this study are not in line with the research of Maulana & Suhartati (2022)but are in line with the research of Silanno, et al. (2021), which states that the profitability variable measured using Return on Assets (ROA) has a significant effect on financial distress.

Current Ratio, Return on Assets and Financial Distress

Based on the results of the study in the simultaneous test after the outlier data was removed, the significance value (sig.) is 0.001, which means the significance value is <0.05. This indicates that overall the combination of all variables (current ratio and return on assets) affects financial distress. So it can be concluded that hypothesis 3 (H3) is accepted, which means that simultaneously the variables current ratio (CR) and return on assets (ROA) have a significant effect on financial distress.

V. Conclusions

The objective of this study is to analyze the occurrence of financial distress from indicators in financial statements, namely the current ratio and return on assets. Financial distress is measured by the Altman-Z-Score model. The current ratio is a liquidity ratio that shows the company's ability to meet long-term debts using its total current assets. Meanwhile, return on assets is the company's ability to generate net profit based on a certain level of assets. The sample of companies is 33 retail companies listed on the Indonesia Stock Exchange for the period 2020-2023. The research model estimation uses logistic regression analysis. The study's findings indicate that the current ratio and return on assets influence financial distress. The study shows that financial distress can be prevented by early detection from within the company based on financial statements.

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