

The Effect of Liquidity and Profitability on The Level of Financial Distress Using the Altman Z-Score Model

(Study Of Companies in The Automotive Sector and Components Listed on The Indonesia Stock Exchange for the 2015-2020 Period)

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Abstract

This research aimed to examine the impact of the current ratio and return on assets on the degree of financial distress in the automotive and component manufacturing sectors of the Indonesia Stock Exchange during the period of 2015–2020, utilizing the Altman Z-score model. Furthermore, the objective of this investigation is to examine the primary determinant between the current ratio and return on assets about the degree of financial distress, utilizing the Altman z-score model, within the automotive and component sub-sector manufacturing firms that are publicly traded in the Indonesia Stock Exchange from 2015 to 2020.

The present study employs a descriptive-verification research methodology. The present study employs secondary data from information sourced from <https://idx.bei.co.id/>. Conduct data collection methodologies utilizing documentation techniques. The present study has selected a population of 13 manufacturing companies in the automotive and component sub-sectors listed on the Indonesia Stock Exchange from 2015 to 2020. Non-Probability Sampling was utilized to determine the sample size of ten companies that meet the established criteria. The data underwent analysis through the utilization of multiple linear regression as well as hypothesis testing via the t-test and F-test. The findings of the present investigation suggest that the current ratio and the return on assets exhibit a noteworthy and favorable impact on the degree of financial distress, as measured by the Altman z-score, at a rate of 73.4%.

Keywords: Current Ratio, Return on Assets, Level of Financial Distress

INTRODUCTION

The year 2020 has presented significant challenges to the global community due to the protracted COVID-19 pandemic. Indonesia is not an anomaly. Indonesia ranks among the highest in terms of COVID-19 cases in Asia. Amidst the COVID-19 pandemic, a considerable number of enterprises experienced insolvency. The global outbreak of COVID-19 has exerted significant strain on both the global and Indonesian economies, to the point of a potential recession. It is indisputable that the economic progress of Indonesia has also encountered disruptions. The subsequent discourse presents a synopsis of the

economic expansion of Indonesia spanning the period of 2015 to 2020.

Amidst the 2020 pandemic, various industrial sectors encountered challenges and underwent a decline, notably automotive and component sub-sector enterprises. A significant decrease of 48.4% was observed in the year 2020. As mentioned earlier, the condition pertains to the ramifications of the COVID-19 outbreak that significantly affected Indonesia. Further elaboration is presented as a graphical representation showcasing the progression of automobile sales from 2014 to 2020.

The sales figures for 2020 exhibited an inevitable decline, with a significant drop of 48.4% from the previous year, resulting in a total sales volume of 1,030,126 units. As mentioned earlier, the condition can be attributed to reduced consumer purchasing inclination and a deteriorating economic climate. Unsurprisingly, numerous companies encountered a decline in performance and faced inevitable financial difficulties throughout the year 2020. The decrease in sales indicates a potential reduction in the company's profits, thereby exposing it to financial difficulties. (Effendi et al., 2016; Muñoz-Izquierdo et al., 2020)

Bankruptcy refers to a situation where a company cannot meet its financial obligations or experiences challenges with its liquidity. Typically, this condition does not manifest spontaneously. However, a meticulous analysis of financial reports can detect early indications at an earlier stage. It is advisable to detect indications of insolvency at an early stage in order to facilitate remedial measures. (Swalih et al., 2021; Wulandari et al., 2020)

Financial distress refers to a situation in which a company encounters financial challenges or a severe crisis that renders it unable to meet its financial obligations. (Mulyati & Ilyasa, 2020) Stated differently, insolvency occurs when the aggregate value of a firm's assets is inadequate to satisfy its external liabilities. (Purwanti, 2022)

Financial ratios can be utilized as a means to assess the degree of financial stability of a corporation. (Fredrick, 2019) Financial ratios are suitable for evaluating a company's performance and accomplishments. (Desiyanti et al., 2019)

The current ratio was employed as the liquidity ratio in this particular investigation. The current ratio is a prevalent metric utilized to evaluate a company's short-term solvency, which refers to its capacity to fulfill immediate obligations. (Carcello et al., 2018; Desiyanti et al., 2019)

Return on Assets (ROA) is a metric utilized to evaluate the efficacy of an investment in generating anticipated returns relative to the assets invested in or allocated by a company. (Amoa-Gyarteng, 2021; Foster & Sidharta, 2019) Drawing upon existing phenomena and empirical studies, the present study aims to investigate the extent to which the Current Ratio and Return on Assets impact the level of Financial Distress, as measured by the Altman Z-Score model, within the automotive sub-sector manufacturing companies and components listed on the IDX during the period spanning from 2015 to 2020.

This investigation aimed to examine and evaluate the extent of the impact of Current Ratio and Return on Assets on the degree of Financial Distress, utilizing the Altman Z-Score model, within the automotive and component sub-sector manufacturing firms that are registered in the Indonesia Stock Exchange from 2015 to 2020.

METHOD

The research methodology used in this study is a quantitative, associative approach. The interpretation of quantitative research methods can be considered positivist-based research techniques used to analyze specific populations or samples. Data is collected using research instruments to test the predetermined hypotheses, and data analysis is done quantitatively or

statistically. Purposive sampling uses to choose the sample for this investigation, and the following standards using:

1. The businesses were listed on the Indonesia Stock Exchange between 2015 and 2020 in the automotive and component subsectors.
2. The businesses that published their annual reports on the Indonesia Stock Exchange between 2015 and 2020
3. The financial statements are presented as a balance sheet and an income statement.
4. The financial report is a year-end financial report.

Ten businesses with the ASIL, AUTO, BRAM, BOLT, GDYR, GJTL, INDS, MASA, PRAS, and SMSM codes were chosen based on the abovementioned criteria. The Current Assets/Current Liabilities indicator calculates the current ratio. The EAIT/Total Asset indication is applied to the Return on Assets variable. There is also a variable for the Altman Z-Score. The traditional assumption test is used in this study to assess the data quality, and multiple regression is used to analyze the data.

RESULTS AND DISCUSSION

The present study employs the Classical Assumption Test as a data testing method, which comprises the Normality Data Test, Multicollinearity Test, Heteroskedasticity Test, and Autocorrelation Test. The present study's research outcomes reveal that the data quality assessments yielded the subsequent results:

Table 1. Classical Assumption Test Results

No	Items	Criteria	Results	Decision
1	Normality Data Test	Kolmogorov Smirnov, Sig > 0,05	0,082	Normal
2	Multicollinearity Test	VIF 1 < > 10	X1 = 1,201 X2 = 1,201	Multicollinearity does not occur
3	Heteroskedasticity Test	Lag X value = less than > 0.05	X1 = 0,125 X2 = 0,697	Heteroskedasticity does not occur
4	Autocorrelation Test	Durbin - Watson by looking at Du and dL values (k;n=2; 59)	1,974	Autocorrelation does not occur

The normality of the data can be assessed through the Kolmogorov-Smirnov test. The threshold for determining normality is a significance level (Sig) exceeding 0.05. The Sig value in this instance is 0.082, surpassing the threshold of 0.05, thereby signifying that the data conforms to a normal distribution.

The Variance Inflation Factor (VIF) test is employed to examine multicollinearity. In order to avoid multicollinearity, it is necessary to establish a criterion whereby the Variance Inflation Factor (VIF) falls within the range of greater than one and less than 10. The findings indicate that both variables X1 and X2 have VIF

values 1.201. The values fall within the acceptable range, suggesting the absence of multicollinearity in the dataset.

The heteroscedasticity test is evaluated based on a Lagrange multiplier (X) value deemed significant if it falls below the threshold of 0.05. The examination yields a numerical output of 0.125 for X1 and 0.697 for X2. Given that the obtained p-values exceed the significance level of 0.05, the statistical test suggests the absence of heteroscedasticity in the dataset.

The Durbin-Watson test was utilized to examine the presence of autocorrelation. The examination involves a comparison of the outcome against the Durbin-Watson statistic values (Du and dL) that correspond to the specified degrees of freedom (k; n = 2; 59). The administered examination produced an outcome of 1.974. Given that this value falls within the acceptable range, it suggests the absence of autocorrelation in the dataset.

Based on the results of the four tests conducted, it can be inferred that the data exhibits a normal distribution and does not demonstrate any signs of multicollinearity, heteroscedasticity, or autocorrelation.

Table 2. Verification Test Results

No	Variables	Unstandardized Coefficients	t	Sig	Decision
1	Constant	0,419	1,898	0,063	
2	Lag_X1	0,705	4,975	0,000	Significant
3	Lag_X2	28,726	8,376	0,000	Significant
4	R	0,857			
5	R Square	0,734	Error	0,266	

Based on the verification test results, the coefficient of determination of the Current Ratio on the level of Financial Distress is $0.375 \times 0.634 \times 100\% = 23.77\%$. This result's influence is strong. The coefficient of determination of Return on Assets on the level of Financial Distress is $0.632 \times 0.786 \times 100\% = 49.67\%$. This influence is said to be a strong influence. Based on Table 2 above, the effect of the Current Ratio and Return on Assets on the level of Financial Distress is 73.4%. In comparison, other variables influence the remaining 26.6%. This result means that every rise and fall in the Financial Distress level of 1% is influenced by the fluctuation of the Current Ratio and Return on Assets of 73.4%.

On average, the automotive and component sub-sector manufacturing industries exhibit a current ratio of 2.167, or 216.7%. The condition above implies that the organization can fulfill its near-term financial obligations by utilizing its assets at 216.7%. Simultaneously, the organization must satisfy the remaining obligations by utilizing tangible assets or alternative means, such as procuring loans from financial institutions or extending credit to external entities. From 2015 to 2020, PT Garuda Metalindo Tbk exhibited the highest current ratio, with a value of 7.681 or 768.1% in 2016 and 4.391 or 439.1% in 2015. Meanwhile, PT Indospring demonstrated the highest current ratio from 2017 to 2020. In the interim, it was observed that PT Astra Otoparts Tbk had a current ratio of 0.346, or 34.6%, in 2019, while PT Goodyear Indonesia Tbk exhibited the lowest current ratio in 2015–2018 and 2020.

The automotive sub-sector manufacturing industry and its components exhibit an average rate of Return on Assets of 0.044, or 4.4%. The condition above implies that the organization's capacity to generate a return on investment utilizing its assets is 4.4%. PT Selamat Sempurna Indonesia Tbk achieved the highest Return on Assets (ROA) among companies surveyed from 2015 to 2020, with a notable 22.7% in 2020. This finding underscores the company's consistently maintaining the highest ROA over the period above. Conversely, the corporations that exhibited the least favorable Return on Assets were PT PT Goodyear Indonesia Tbk, which recorded a negative value of -0.061 or -6.1% in the year 2020; PT Multi Arah Sarana Tbk during the period spanning from 2015 to 2018; and PT Prima Alloy Steel Universal Tbk in the year 2019.

On average, the automotive and component sub-sector manufacturing industries exhibit a financial distress level 3,350. The condition above implies that companies operating within the automotive sub-sector manufacturing industry and its components exhibit a state of sound financial health, as evidenced by their average financial distress level of 3.350. During 2015–2020, PT Garuda Metalindo Tbk and PT Selamat Sempurna Indonesia Tbk were identified as the companies with the most significant financial distress. Specifically, PT Garuda Metalindo Tbk exhibited a level of 12.79 in both 2015 and 2016, while PT Selamat Sempurna Indonesia Tbk experienced financial distress from 2017 to 2020. In 2019, PT Prima Alloy Steel Universal Tbk exhibited minor financial distress, with a score of 0.030. Over the past six

years, PT Prima Alloy Steel Universal Tbk has demonstrated the lowest financial distress among all companies.

The findings of this study suggest that the current ratio variable exerts a notable positive impact on the degree of financial distress based on the preceding data processing. The statistical analysis indicates that the current ratio value holds a level of significance of 0.000, which is lower than the predetermined threshold of 0.05. Moreover, the t-count current ratio value of 4.975 exceeds the t-table value of 2.003. Moreover, the coefficient of determination exhibits a moderate effect, amounting to 23.77%. The findings of this study suggest that the current ratio significantly impacts the level of financial distress. Specifically, an increase in the current ratio is associated with an increase in the financial distress number (z-score), indicating that a higher current ratio reduces the likelihood of a company experiencing financial distress.

The findings of this study suggest that the level of financial distress is positively influenced by the variable return on assets, as evidenced by the data mentioned earlier processing. The statistical analysis reveals that the return on assets holds a significant value of 0.000, indicating its strong association with the dependent variable. Moreover, the t-count value of 8.376 surpasses the t-table value of 2.002, further confirming the statistical significance of the variable. Additionally, the coefficient of determination of 49.67% suggests a reasonably strong impact of the return on assets on the dependent variable. The present study has arrived at the inference that returns on assets favorably impact the degree of financial distress. This

result implies that an increase in the return on assets value will result in a corresponding increase in the financial distress number (z-score). (Aprilia Ariqoh & Yuniningsih, 2022) The phenomenon above denotes that a rise in the return on assets can mitigate the likelihood of a company encountering financial turmoil.

The data mentioned earlier supports the study's findings that the combined influence of the current ratio and return on assets positively impacts the degree of financial hardship. Based on the statistical analysis, it can be concluded that the observed condition holds statistical significance, as the significance value of 0.000 is lower than the predetermined alpha level of 0.05. Furthermore, the Fcount value of the return on assets is 77.447, surpassing the Ftable value of 3.159. This finding suggests a considerable degree of statistical significance. As a result, the coefficient of determination is equivalent to 73.4%. The coefficient of 73.4% suggests a significant impact, indicating that the current ratio and return on assets have a considerable and statistically significant influence on the degree of financial distress, accounting for 73.4%.

This study has uncovered a positive correlation between the current ratio, returns on assets, and the degree of financial distress. (Singh & Singla, 2023) A positive correlation exists between the augmentation of the current ratio and returns on assets and the escalation of the financial distress metric (z-score). (Fifriani & Wahyu Santosa, 2020) As previously stated, this phenomenon implies that a rise in the current ratio and return on assets can decrease the probability of a company experiencing financial distress. This result is because an increase in the

number of financial distress variables (z-score) can lead to a reduction in the occurrence of financial distress within the company. (Dianova & Nahumury, 2019) Companies with high current ratios and returns on assets exhibit favorable results, which can benefit stakeholders interested in financial statement information.

CONCLUSION

The current Ratio and Return on Assets significantly positively affect financial distress. The statistical analysis indicates that the Return on Assets variable holds a high significance level, as evidenced by the Fcount value of 77.447, surpassing the Ftable value of 3.159. Moreover, the statistical significance level is high, as the significance value of 0.000 is below the widely acknowledged threshold of 0.05. The R-squared value of 73.4% indicates a substantial impact.

In order to optimize the effectiveness of the current ratio in the face of financial challenges, it is imperative to evaluate the placement of the current ratio carefully. Maintaining a position where the worth of current assets surpasses that of present debts is of the utmost importance. In order to increase the influence of the return on assets on the level of financial distress, it is crucial to optimize the utilization of corporate assets to generate maximum profits. This condition will ultimately lead to an increase in the return on assets.

In order to amplify the influence of the current ratio and return on assets on the level of financial distress, corporations should increase the magnitude of these metrics. Enhancing the current ratio and return on assets can enhance the

organization's financial well-being and mitigate the probability of financial turmoil.

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