p-ISSN: 2808-7631
e-ISSN: 2808-758

Financial Distress in Indonesian Mining Firms: Do Liquidity, Profitability, and Solvency Matter?

Sonia Rahmawati[1]), Nurtati[2]), Risa Wahyuni EDT[3*]), Agusman[4)]
Universitas Sumatera Barat, Indonesia
DOI: https://doi.org/10.32939/dhb.v7i1.6073

E-Journal Al-Dzahab
Vol. 07 Issue 01
March. 2026
Pp. 71-78

Article Info:
Received : Oct 3, 2025
Revised : Feb 15, 2026
Accepted : Feb 18, 2026

Keywords:
Financial Distress; Liquidity; Profitability; Solvency; Mining Firms

Correspondent:
risawahyuniedt@gmail.com

ABSTRACT

Purpose: *This study aims to examine whether liquidity, profitability, and solvency influence financial distress in Indonesian mining firms. The study focuses on mining companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period to determine whether these financial ratios play a significant role in explaining the occurrence of financial distress.*

Design/Methodology/Approach: *This research employs a quantitative approach using secondary data obtained from the annual financial statements of mining companies listed on the IDX from 2021 to 2024. The sample was selected using purposive sampling, resulting in 13 companies that met the research criteria. The data were analyzed using multiple linear regression analysis to examine the relationship between liquidity, profitability, solvency, and financial distress. Hypothesis testing was conducted using the t-test to assess partial effects and the F-test to evaluate simultaneous effects.*

Findings: *The results indicate that liquidity has a significant effect on financial distress in mining firms. Profitability also significantly affects financial distress, suggesting that the firm's ability to generate profit plays an important role in preventing financial difficulties. In addition, solvency significantly influences financial distress, indicating that the firm's level of leverage is associated with the likelihood of financial distress. Simultaneously, liquidity, profitability, and solvency significantly influence financial distress in Indonesian mining companies.*

Research Implications: *The findings provide important implications for investors, creditors, and corporate managers in assessing the financial condition of firms, particularly in identifying early signals of financial distress through financial ratio analysis. This study also contributes to the financial management literature by providing empirical evidence on the role of liquidity, profitability, and solvency in explaining financial distress within the mining sector in an emerging market context.*

INTRODUCTION

The increasing intensity of competition in the global business environment has compelled companies to operate more efficiently while managing rising operational costs. When firms fail to maintain competitiveness, declining performance may lead to financial losses that can eventually result in financial difficulties and, in severe cases, bankruptcy. In the financial management literature, bankruptcy and financial distress are conceptually different. Bankruptcy refers to a condition in which a firm is no longer able to sustain its operations due to severe financial deterioration, whereas financial distress represents the stage of financial decline that occurs prior to bankruptcy (Igariana, 2023). Therefore, identifying early indicators of financial distress is crucial in order to prevent firms from reaching the point of insolvency.

In Indonesia, the mining sector plays a strategic role in supporting national economic growth through its contributions to exports, employment, and government revenue. Several large mining firms, such as PT Aneka Tambang Tbk and PT Timah Tbk, have significantly contributed to the development of the national economy. Despite its important economic role, the mining sector also faces complex challenges, including market volatility, high operational

costs, and governance issues. One prominent example is the corruption case involving PT Timah Tbk, which attracted widespread public attention and raised concerns regarding corporate governance practices and financial management within the mining industry. Such incidents highlight the vulnerability of firms to financial instability and emphasize the importance of monitoring corporate financial health to prevent potential financial distress.

Financial distress refers to a condition in which a firm experiences financial difficulties before reaching bankruptcy. A company is often categorized as experiencing financial distress when it records negative operating income for two consecutive years (Igariana, 2023). In such circumstances, firms may encounter difficulties in meeting their financial obligations to creditors due to limited financial resources to maintain operational activities. Financial distress does not occur suddenly but is typically the result of prolonged financial problems that are not addressed effectively. Consequently, early detection of financial distress becomes essential for companies in order to implement strategic measures to maintain financial sustainability.

Financial ratio analysis is widely recognized as an important tool for assessing corporate financial performance and detecting potential financial distress. Among various financial indicators, liquidity, profitability, and solvency ratios are frequently used to evaluate a firm's financial condition. Liquidity ratios measure a firm's ability to meet short-term obligations (Kasmir, 2019). Effective liquidity management ensures that sufficient cash is available at the right time to fulfill financial commitments efficiently (Wahyuni, 2024). Meanwhile, profitability ratios indicate a company's ability to generate profits from its operations and assets. One commonly used profitability indicator is Return on Assets (ROA), which measures how efficiently a firm utilizes its assets to generate net income (Susanto & Setyowati, 2021). A higher ROA indicates better operational efficiency and stronger managerial performance, which can reduce the likelihood of financial distress. In addition, solvency ratios provide insights into a firm's long-term financial stability by measuring its ability to meet all financial obligations. High leverage levels may increase financial risk and expose firms to a higher probability of financial distress (Tsani, 2022). One commonly used solvency indicator is the Debt to Asset Ratio (DAR), which reflects the proportion of a company's assets financed through debt. Excessive dependence on debt financing may increase financial vulnerability; however, when utilized efficiently for productive investments, debt may also enhance firm performance and profitability. To evaluate the likelihood of financial distress, this study applies the modified Altman Z-Score model, which is widely recognized as one of the most reliable bankruptcy prediction models in financial analysis. The Altman Z-Score model is considered highly accurate in predicting potential bankruptcy, with predictive accuracy reported to reach approximately 95% in certain contexts (Wahyuni & Seriska, 2022). The model combines several financial indicators to assess whether a firm is in a safe zone, grey zone, or distress zone. As a result, the model has become one of the most widely used tools in financial distress research.

Although numerous studies have examined the determinants of financial distress using financial ratios, the empirical findings remain inconsistent. Some studies report that liquidity significantly reduces the likelihood of financial distress because firms with stronger short-term financial capacity are better able to fulfill their obligations. However, other studies suggest that liquidity does not always guarantee financial stability when companies face inefficient asset utilization or excessive reliance on external financing. Similarly, while profitability is generally associated with lower financial distress risk, some firms with positive profitability may still experience financial difficulties due to high leverage or weak financial management. The relationship between solvency and financial distress is also widely debated, as high levels of debt may increase financial risk but can also support business expansion when managed efficiently. In addition, limited empirical research specifically focuses on the Indonesian mining sector, despite its strategic economic importance and exposure to high financial risk.

Mining companies typically operate in a capital-intensive environment with significant investment requirements, fluctuating commodity prices, and substantial operational costs. These characteristics may increase the vulnerability of firms to financial distress compared to companies in other sectors.

Based on these considerations, this study aims to examine whether liquidity, profitability, and solvency influence financial distress in mining companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period. By applying the modified Altman Z-Score model as a measurement of financial distress, this research provides updated empirical evidence on financial risk within the Indonesian mining sector. The findings are expected to contribute to the financial management literature by clarifying the role of key financial ratios in predicting financial distress, while also providing practical insights for investors, creditors, and corporate managers in identifying early warning signals of financial instability and formulating appropriate financial strategies.

LITERATURE REVIEW

Signaling Theory

Signaling theory was introduced by Stephen A. Ross in 1977 and explains how companies communicate information about their financial condition to external stakeholders. According to this theory, financial statements serve as a medium through which managers provide signals to investors, creditors, and other stakeholders regarding the company's performance and financial stability (Wulandari, 2023). These signals can be interpreted as either positive signals, indicating good financial performance, or negative signals, reflecting potential financial problems. In the context of financial distress, signaling theory suggests that information disclosed in financial reports allows stakeholders to evaluate the financial health of a company. Financial indicators such as liquidity, profitability, and solvency can signal whether a company is financially stable or facing potential financial difficulties. Therefore, investors and creditors often rely on financial information as a signal when making investment and financing decisions.

Financial Distress

Financial distress refers to a condition in which a company experiences financial difficulties before reaching bankruptcy. This situation occurs when the company's operating cash flows are insufficient to meet its financial obligations, such as debt payments or operational costs (Igariana, 2023). According to Hery (2016) cited in Khotimah and Gantino (2024), financial distress arises when a company's revenue is not sufficient to cover its total expenses, resulting in continuous financial losses. If this condition continues for a prolonged period without effective management intervention, the company may eventually face bankruptcy. One commonly used approach to identify the risk of financial distress is the Altman Z-Score model developed by Edward I. Altman. This model combines several financial indicators to evaluate the financial condition of a company and to classify whether the firm is financially healthy, in a grey area, or experiencing financial distress.

Liquidity and Financial Distress

Liquidity reflects a company's ability to fulfill its short-term obligations using its current assets. According to Kasmir (2019), liquidity ratios measure the extent to which a firm can meet its short-term liabilities when they become due. Companies with strong liquidity generally have sufficient resources to maintain operational activities and settle their financial commitments on time. From the perspective of signaling theory, a high level of liquidity provides a positive signal to investors and creditors that the firm has strong short-term financial capacity. Conversely, weak liquidity may indicate potential financial difficulties and increase

the likelihood of financial distress. Firms that are unable to maintain adequate liquidity may face difficulties in paying their short-term obligations, which may ultimately lead to financial instability.
H1: Liquidity significantly affects financial distress

Profitability and Financial Distress

Profitability refers to a company's ability to generate profits from its operational activities and available resources. Profitability is often used as an indicator of managerial effectiveness in utilizing company assets to generate earnings. Firms with higher profitability typically demonstrate stronger operational performance and better financial management. From the signaling theory perspective, profitability serves as a positive signal indicating that a company is capable of generating sufficient returns from its assets. Higher profitability strengthens a firm's financial position and increases its ability to meet financial obligations. Conversely, low profitability or continuous losses may indicate operational inefficiencies and increase the risk of financial distress. Therefore, companies with stronger profitability are generally less likely to experience financial distress.
H2: Profitability significantly affects financial distress

Solvency and Financial Distress

Solvency reflects a company's ability to meet its long-term financial obligations. This ratio indicates the extent to which company assets are financed through debt. Firms with high leverage levels often face greater financial pressure because they must allocate a significant portion of their financial resources to repay debt obligations. From the signaling theory perspective, a high level of debt may signal potential financial risk to investors and creditors. When companies rely excessively on debt financing, they may face difficulties in meeting their obligations if revenues decline or operational costs increase. As a result, higher leverage may increase the probability of financial distress. Conversely, companies with balanced capital structures tend to have lower financial risk and stronger financial stability.
H3: Solvency significantly affects financial distress

METHODS

This study employs a quantitative approach with a causal research design to examine the effect of financial ratios on financial distress. A causal approach is used because this research aims to analyze the extent to which liquidity, profitability, and solvency as independent variables influence financial distress as the dependent variable. The study focuses on mining companies in the metal and mineral subsector listed on the Indonesia Stock Exchange during the 2021–2024 period. The population of this research consists of 75 mining companies listed on the Indonesia Stock Exchange. However, the sample was selected using a purposive sampling technique based on specific criteria relevant to the research objectives. After applying these criteria, 13 companies were selected as the research sample. Considering the four-year observation period from 2021 to 2024, the total number of observations obtained in this study is 52 observations. The data used in this research are secondary data obtained from the annual financial reports of mining companies, including annual reports and financial statements. The data were collected using a documentation technique by downloading financial reports from the official website of the Indonesia Stock Exchange. The collected data include financial information related to liquidity, profitability, solvency, and financial distress indicators. In this study, liquidity represents the company's ability to meet its short-term financial obligations and is measured using the current ratio. Profitability reflects the firm's ability to generate profits from its assets and is measured using return on assets (ROA). Solvency indicates the proportion of company assets financed through debt and is measured

using the debt-to-asset ratio (DAR). Meanwhile, financial distress is measured using the Altman Z-Score model, which is widely used to evaluate a company's financial condition and predict the likelihood of bankruptcy. The operational definitions and measurement indicators of the variables used in this study are presented in Table 1.

Table 1. Operational Definition of Variables

Variable	Definition	Measurement
Liquidity	Liquidity ratio reflects the company's ability to meet its short-term financial obligations.	Current Ratio = Current Assets / Current Liabilities
Profitability	Profitability ratio measures the company's ability to generate profit and evaluate managerial effectiveness in utilizing company resources.	Return on Assets (ROA) = Net Income / Total Assets
Solvency	Solvency ratio measures the extent to which company assets are financed through debt.	Debt to Asset Ratio (DAR) = Total Debt / Total Assets
Financial Distress	Financial distress refers to a condition in which a company experiences financial difficulties before reaching bankruptcy.	Altman Z-Score Model

RESULT AND DISCUSSION

Hypothesis Test Result

Hypothesis testing in this study was conducted using the t-test to examine the partial effect of each independent variable—liquidity, profitability, and solvency—on financial distress. The t-test compares the calculated t-value with the critical t-table value and evaluates the significance level of each variable. If the significance value is lower than 0.05, the variable is considered to have a statistically significant effect on the dependent variable. The results of the hypothesis testing are presented in Table 2.

Table 2. Hypothesis Test Result

Model	t-test	t table	Sig.	Info.
Liquidity	5.322	2.010	0.000	H_1 Accepted
Profitability	5.500		0.000	H_2 Accepted
Solvency	-5.937	-2.010	0.000	H_3 Accepted

Source: Data processed using IBM SPSS Statistics 25 (2025)

Based on the results presented in Table 2, liquidity has a t-value of 5.322, which is greater than the t-table value of 2.010, with a significance value of 0.000. Since the significance level is lower than 0.05, liquidity has a statistically significant effect on financial distress. This finding indicates that the company's ability to meet its short-term obligations plays an important role in determining its financial condition. Companies with stronger liquidity tend to have better financial stability and a lower likelihood of experiencing financial distress. Therefore, H1 is accepted.

Profitability also shows a significant effect on financial distress. The t-test result indicates a t-value of 5.500 with a significance value of 0.000, which is lower than the significance threshold of 0.05. This result suggests that profitability plays an important role in determining the financial health of a company. Firms with higher profitability are generally more capable of generating sufficient income to cover operational costs and financial obligations, thereby reducing the risk of financial distress. Therefore, H2 is accepted.

Meanwhile, solvency demonstrates a significant effect on financial distress. The t-test result shows a t-value of -5.937, which exceeds the absolute value of the t-table (-2.010), with a significance value of 0.000. This indicates that solvency has a statistically significant relationship with financial distress. The negative coefficient suggests that the level of leverage influences the company's financial stability, where higher reliance on debt may increase financial pressure and the likelihood of financial distress. Therefore, H3 is accepted.

DISCUSSION

The results of this study indicate that liquidity, profitability, and solvency significantly influence financial distress in mining companies listed on the Indonesia Stock Exchange during the 2021–2024 period. These findings support the perspective of signaling theory proposed by Stephen A. Ross, which suggests that financial information disclosed in corporate financial statements functions as a signal for external stakeholders regarding the firm's financial condition. Financial ratios such as liquidity, profitability, and solvency provide important signals that enable investors and creditors to evaluate whether a company is financially stable or facing potential financial difficulties.

The empirical results show that liquidity has a significant effect on financial distress. This finding indicates that the ability of a company to meet its short-term obligations plays an important role in determining its financial stability. From the perspective of signaling theory, strong liquidity sends a positive signal to investors and creditors that the firm has sufficient financial resources to sustain operational activities and meet its obligations. Conversely, weak liquidity may signal potential financial problems and increase the likelihood of financial distress. This result is consistent with the study by Pramudita & Fitriyani (2024), which found that liquidity significantly influences financial distress because firms with stronger liquidity positions are better able to maintain operational stability and meet financial obligations.

Furthermore, profitability also shows a significant effect on financial distress. This finding suggests that the company's ability to generate profits plays an important role in reducing financial risk. Firms with higher profitability generally have stronger financial performance and greater capacity to cover operational costs and financial obligations. Within the framework of signaling theory, profitability represents a positive signal that reflects efficient managerial performance and sustainable business operations. Companies with strong profitability tend to attract investor confidence because they demonstrate financial resilience and the ability to generate returns. Previous research also supports this finding. For example, Lestari & Imronudin (2024) found that profitability significantly influences financial distress, indicating that companies with stronger earnings performance are less likely to experience financial difficulties.

In addition, solvency is found to have a significant effect on financial distress. Solvency reflects the extent to which company assets are financed through debt, and it is closely related to the firm's long-term financial stability. High levels of leverage may increase financial risk because companies must allocate substantial resources to fulfill debt obligations. From the signaling theory perspective, excessive reliance on debt may provide a negative signal to investors and creditors regarding the firm's financial health. Companies with high leverage are more vulnerable to financial pressure, particularly when they experience declining revenues or increasing operational costs. These findings are in line with the study by Amoa-Gyarteng (2021), which highlights that financial ratios related to leverage and solvency play a critical role in explaining corporate financial distress because firms with higher debt levels tend to face greater financial vulnerability.

Overall, the findings of this study highlight the importance of financial ratio analysis as an early warning mechanism for detecting potential financial distress. Liquidity, profitability, and solvency provide essential financial signals that can help stakeholders assess the financial health of companies. In the mining sector, which is characterized by capital-intensive operations and high operational costs, monitoring these financial indicators becomes particularly important. The results of this study therefore contribute to the financial management literature by providing empirical evidence on how key financial ratios serve as important signals in predicting financial distress within the mining industry.

CONCLUSION

This study examined the financial performance of PT. Argamas Jaya Lab using the Economic Value Added (EVA) approach. The findings indicate that the company's financial performance experienced fluctuations during the observation period due to variations in operational profitability, invested capital, and the cost of capital. Changes in these components influenced the company's ability to generate economic value. The results show that the company was able to generate positive economic value in several periods, indicating that operating profits exceeded the cost of capital. However, the occurrence of negative EVA in one period suggests that operational profits were insufficient to compensate for the capital employed. This condition highlights the importance of efficient capital management and operational performance in sustaining value creation. Overall, the findings confirm that EVA provides a comprehensive measure of financial performance because it incorporates both profitability and capital costs in evaluating corporate performance. Therefore, EVA can serve as an effective tool for assessing whether a company truly creates economic value for its shareholders.

REFERENCES

Amoa-Gyarteng, K. (2021). Corporate financial distress: The impact of profitability, liquidity, asset productivity, activity and solvency. *Journal of Accounting, Business and Management*, 28(2), 1–15.

Azis, A. W., Kurniawan, A. W., Amin, A. M., & Aslam, A. P. (2024). Pengaruh solvabilitas, likuiditas, dan profitabilitas terhadap financial distress pada perusahaan sektor pertambangan batubara yang terdaftar di BEI. *EKOMA: Jurnal Ekonomi, Manajemen, Akuntansi, 3*(2), 640–653. https://www.idx.co.id

CNBC Indonesia. (2024a). Sejak kasus korupsi mencuat, saham Timah (TINS) udah terbang 57%. https://www.cnbcindonesia.com/market/20240403093604-17-527766/sejak-kasus-korupsi-mencuat-saham-timah--tins--udah-terbang-57

CNBC Indonesia. (2024b). Soal kasus emas 109 ton, Dirut ANTM: Ini bukan pemalsuan! https://www.cnbcindonesia.com/market/20240603125834-17-543341/soal-kasus-emas-109-ton-dirut-ANTM-ini-bukan-pemalsuan

Igariana, N. (2023). *Pengaruh laba dan arus kas terhadap financial distress pada perusahaan pertambangan sub sektor batu bara yang terdaftar di Bursa Efek Indonesia tahun 2019–2021* (Undergraduate thesis). Universitas Medan Area.

Kartika, A., Rozak, H. A., Nurhayat, I., & Bagana, B. D. (2020). Rasio keuangan sebagai prediksi financial distress. In *Prosiding SENDI_U* (pp. 978–979).

Kasmir. (2018). *Analisis laporan keuangan* (11th ed.). RajaGrafindo Persada.

Kasmir. (2019). *Pengantar manajemen keuangan*. Kencana.

Khotimah, E. N., & Gantino, R. (2024). Pengaruh profitabilitas, leverage, dan arus kas terhadap financial distress pada perusahaan pertambangan yang terdaftar di Bursa Efek Indonesia. *Jurnal Ilmiah Akuntansi*, 5, 308–327. https://doi.org/10.5281/zenodo.10525882

Lestari, D. A. (2022). Pengaruh rasio keuangan dalam memprediksi financial distress pada perusahaan sektor industri dasar dan kimia yang go public di Bursa Efek Indonesia. *Journal of Economic Perspectives, 2*(1), 1–4.

Lestari, P., & Imronudin. (2024). Analysis of factors influencing financial distress using the Altman Z-Score approach in consumer non-cyclical companies listed on the Indonesia Stock Exchange. *Jurnal Lentera Bisnis*, 13(3), 152–164.

Lutfidya, L. (2022). *Pengaruh likuiditas, solvabilitas, dan profitabilitas terhadap financial distress dimoderasi dengan ukuran perusahaan* (Undergraduate thesis). Universitas Muhammadiyah Surakarta.

Pramudita, R., & Fitriyani, L. Y. (2024). Analysis of the effect of profitability, liquidity, operating cash flow, and capital structure on financial distress with the Altman Z-Score approach. *Journal of Multiparadigm Accounting Research*.

Ross, S. A. (1977). The determination of financial structure: The incentive-signalling approach. *The Bell Journal of Economics*, 8(1), 23–40.

Saputri, M. Y., Nurtati, & Wahyuni, R. E. D. T. (2023). Pengaruh financial distress dan leverage terhadap konservatisme akuntansi pada perusahaan ritel yang terdaftar di Bursa Efek Indonesia. *Jurnal Point Equilibrium Manajemen dan Akuntansi, 5*(2), 181–194.

Stepani, P. N., & Nugroho, L. (2023). Pengaruh profitabilitas, likuiditas, leverage, dan ukuran perusahaan terhadap financial distress pada perusahaan consumer non-cyclicals yang terdaftar di Bursa Efek Indonesia periode 2019–2021. *Journal of Trends Economics and Accounting Research, 3*(3), 194–205. https://doi.org/10.47065/jtear.v3i3.551

Sugiyono. (2018). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.

Susanto, I., & Setyowati, I. (2021). Pengaruh net profit margin dan return on assets terhadap financial distress perusahaan sektor pertambangan batubara yang terdaftar di BEI periode 2014–2018. *Jurnal Pajak Vokasi (JUPASI), 2*(2), 78–84. https://doi.org/10.31334/jupasi.v2i2.1432

Susanto, J. G. Y., & Handoyo, S. E. (2023). Pengaruh likuiditas, profitabilitas, solvabilitas, dan aktivitas terhadap financial distress pada perusahaan yang terdaftar di Bursa Efek Indonesia periode 2020–2021. *Jurnal Manajemen Bisnis dan Kewirausahaan, 7*(5), 1139–1152. https://doi.org/10.24912/jmbk.v7i5.26513

Tsani, D. R. K. (2022). *Pengaruh profitabilitas dan leverage terhadap financial distress pada industri pertambangan yang terdaftar di Bursa Efek Indonesia tahun 2016–2020* (Undergraduate thesis).

Wahyuni, R. E. D. T., & Seriska, H. (2022). Altman Z-Score dan Springate: Metode komparasi dalam memprediksi kemungkinan kebangkrutan suatu perusahaan. *Akuntabilitas, 15*(2), 229–240. https://doi.org/10.15408/akt.v15i2.28600

Wulandari, P. (2023). *Pengaruh likuiditas, profitabilitas, leverage, dan arus kas terhadap financial distress pada perusahaan transportasi dan logistik yang terdaftar di Bursa Efek Indonesia periode 2019–2021*.