

The Effect of Financial Distress, Cash Flow, And Liquidity on Going Concern Audit Opinion

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Abstract

This study examines the relationship between financial distress, cash flow, and liquidity and going concern audit opinions among transportation and logistics issuers on the Indonesian Stock Exchange. The research uses quantitative secondary data for 2021–2024. Purposive sampling produced 27 firms and 108 observations. Financial distress is represented by the Revised Altman Z-Score, cash flow by operating cash flow divided by total liabilities, and liquidity by the current ratio. Logistic regression with SPSS 26 is used to test the hypotheses. The Revised Altman Z-Score was negatively and significantly associated with the opinion ($B = -0.063$, $p = 0.005$), because a lower score indicates greater distress, the proxy-consistent H1 is supported. Cash flow also shows a negative significant relationship ($B = -8.334$, $p = 0.011$), supporting H2. Liquidity is not significant ($B = -0.549$, $p = 0.071$), therefore, H3 is rejected. The three predictors are jointly significant ($\chi^2 = 52.440$, $p = 0.000$), supporting H4. The Z-score and cash-flow ratio are significantly related to the going concern opinion, whereas liquidity is not. The Nagelkerke pseudo- R^2 is 0.662. Overall, the in-sample accuracy reaches 89.8%, but the sensitivity for going concern observations is 52.9%. The analysis covers only one sector and four years. Going concern observations are fewer than non-going concern observations, and the other explanatory variables are outside the model. The findings provide evidence on three financial condition indicators and show why the direction of the Revised Altman Z-Score must be interpreted carefully when it is used as a distress proxy.

Keywords: Cash Flow, Financial Distress, Going Concern Audit Opinion, Liquidity, Logistic Regression

1. INTRODUCTION

A going concern audit opinion is issued when an auditor identifies substantial doubt about an entity's ability to continue operating. This matters to owners, creditors, investors, and other stakeholders because it may lessen the information gap between management, acting as an agent, and owners, acting as principals (Jensen & Meckling, 1976). In reaching the opinion, auditors evaluate not only whether the financial statements are fairly presented but also circumstances that could threaten continued operations (Mutchler, 1985; Christensen et al., 2019; Carson et al., 2013). Financial information consequently helps stakeholders interpret the entity's condition and judge its ability to remain in business (Carson et al., 2013). Auditor opinions have also been incorporated into studies of bankruptcy prediction (Gavious, Milo, & Weihs, 2025).

Transportation and logistics businesses generally require large capital outlays, carry substantial fixed costs, and rely on operating activities to produce cash. Falling revenue, more expensive financing, and operational interruptions may weaken financial health and the ability to settle obligations. In the present dataset, 17 of 108 company-year observations received a going concern audit opinion, and 91 received a non-going concern opinion. The figures show that continuity concerns were still evident in this sector during 2021–2024. Clear presentation of financial information is likewise necessary for financial conditions to be interpreted correctly and used in decisions (Susanto et al., 2025).

Studies of bankruptcy and financial distress have traditionally relied on financial ratios to detect weakening corporate conditions. Ratios covering liquidity, profitability, capital structure, and cash generation can separate firms that fail from those that remain viable (Altman, 1968). Prior work also shows that predictive performance varies with the country, industry, firm size, observation window, and company characteristics (Altman et al., 2017; Habib et al., 2020). Financial ratios therefore provide useful continuity signals, but they should be read alongside other evidence available to an

auditor. Cross-country and cross-industry comparisons further indicate that the appropriate ratios and prediction framework depend on the setting in which a model is used ([Nguyen et al., 2024](#)).

When deciding whether to issue a going concern opinion, auditors review the financial conditions, firm's cash-generating capacity, management plans, and other audit evidence. Earlier research has linked financial distress, management plans, and client attributes to the issuance of such opinions ([Carson et al., 2013](#)). Reporting outcomes may also vary according to audit quality and auditor characteristics ([Visvanathan, 2021](#); [Lai, 2023](#); [Hidayah & Afandi, 2024](#)). Indonesian research has also considered prior opinions, opinion shopping, audit lag, and related client attributes in going concern reporting ([Simamora & Hendarjatno, 2019](#); [Prasetyo et al., 2021](#); [Ghardini et al., 2024](#); [Fachriyah & Wulandari, 2024](#)).

Evidence from Indonesia is not uniform across sectors or model specifications. [Salim \(2023\)](#) identifies a relationship for financial distress but not liquidity, whereas [Hidayat et al. \(2024\)](#) find no significant distress relationship. [Andini et al. \(2024\)](#) report a positive liquidity relationship for cement firms, while [Meidawati and Dwitama \(2023\)](#) find no significant liquidity relationship among consumer-goods manufacturers. [Nurbaiti and Yanti \(2022\)](#) observe a negative cash-flow relationship in coal firms, but [Fenika et al. \(2022\)](#) find no significant operating-cash-flow effect in a wider non-financial sample. Differences in proxies, industries, periods, and covariates leave the transportation and logistics sector unresolved. Newer Indonesian studies combine financial conditions with audit lag, tenure, opinion shopping, and other auditor-related variables ([Averio, 2020](#); [Salim, 2023](#); [Fachriyah & Wulandari, 2024](#); [Ghardini et al., 2024](#)). This variation in settings and specifications supports a focused test of the three financial indicators in the sector examined here ([Prayoga & Aryati, 2023](#); [Rohmawati & Djamhuri, 2024](#)).

The three predictors represent separate aspects of financial conditions. The Revised Altman Z-Score, used for financial distress, summarizes overall financial health. The cash flow-to-total-debt ratio reflects the extent to which operating cash can cover total liabilities, while the current ratio reflects the ability of current assets to settle current liabilities. Estimating them together is relevant because a firm can report adequate current assets while simultaneously generating negative operating cash or experiencing financial strain. Other research has similarly evaluated corporate health through several indicators simultaneously ([Habib et al., 2020](#)). Reviews also recommend interpreting distress through multiple indicators and alternative model specifications ([Habib et al., 2020](#); [Zhao et al., 2024](#)). Liquidity has also been studied alongside financial and audit variables in going concern research ([Andini et al., 2024](#); [Sihombing & Stevania, 2024](#); [Rahmatullah et al., 2025](#)). Four years, 2021–2024, were used to portray changes in company conditions over successive reporting periods. The interval permits movements in financial ratios and auditor opinions to be observed from one year to the next. Each sampled company contributes four observations, producing 108 company-year records. These data are intended to provide a fuller view of how financial distress, cash flow, and liquidity relate to going concern audit opinions in the selected sector.

This study evaluates the relationships between financial distress, cash flow, and liquidity with going concern audit opinions for transportation and logistics issuers on the Indonesian Stock Exchange in 2021–2024. While much prior work focuses on manufacturing, cement, or coal, the present analysis combines a composite financial-health score, operating cash coverage of total liabilities, and short-term liquidity for this sector and period. It considers both the separate relationships and the fit of the joint model; the design does not demonstrate that any indicator causes an auditor's opinion. The evidence is intended to assist managers, auditors, and investors in interpreting financial signals relevant to business continuity.

2. LITERATURE REVIEW

2.1 Agency Theory and Going Concern Audit Opinion

Agency theory describes the contract between a principal and an agent. In a company, owners delegate decision-making authority to managers, and this separation can create conflicting interests and unequal access to information about the firm's condition and prospects ([Jensen & Meckling,](#)

1976). Independent auditors help narrow this information gap by examining the statements and communicating their opinion. Because a binary audit opinion cannot represent every continuously varying risk, financial indicators should be interpreted together with the remaining audit evidence (Christensen et al., 2019; Carson et al., 2013). Recent studies also examine whether auditor warnings and expert judgments contain information about later business failures (John & Liu, 2025; Gavius et al., 2025a).

To assess continuity, auditors combine financial information with management plans, financing support, and other evidence. A going concern opinion communicates to users that doubt exists about the entity's ability to continue operating. This judgment is professional in nature because the auditor must balance the danger of failing to warn about a troubled firm against the possibility of warning a firm that ultimately survives (Carson et al., 2013). Audit quality and auditor attributes remain relevant to the reporting process (Visvanathan, 2021; Lai, 2023; Hidayah & Afandi, 2024). In tax-audit settings, effectiveness and auditor competence are also connected with certainty of completion (Pratama et al., 2026). Work on governance, audit quality, and audit committees shows that reporting judgments have both institutional and financial foundations (Visvanathan, 2021). Audit tenure, reputation, prior opinions, and specialization have been examined in relation to going concern reporting and subsequent bankruptcy (Lai, 2023; Hidayah & Afandi, 2024; Taufiqurrahman & Suripto, 2024).

Agency theory provides the rationale for linking financial variables to going concern opinions. Weakening finances, limited cash generation, and difficulty paying near-term obligations increase the uncertainty confronting principals. Auditors use these signals as part of their continuity assessment. The analysis therefore treats financial distress, cash flow, and liquidity as predictors of the opinion. A lower Z-score represents poorer overall health, a lower operating-cash-flow-to-total-debt ratio represents less internally generated cash for obligations; and a lower current ratio may indicate short-term payment pressure. These observable signals allow the auditor to evaluate management's claims, although none should be interpreted without other evidence. The differing distress results of Salim (2023) and Hidayat et al. (2024), together with the contrasting liquidity results of Andini et al. (2024) and Meidawati and Dwitama (2023), support testing the proposed directions in this sample.

2.2 Financial Distress and Going Concern Audit Opinion

Financial distress denotes a deterioration in financial conditions that precedes bankruptcy or liquidation. Recurring losses, difficulty in paying obligations, deficient working capital, and reliance on financial restructuring may signal such conditions. Altman (1968) created the Z-score by combining several ratios to assess financial health. Subsequent studies have indicated that its predictive performance can vary by country, industry, firm size, and observation period (Altman et al., 2017; Habib et al., 2020). Indonesian evidence also links financial distress to audit-reporting decisions, including the timeliness of audit reports (Rachmawati et al., 2024). Recent prediction studies have compared ratio choices, model forms, and the reliability of underlying financial information (Nguyen et al., 2024; Nugroho & Dewayanto, 2025; Zhao et al., 2024).

A firm in financial distress faces greater difficulty sustaining operations and meeting its commitments. The resulting uncertainty can heighten an auditor's concern about continuity and make a going concern opinion more likely (Mutchler, 1985; Christensen et al., 2019; Carson et al., 2013). Distress should nevertheless be assessed with debt default, profitability, leverage, and other audit factors (Carson et al., 2013). Indonesian studies continue to combine distress with audit tenure, prior opinions, and debt default when examining going concern reporting (Nurbaiti & Permatasari, 2019; Musyaffa & Putri, 2024; Hidayat et al., 2024). Other research considers whether audit attributes or opinion shopping alter the relationship between company conditions and the auditor's report (Napitupulu & Latrini, 2022).

The study represents financial distress using the Revised Altman Z-Score. A larger score signals better financial health, whereas a smaller score signals greater distress; therefore, this inverse coding must be taken into account when reading the regression coefficient. The expected coefficient for the

observed Z-Score is consequently negative as the score declines and underlying distress increases, the probability of a going concern opinion is expected to rise. The Z-Score is a ratio-based measure within a broader literature that compares alternative prediction models and newer statistical techniques ([Taoushianis, 2025](#); [Nugroho & Dewayanto, 2025](#)).

H₁: The Revised Altman Z-score has a negative association with the likelihood of going concern audit opinions

2.3 Cash Flow and Going Concern Audit Opinion

Cash flow comprises the cash receipts and cash payments generated by a company's activities. Operating cash flow shows whether the core business produces enough cash to pay obligations, continue operations, and meet routine needs. Unlike accrual profit, it provides a direct indication of cash availability. Prior studies associate cash flow with going concern assessments, especially when firms face financial pressure ([Carson, Fargher, Geiger, Lennox, Raghunandan, & Willekens, 2013](#)). Sound cash-flow management also supports financial control and sustainability ([Habib, Costa, Huang, Bhuiyan, & Sun, 2020](#)). Researchers have evaluated cash-flow ratios in going concern decisions and compared alternative cash measures as predictors of failure ([Yanto, & Cakranegara, 2021](#); [Veronica, Ida, & Winata, 2020](#); [Nurbaiti, & Yanti, 2022](#); [Rizzo, Valentinuz, Obratil, & Pediroda, 2020](#)).

For this analysis, cash flow is measured by operating cash flow divided by total liabilities, or the cash-flow-to-total-debt ratio. A low or negative value means that operations generated little cash in relation to the obligations outstanding ([Nugrahani, Soma, & Sitorus, 2025](#)). The firm may then need asset disposals, new financing, or restructuring, which can increase the auditor's concern. Indonesian evidence also treats cash flow as relevant to going concern judgments ([Carson et al., 2013](#)). Recent work examines operating cash flow in going concern opinions and asks whether analysts' cash-flow forecasts add information for auditors ([Herdiansyah, & Novayanti, 2025](#); [Huang, Lin, & Hairston, 2026](#)). The findings remain mixed: [Nurbaiti and Yanti \(2022\)](#) report a negative relationship in coal companies, whereas [Fenika, Arum, and Herawaty \(2022\)](#) find no significant operating-cash-flow relationship in a broad non-financial sample. Their industries and measurement choices differ from the liability-scaled measure used here. A strong operating cash position gives the company funds to settle obligations and keep its activities running, which should lower the chance of a going concern opinion. [Handayani, Japlanj, and Ali \(2026\)](#) likewise found that cash flow is relevant to the going concern assumption. Therefore, the expected relationship in this study is negative.

H₂: Cash flow negatively affects going concern audit opinions

2.4 Liquidity and Going Concern Audit Opinion

Liquidity refers to the capacity to settle short-term obligations with current assets. It is represented here by the current ratio, calculated as current assets divided by current liabilities. [Rahmatullah, Rusmianto, and Pentiana \(2025\)](#) used the same proxy in their technology-sector study. A small current ratio can signal working-capital pressure and limited capacity to pay amounts falling due. Earlier studies reached different conclusions regarding liquidity and going concern opinions ([Meidawati, & Dwitama, 2023](#); [Andini, Saladin, & Nurmala, 2024](#)). The ratio has also been examined together with audit tenure, leverage, governance, and financial distress ([Simamora, & Hendarjatno, 2019](#); [Prasetyo, Dewi, & Maharani, 2021](#)).

When current assets exceed current liabilities by a comfortable margin, liquidity is high, and auditors may have less doubt about continuity ([Mangestisari, & Dwianto, 2026](#); [Abdulloyevna, 2026](#)). However, the empirical record is inconsistent. Some studies identify a liquidity relationship, whereas others find no statistically significant effect ([Meidawati and Dwitama, 2023](#); [Habib, Costa, Huang, Bhuiyan, & Sun, 2020](#)). Recent work combines liquidity with audit timing and distress and considers broader financial performance together with auditor changes ([Sihombing & Stevania, 2024](#)). [Andini et al. \(2024\)](#) report a positive relationship for cement firms, whereas [Meidawati and Dwitama \(2023\)](#) and

[Prasetyo et al. \(2021\)](#) report no significant effect in manufacturing samples. The negative direction proposed here is an empirical expectation to be tested rather than a settled conclusion.

The current ratio treats all current-asset components alike, which may explain the inconsistent results. Cash is immediately available, whereas receivables and inventories require time to become cash. Auditors also review long-term commitments, operating prospects, financing support, and management plans. Liquidity is therefore one dimension of financial health that should be read with capital adequacy, asset quality, management, and earnings ([Habib et al., 2020](#)). Interpretation also depends on the reliability of the underlying financial information ([da Silva & Shasha, 2024](#)).

H₃: Liquidity negatively affects going concern audit opinions

2.5 The Effect of Financial Distress, Cash Flow, and Liquidity on Going Concern Audit Opinion

Financial distress, operating cash generation, and liquidity portray different dimensions of a firm's condition. The Revised Altman Z-Score summarizes financial health, the cash-flow-to-total-debt ratio captures operating cash relative to total obligations, and the current ratio captures short-term payment capacity. Estimating the three jointly can provide a broader view of continuity risk. This reflects the way auditors combine multiple forms of evidence rather than relying on one ratio. Prior opinions, disclosure, and auditor attributes are additional factors considered in going concern research ([Fachriyah & Wulandari, 2024](#); [Hidayah & Afandi, 2024](#); [Taufiqurrahman & Suropto, 2024](#)).

Logistic regression evaluates each predictor, while the other predictors are held in the model. The joint test asks whether the three financial measures together improve the explanation of going concern opinions. This corresponds to the auditor's evidence-based process, which uses the complete information set rather than a single ratio ([Carson et al., 2013](#)). Comparative prediction studies also show that statistical or machine-learning results are affected by class imbalance and the quality of financial data ([Gruszczyński, 2019](#); [Noh, 2023](#); [Zhao et al., 2024](#)).

H₄: Financial distress, cash flow, and liquidity have a simultaneous effect on going-concern audit opinions

3. RESEARCH METHODOLOGY

3.1 Population and Research Sample

A quantitative design using secondary data was applied. The population comprised 40 transportation and logistics companies listed on the Indonesia Stock Exchange in 2021–2024. Purposive sampling retained firms that remained listed throughout the period, reported financial statements for each year, were not delisted, and supplied all required inputs. Thirteen firms failed the consecutive-publication requirement, leaving 27 firms and 108 company-year observations. The company-year is the unit of analysis: an issuer had to provide consecutive annual statements for 2021, 2022, 2023, and 2024, delisted issuers or records without the audit opinion or any of the three ratio inputs were excluded. The 13 exclusions occurred at the publication stage, and no additional firms were removed for delisting or missing variables, as shown in Table 1. Each retained firm contributed four annual records.

Table 1. Research sample criteria

Criteria	Number
Population of companies listed during 2021–2024	40
Less: financial statements not published consistently	(13)
Less: companies experiencing delisting	(0)
Less: incomplete research variable data	(0)
Number of sample companies	27
Number of observations (27 × 4 years)	108

Table 1 begins with 40 firms in the sample. Thirteen were removed because their financial statements were not published consistently between 2021 and 2024, no further firms were removed for delisting or incomplete variable data. The final dataset therefore contains 27 firms observed for four years (108 company-year observations). This balanced panel structure provides consistent observations across the study period, allowing the analysis to examine variations in audit opinions and financial conditions over time.

3.2 Types and Sources of Data and Variable Measurement

Annual financial statements and independent auditor reports provided the research data. The outcome, the going concern audit opinion, is binary 1 denotes a going concern opinion and 0 denotes a non-going concern opinion. The resulting data contain 17 going concern and 91 non-going concern observations. For each year from 2021 to 2024, the statement and auditor's report were collected from Indonesia Stock Exchange disclosures or the issuer's own publication. The report for a given company-year determines the outcome, while that year's statement supplies the ratio inputs, the source thesis contains the underlying tabulations. Financial distress is the first explanatory variable and is represented by Altman Z-Score:

$$Z = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4 \quad (1)$$

Formula 1 shows X_1 is working capital/total assets, X_2 is retained earnings/total assets, X_3 is earnings before interest and taxes/total assets, and X_4 is book equity/book total liabilities (Altman, 1968; Altman et al., 2017). A higher score denotes stronger financial health. Operating cash flow divided by total liabilities forms the cash-flow-to-total-debt measure. Liquidity is measured by the current ratio, or current assets divided by current liabilities. Table 2 presents the operational definitions and measurements of the outcome and all explanatory variables.

Table 2. Operational definitions and variable measurement

Variables	Proxy	Measurement
Going concern audit opinion (Y)	Dummy variable	1 = going concern audit opinion, 0 = non-going concern audit opinion
Financial distress (X_1)	Revised Altman Z-Score	$6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$, higher values indicate a healthier financial condition
Cash flow (X_2)	Cash flow to total debt ratio	Cash flow from operating activities/total liabilities
Liquidity (X_3)	Current ratio	Current assets/current liabilities

Table 2 shows the dependent going concern opinion is recorded as a dummy, whereas the three explanatory variables are measured on ratio scales. The Revised Altman Z-score is inversely related to distress, with a higher score indicating a healthier condition. Larger cash-flow-to-total-debt and current-ratio values likewise represent a stronger ability to meet payments.

3.3 Research Design and Data Analysis Tests

Because the outcome has two categories, the hypotheses were estimated using binary logistic regression. For firm i in year t , the Formula 2 was:

$$\log[p_{it}/(1 - p_{it})] = \alpha + \beta_1 Z_{it} + \beta_2 CF_{it} + \beta_3 CR_{it}, \quad (2)$$

Where p_{it} is the probability of a going concern opinion (coded 1), Z denotes the Revised Altman Z-score, CF denotes operating cash flow/total liabilities, and CR denotes the current ratio. The model estimates conditional log-odds, and the exponentiated coefficients are interpreted as odds ratios. All 108 company-year records were pooled in the reported estimation, which was processed in SPSS 26.

Analysis proceeded using descriptive statistics and inferential tests. Model fit was examined using the change in -2 Log Likelihood, adequacy was checked with the Hosmer and Lemeshow Test, Nagelkerke R Square summarized fit, and the classification table summarized predictions. The Wald test evaluated individual hypotheses, and the omnibus test of model coefficients evaluated the predictors jointly. At the five-percent level, the Wald Test assesses each explanatory variable. A hypothesis is treated as supported when $p < 0.05$ and the observed coefficient direction agrees with the proposed one. The Omnibus Test evaluates the combined contribution of financial distress, cash flow, and liquidity, while the classification table indicates how accurately the model assigns going concern and non-going concern opinions.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistical Analysis

The dataset contains 108 observations, 17 (15.7%) carry a going concern opinion, and 91 (84.3%) do not. Descriptive statistics summarize the minimum, maximum, mean, and standard deviation for each variable; the results are presented in Table 3.

Table 3. Descriptive statistical analysis results

Variables	N	Minimum	Maximum	Mean	Standard deviation
Financial distress (Revised Altman Z-Score)	108	-7.802659	2.960213	-228.58152	1.325266881
Cash flow (cash flow to total debt ratio)	108	-1.208	284.042	3.70546	28.450425
Liquidity (current ratio)	108	0.025	67.592	2.47903	6.526340
Going concern audit opinion	108	0	1	0.16	0.366

Table 3 shows the Revised Altman Z-Score, a minimum of -7.802659, a maximum of 2.960.213, a mean of -228.58152, and a standard deviation of 1.325.266881. The negative average suggests that the sampled firms generally experienced financial pressure, while the broad range reflects substantial differences between company-year observations. For the cash-flow-to-total-debt ratio, the minimum is -1.208, the maximum is 284.042, the mean is 3.70546, and the standard deviation is 28.450425. The current ratio ranges from 0.025 to 67.592, with a mean of 2.47903 and a standard deviation of 6.526340. The binary opinion variable has a mean of 0.16 and a standard deviation of 0.366, consistent with the 17 observations classified as going concern.

4.2 Logistic Regression Analysis Results

The -2 Log Likelihood falls from 94.035 in Block 0 to 41.595 in Block 1, a reduction of 52.440 after the predictors are added. The Omnibus Test of model coefficients gives $\chi^2 = 52.440$ with $p = 0.000$. Thus, the specification containing financial distress, cash flow, and liquidity fits better than the constant-only specification.

Table 4. Regression model adequacy test results

Test	Value	Description
-2 Log Likelihood Block 0	94.035	Model contains only the constant
-2 Log Likelihood Block 1	41.595	Decreased by 52.440
Omnibus Test of Model Coefficients	$\chi^2 = 52.440$, $df = 3$, Sig. = 0.000	Model is significant simultaneously
Hosmer and Lemeshow Test	$\chi^2 = 7.390$, $df = 8$, Sig. = 0.495	Model is adequate for use
Cox and Snell R Square	0.385	Pseudo- R^2 measure of model fit
Nagelkerke R Square	0.662	Pseudo- $R^2 = 0.662$, not variance explained
Overall classification accuracy	89.8%	97 of 108 observations
Prediction of non-going concern audit opinions	96.7%	88 of 91 observations

Test	Value	Description
Prediction of going concern audit opinions	52.9%	9 of 17 observations

Table 4 shows the Hosmer–Lemeshow test yields $\chi^2 = 7.390$ and $p = 0.495$. This p -value does not indicate lack of fit by that test, although it cannot by itself demonstrate predictive reliability, particularly for the smaller going concern group. Nagelkerke R Square is 0.662, it summarizes relative model fit and should not be read as 66.2% of outcome variance or as a numerical share attributable to omitted variables.

The model classified 89.8% of the 108 observations correctly. It identifies 88 of 91 non-going-concern cases (96.7%) and 9 of 17 going-concern cases (52.9%). Because the event group is smaller, unequal rates matter. Research on rare bankruptcy events similarly warns that overall accuracy can mask weaker performance in the minority class (Gruszczyński, 2019; Noh, 2023). The reported counts implied a 75.0% positive predictive value, 52.9% sensitivity, 96.7% specificity, and approximately 74.8% balanced accuracy. Eight actual going concern cases were missed. A majority-class rule would already achieve 84.3% accuracy (91/108), therefore, the in-sample total of 89.8% should not be interpreted as equally strong recognition of both outcomes. These figures do not represent out-of-sample validation. Once adequacy was established, the Wald Test provided the partial tests for H_1 – H_3 , and the Omnibus Test of Model Coefficients provided the joint test for H_4 . Table 5 presents the estimated coefficients, Wald statistics, significance values, and decisions.

Table 5. Logistic regression test results and hypothesis decisions

Variables	B	S.E.	Wald	Sig.	Exp(B)	Decision
Financial distress (Z-Score)	-0.063	0.022	8.069	0.005	0.939	H_1 supported
Cash flow	-8.334	3.285	6.438	0.011	0.000 ²	H_2 accepted
Liquidity	-0.549	0.304	3.258	0.071	0.577	H_3 rejected
Constant	-1.097	0.619	3.142	0.076	0.334	-

Notes: The Revised Altman Z-Score moves inversely with the level of financial distress. H_1 is framed in the direction of the measured Z-score, so its negative, significant coefficient supports H_1 , increasing underlying distress has the opposite substantive direction. The Exp(B) value for the cash flow variable was rounded by SPSS to 0.000.

Table 5 indicates a negative Z-score coefficient with $p = 0.005$, supporting the proxy-consistent H_1 . Cash flow also has a negative coefficient and $p = 0.011$, therefore, H_2 is accepted. Liquidity has a $p = 0.071$, and H_3 is rejected. The joint test has $p = 0.000$, supporting H_4 . These findings indicate that Z-score and cash flow are significant determinants in explaining the observed financial condition, whereas liquidity alone does not provide sufficient evidence of influence within the model.

4.3 Effect of Financial Distress on Going Concern Audit Opinion

The Wald statistic for the distress measure is $B = -0.063$ with $p = 0.005$, and the sign agrees with H_1 as defined for the observed Z-Score. Therefore, H_1 is supported. Because the score is an inverse proxy, a smaller Z-Score indicates more distress and a higher likelihood of a going concern opinion. With the other ratios held constant, increasing the score by one point multiplies the odds by $\exp(-0.063) \approx 0.939$, or approximately 6.1% lower odds; this is an odds comparison and does not represent a probability change or causal effect.

The evidence indicates that auditors use financial condition as relevant information. Low Z-scores are often accompanied by recurring losses, weak working capital, or difficulty paying obligations, all of which may create doubt about continuity. The result accords with research connecting financial and bankruptcy indicators to going concern reporting (Mutchler, 1985; Altman et al., 2017; Habib et al., 2020). Indonesian studies reach related but not identical conclusions because their samples and covariates differ (Averio, 2020; Salim, 2023; Fachriyah & Wulandari, 2024; Rohmawati & Djamhuri, 2024). The direction is consistent with Salim (2023) but differs from

[Hidayat et al. \(2024\)](#). These comparisons do not show that the same proxy performs identically in every sector.

The Revised Altman Z-Score is useful as an initial financial health signal, but it cannot, by itself, determine a going concern opinion. Management plans, financing support, operating prospects, and other forms of audit evidence are necessary. Therefore, the interpretation should respect the inverse direction of the proxy when discussing distress. Combining several ratios is consistent with the broader ratio-based approach to assessing financial health ([Altman et al., 2017](#); [Habib et al., 2020](#)). International reviews show why indicator selection and model choice must be read in the context of firms studied ([Zhao et al., 2024](#)).

4.4 Effect of Cash Flow on Going Concern Audit Opinion

For cash flow, the Wald coefficient was -8.334 with $p = 0.011$. The p -value is below 0.05 and the sign follows H_2 , so H_2 is supported. A larger cash-flow-to-total-debt ratio is associated with lower odds of a going concern opinion. The coefficient is expressed per one-unit change, a 0.1-unit increase gives an odds ratio of $\exp(-8.334 \times 0.1) \approx 0.435$, conditional on the other ratios. This scaling describes the estimated association and should not be extrapolated over the full observed range or treated as a direct probability change.

Operating cash generation is relevant to the ability to settle obligations and maintain business functioning. A low or negative cash-flow-to-total-debt ratio suggests that operating cash may be insufficient for total liabilities and may consequently increase auditor concern. This result is consistent with research connecting cash flow with going concern judgments ([Carson et al., 2013](#)), while financial-management studies stress cash control for sustainability ([Habib et al., 2020](#)). Cash-flow research also supports distinguishing operating cash generation from accrual performance ([Yanto & Cakranegara, 2021](#); [Veronica et al., 2020](#); [Nurbaiti & Yanti, 2022](#)). Other ratio-based distress models provide related but not identical evidence ([Rizzo et al., 2020](#)). The negative association resembles the result of [Nurbaiti and Yanti \(2022\)](#) in coal firms but differs from [Fenika et al. \(2022\)](#) in a broader nonfinancial sample; sector, scaling, and covariate differences limit direct comparison of magnitudes.

4.5 Effect of Liquidity on Going Concern Audit Opinion

Liquidity has $B = -0.549$ and $p = 0.071$ in the Wald test. Since p exceeds 0.05, liquidity is not statistically significant, and H_3 is rejected. Within this sample, changes in the current ratio therefore do not reliably explain changes in the odds of a going concern opinion. The estimated odds ratio is 0.577 per unit, but the point estimate should not be interpreted as a dependable reduction because $p = 0.071$ is above the prespecified threshold.

The null liquidity result may reflect the current ratio's inability to show the quality and timing of current assets. Receivables and inventories may not become cash when an obligation falls due. Auditors also assess long-term commitments, operating prospects, financing support, and management plans. Earlier findings vary with the sample and variables used ([Meidawati & Dwitama, 2023](#); [Andini et al., 2024](#); [Habib et al., 2020](#)). More recent work uses different samples and combines liquidity with audit or financial variables ([Simamora & Hendarjatno, 2019](#); [Prasetyo et al., 2021](#); [Sihombing & Stevania, 2024](#)). The present null result is similar to that of [Meidawati and Dwitama \(2023\)](#) and [Prasetyo et al. \(2021\)](#), whereas [Andini et al. \(2024\)](#) report a positive relationship for cement firms. The available test cannot identify whether sector, asset quality, or model specification explains the differences.

4.6 Simultaneous Effect of Financial Distress, Cash Flow, and Liquidity on Going Concern Audit Opinion

The Omnibus Test reported $\chi^2 = 52.440$ with $p = 0.000$. Together, the three predictors improve fit over the intercept-only model, providing support for H_4 as a joint test; this does not mean that every predictor has a significant partial relationship. Nagelkerke R-Square = 0.662 is a fit index rather than 66.2% explained outcome variance, and it cannot quantify the role of omitted variables. For managers, the observed relationships make the Z-Score and operating cash coverage useful warning indicators,

however, they do not show that changing either ratio would cause an auditor to change the opinion. Auditors may consider distress and cash generation when evaluating continuity, while liquidity should be read with the other financial evidence despite its nonsignificant partial result. Reporting quality also depends on auditor competence, procedural clarity, and process characteristics ([Pratama et al., 2026](#)). Evidence on audit committees, specialization, and audit quality further supports interpreting ratios within the wider audit setting ([Visvanathan, 2021](#); [Lai, 2023](#); [Hidayah & Afandi, 2024](#)).

Investors may use the Z-score and cash-flow ratio as additional information when evaluating continuity risk, while recognizing that the model detects only 52.9% of going concern cases. They should examine cash generation, payment capacity, and the ability to sustain operations. A going concern opinion communicates uncertainty about continuity; it does not guarantee that bankruptcy will occur. Prior studies have examined distress-related market outcomes, the information in audit opinions, and their usefulness to creditors ([John & Liu, 2025](#); [Gavious et al., 2025b](#)). Work on analyst judgments likewise shows that a going concern opinion is one signal among many in assessing bankruptcy risk ([Gavious et al., 2025](#)).

5. CONCLUSIONS

5.1 Conclusion

Among 27 transportation and logistics firms observed in 2021–2024, the Revised Altman Z-Score has a negative and significant association with the going concern opinion ($B = -0.063$, $p = 0.005$). Because a lower score represents greater underlying distress, this sign is consistent with H_1 , which is supported. Cash flow is also negatively and significantly associated with the opinion, supporting H_2 , whereas liquidity is not significant and H_3 is rejected. The three measures together improve fit relative to a constant-only model ($\chi^2 = 52.440$, $p < 0.001$), supporting H_4 . This result is consistent with financial indicators contributing to an auditor's assessment, but the observational design neither tests a change in information asymmetry nor establishes causality. Overall, the in-sample accuracy is 89.8%, but the sensitivity for the 17 going concern observations is only 52.9%. Therefore, the Z-score and cash-flow ratio should be considered alongside the rest of the audit evidence.

5.2 Research Limitations

The study is subject to several limitations. It covers only the transportation and logistics sector; therefore, the findings cannot be generalized to other industries. The observation window was limited to 2021–2024. In addition, the outcome is unbalanced: 17 observations are going concern and 91 are non-going concern. Classification is consequently weaker for the going concern group (52.9%) than for the non-going concern group (96.7%). The pseudo- R^2 does not measure unexplained outcome variance, and the model omits other company and audit characteristics. Finally, four observations from each of 27 firms were pooled, so the reported tests should be interpreted in light of that design.

5.3 Suggestions and Directions for Future Research

Future studies should broaden the industries and observation periods and include additional determinants, such as profitability, leverage, firm size, audit quality, audit tenure, and opinion shopping. They should also address unequal outcome classes and compare alternative methods or specifications to assess the stability of the findings. More varied samples and additional tests can show whether the relationships among distress, cash flow, and liquidity persist across different settings. Sensitivity to rare events and the quality of financial inputs should receive particular attention when comparing model performance. This study uses financial statements and independent auditor reports published by the Indonesia Stock Exchange or the relevant companies. Variable tabulations and research calculations are provided in the Appendix of the source thesis.

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AUTHOR CONTRIBUTIONS

AT conducted conceptualization, data collection, processing and analysis, investigation, and draft preparation. Nurmala, as the second author, contributed to supervision, validation, review, and manuscript editing. Damayanti contributed to supervision, review, and manuscript editing. Destia Pentiana contributed to substantive review and manuscript editing. All authors approved the final version of the manuscript.

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