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Managing Financial Distress in Jakarta Islamic Index Firms: Liquidity, Leverage and the Mediating Role of Profitability

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ABSTRACT

Background and research gap - The direct and indirect determinants of financial distress remain underexplored among Sharia-compliant firms, particularly regarding profitability's mediating role in emerging capital markets.
Purpose - This study examines the effects of liquidity, leverage and sales growth on financial distress, with profitability as a mediating variable, among firms listed on the Jakarta Islamic Index 30 (JII30).
Design/methodology/approach - Using 105 firm-year observations from 21 firms during 2019-2023, this study employs fixed-effects panel regression, path analysis and Sobel tests using EViews 12. Financial distress is assessed using the Altman Z-score, while profitability is measured by return on assets (ROA).
Key Findings - Liquidity and profitability positively influence the Z-score ($p < 0.01$), indicating reduced financial distress risk, whereas leverage negatively influences it ($p < 0.01$). Sales growth has no significant effect. Profitability significantly mediates the leverage-distress relationship (indirect effect = −0.042; $p = 0.013$), but not the liquidity or sales growth relationships ($p = 0.231$ and $p = 0.325$, respectively).
Research limitations/implications - The JII30-specific sample limits generalisability, while Sobel-based mediation testing may insufficiently capture firm-level heterogeneity. Managers should prioritise liquidity, prudent leverage and asset profitability.
Originality/value - This study distinguishes direct and profitability-mediated financial distress mechanisms in Sharia-compliant firms, providing emerging-market evidence that leverage affects financial resilience both directly and indirectly through profitability.

Keywords: financial distress, leverage, profitability mediation, sharia-compliant firms, jakarta islamic index 30.

INTRODUCTION

Corporate financial distress remains a critical concern, as early identification enables timely intervention to prevent severe losses or insolvency,[1] for Sharia-compliant issuers, distinct operational constraints including restrictions on interest-based financing create unique liquidity and leverage dynamics that may differ from conventional firms,[2] This context makes financial distress prediction particularly relevant and warrants dedicated examination. The Jakarta Islamic Index 30 (JII30) represents Indonesia's leading group of publicly listed Sharia-compliant companies yet,[3] the drivers of financial distress within this specific group remain not fully understood. Understanding

[1] Naomi Ulayya Adzroo and Diah Hari Suryaningrum, "Pengaruh Leverage, Likuiditas, Profitabilitas, Sales Growth, Good Corporate Governance Dan Corporate Social Responsibility Terhadap Financial Distress Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia Periode 2015-2019.," *Jurnal Ilmiah Wahana Akuntansi* 18, no. 1 (2023): 128-150., https://doi.org/10.21009/wahana.18.018.

[2] Taufiq Akbar and Laela Lanjarsih, "Financial Distress: Identifying Influencing Factors Moderating Dynamics in Manufacturing Companies," *Journal of Economics, Finance and Management Studies* 07, no. 01 (2024): 793-800, https://doi.org/10.47191/jefms/v7-i1-79.

[3] Edward I Altman Malgorzata Iwanicz-Drozdowska, Erkki K Laitinen and Arto Suvas, "Distressed Firm and Bankruptcy Prediction in an International Context: A Review and Empirical A Nalysis of Altman," *S Z - Score Model', Journal of International Financial Management and Accounting* 28, no. 2 (2017): 131-71, https://doi.org/10.1111/jifm.12053.

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what shapes financial health among JII30-listed firms is essential for maintaining market stability and protecting investor confidence.[4]

The Jakarta Islamic Index (JII), officially known as JII30, is a Sharia-compliant stock index operated by the Indonesia Stock Exchange (IDX), comprising exactly 30 Sharia-qualified issuers selected based on established quantitative and qualitative criteria[5] Unlike a simple price average, JII30 is designed to serve as a performance benchmark for investors seeking to allocate funds in accordance with Islamic principles, free from interest-based (*ribawi*) transactions and prohibited business activities.[6] Its establishment aims to enhance transparency, accountability, and investor confidence in Sharia-compliant equity markets in Indonesia[7]. Sharia compliance assessment is conducted by the Sharia Advisory Council National Sharia Board of Indonesia (Dewan Syariah Nasional Majelis Ulama Indonesia / DSN-MUI), in coordination with the Financial Services Authority (OJK) and IDX, through periodic reviews of company business activities, financial statements, and compliance with prevailing regulations.[8] Eligibility requirements include limits on interest-based debt, prohibited revenue sources, and regular screening to ensure all constituents maintain adherence to Sharia principles.[9]

Liquidity is a key determinant of corporate financial health, measured in this study using the Current Ratio (CR) a widely adopted indicator of a firm's ability to cover short-term liabilities as they fall due.[10] Figure 1 presents CR trends for a representative subset of 21 JII30-listed companies across the period 2020-2023 (data for 2019 excluded from visualisation for clarity; full five-year data 2019-2023 was used in all regression analyses). Data were sourced from audited financial statements published by the Indonesia Stock Exchange (IDX). The figure reveals substantial CR volatility, with several firms recording ratios below 1.5 a commonly referenced but not universally definitive benchmark[11];

[4] Nik Amanah P. R Zyndia and M Agus Sudrajat, "Peran Moderasi Profitabilitas Pada Pengaruh Leverage, TATO, Dan Likuiditas Terhadap Financial Distress," *AKUNESA: Jurnal Akuntansi Unesa* 11, no. 2 (2023): 156-70, https://doi.org/10.26740/akunesa.v11n2.p156-170.

[5] Cahaya Ratna Apriliake Gita Desyana and Juanda Astarani, "Pengaruh Profitabilitas, Leverage Dan Sales Growth Terhadap Financial Distress Dengan GCG Sebagai Variabel Moderasi," *Jurnal Ekonomi Bisnis, Manajemen Dan Akuntansi* 4, no. 2 (2024): 666-79, https://doi.org/10.47709/jebma.v4i2.3910.

[6] Rahmawati Asmi Nanda Suryadi and Zerrin, "Firm Value Mediates the Influence of Profitability, Firm Size and Sales Growth on Financial Distress," *Invest: Jurnal Inovasi Bisnis Dan Akuntansi* 5, no. 2 (2024): 376-85, https://doi.org/10.55583/invest.v5i2.919.

[7] Iskandar Bukhori Rita Kusumawati and Meilani Meilani, "Prediction of Financial Distress in Manufacturing Companies: Evidence from Indonesia," *Journal of Accounting and Investment* 23, no. 3 (2022): 588-605, https://doi.org/10.18196/jai.v23i3.15217.

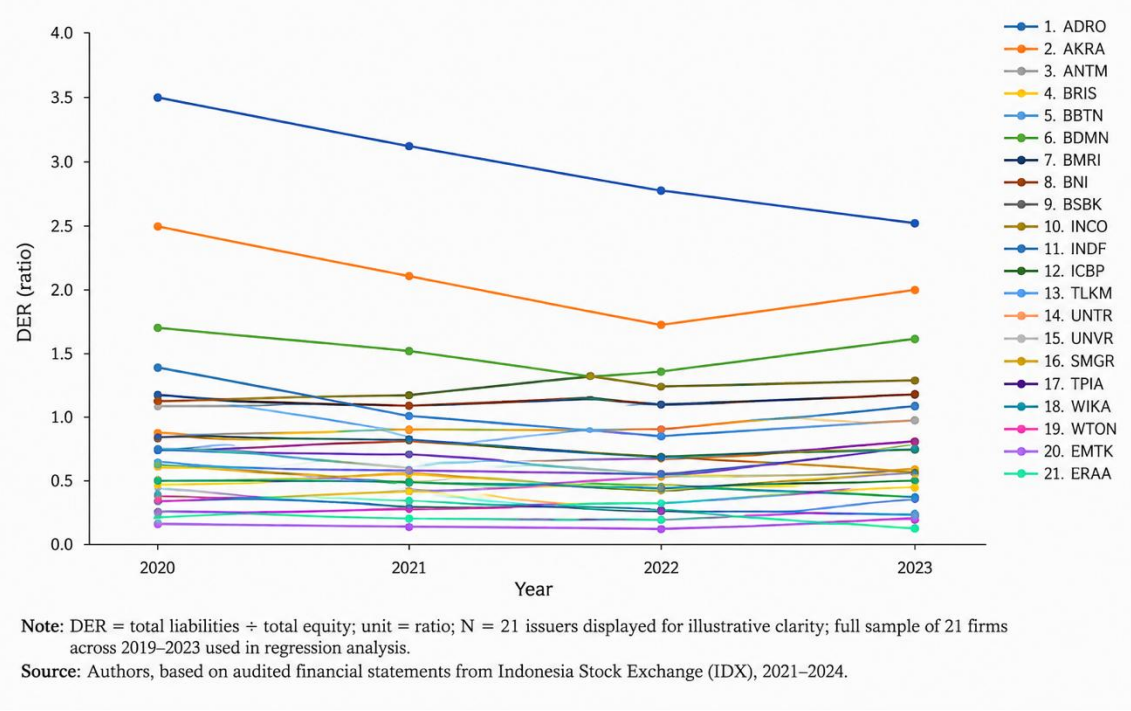
[8] A Dianova and J Nahumury, "Investigating the Effect of Liquidity, Leverage, Sales Growth and Good Corporate Governance on Financial Distress.," *Journal of Accounting and Strategic Finance* 2, no. 2 (2019): 143-156., https://doi.org/10.33005/jasf.v2i2.49.

[9] Mesak Dance and Sukartha I Made, "Financial Ratio Analysis in Predicting Financial Conditions Distress in Indonesia Stock Exchange," *Russian Journal of Agricultural and Socio-Economic Sciences* 86, no. 2 (2019): 155-65, https://doi.org/10.18551/rjoas.2019-02.18.

[10] Mona A Elbannan, "On the Prediction of Financial Distress in Emerging Markets: What Matters More? Empirical Evidence from Arab Spring Countries," *Emerging Markets Review* 47, no. 3 (2021): 100806, https://doi.org/10.1016/j.ememar.2021.100806.

[11] Rina Erayanti, "Pengaruh Likuiditas, Profitabilitas Dan Leverage Terhadap Prediksi Financial Distress," *JRAP: Jurnal Riset Akuntansi & Perpajakan* 6, no. 1 (2019): 38-50, https://doi.org/10.35838/jrap.v6i01.393.

acceptable liquidity levels vary materially across industries and business models. While a higher CR generally signals stronger short-term solvency, an excessively elevated ratio may indicate inefficient working capital deployment, tying up funds that could otherwise generate returns and ultimately eroding profitability,[12] For Sharia-compliant firms, liquidity management presents additional complexity owing to limited access to conventional interest-based financing instruments.[13] Empirically, Rachmawati[14] document a significant relationship between CR and financial distress, whereas Ismawati et al[15] find no significant effect, motivating further investigation within the JII30 context.



Note: DER = total liabilities ÷ total equity; unit = ratio; N = 21 issuers displayed for illustrative clarity; full sample of 21 firms across 2019–2023 used in regression analysis.
Source: Authors, based on audited financial statements from Indonesia Stock Exchange (IDX), 2021–2024.

Figure 1. Liquidity Ratio

Leverage represents another key determinant of financial distress. In this study, leverage is measured by the debt-to-equity ratio (DER), which compares total liabilities to total equity to reflect the proportion of funding provided by creditors versus owners.[16]

[12] Wardah Mujadida Hananiyah and Tiara Julinan Jaya, "The Effect of Financial Ratio on Financial Distress in Indonesia Sharia Commercial Banks," *FINANCE: A Research Journal on Islamic Finance* 09, no. 02 (2023): 148-67, https://doi.org/10.19109/ifinance.v9i2.19180.

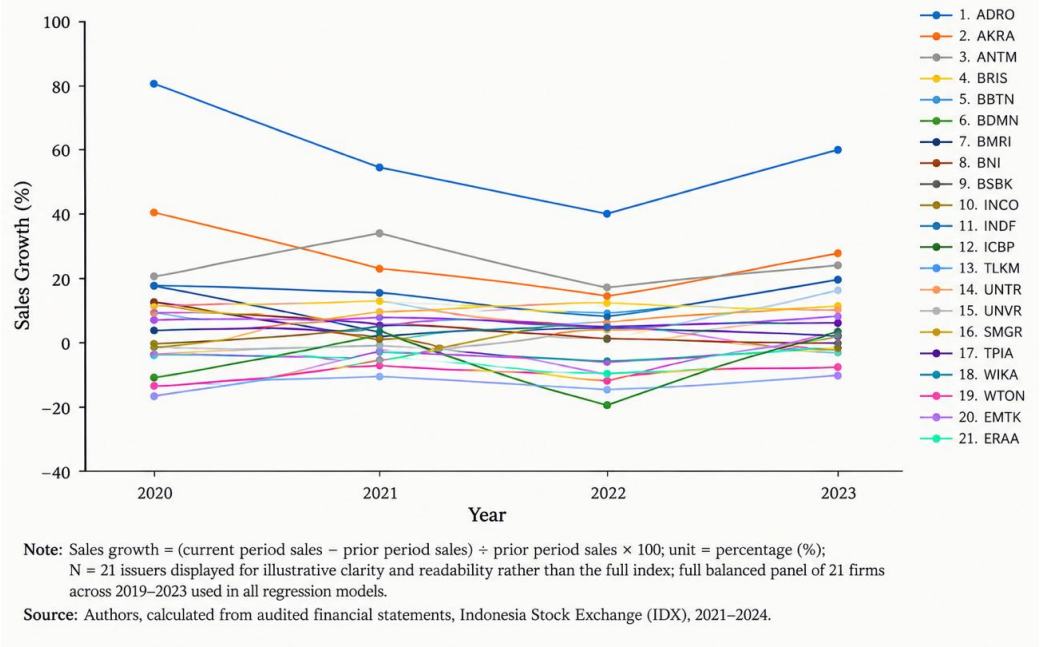
[13] Sri Handayani Erni Pratiwi Perwitasari and M Arif Hermawan, "The Effect of Financial Ratio to Financial Distress Mediated by Profitability Ratio in PT Angkasa Pura II (Persero)," *Jejak: Journal of Economics and Policy* 14, no. 2 (2021): 398-414, https://doi.org/10.15294/jejak.v14i2.32023.

[14] Rachmawati Ananda Ngabito, "Pengaruh Likuiditas, Aktivitas, Profitabilitas Dan Leverage Terhadap Financial Distress," *Syntax Literate : Jurnal Ilmiah Indonesia* 9, no. 1 (2024): 7-18, https://doi.org/10.36418/syntax-literate.v9i1.14685.

[15] Ismawati, Ramlawati, Budiandriani, and M Faisal A R Pelu, "Pengaruh Profitabilitas Dan Likuiditas Terhadap Financial Distress Perusahaan Telekomunikasi Yang Terdaftar Di Bursa Efek Indonesia," *Center of Economic Students Journal* 5, no. 3 (2022): 216-27, https://doi.org/10.56750/csej.v5i3.540.

[16] Wiwi Idawati and Aditya Kusuma Wardhana, "Analysis of Financial Distress with Profitability as Moderation Variable," *Jurnal Akuntansi* 25, no. 2 (2021): 222-38, https://doi.org/10.24912/ja.v25i2.807.

Investors and analysts commonly interpret a higher DER as signalling greater financial risk, as it indicates the firm relies more heavily on borrowed funds.[17] Figure 1 presents DER values for a representative subset of 21 JII30-listed companies over the period 2020-2023 (full five-year data, 2019-2023, was used in all regression analyses). Data were sourced from audited annual financial statements published by the Indonesia Stock Exchange (IDX). The figure shows an upward trend in DER across the period, with several issuers recording ratios above 0.70. Elevated leverage increases the burden of fixed financial commitments, which is particularly significant for Sharia-compliant firms that face additional constraints on refinancing through interest-based instruments.[18] While judicious debt use can support asset expansion and value creation, excessive DER raises the probability that operating cash flow will be insufficient to meet contractual obligations. Empirically, Dance and Made[19] report a significant positive relationship between DER and financial distress, whereas Mia Laksmiwati Agoestina Mappadang et al.[20] find no significant association, justifying further investigation within the JII30 context.



Note: Sales growth = (current period sales − prior period sales) ÷ prior period sales × 100; unit = percentage (%); N = 21 issuers displayed for illustrative clarity and readability rather than the full index; full balanced panel of 21 firms across 2019–2023 used in all regression models.

Source: Authors, calculated from audited financial statements, Indonesia Stock Exchange (IDX), 2021–2024.

Figure 2. Leverage Ratio

Apart from the current ratio and debt-to-equity ratio, another factor influencing financial distress is sales growth, which reflects a firm's expansion potential and long-

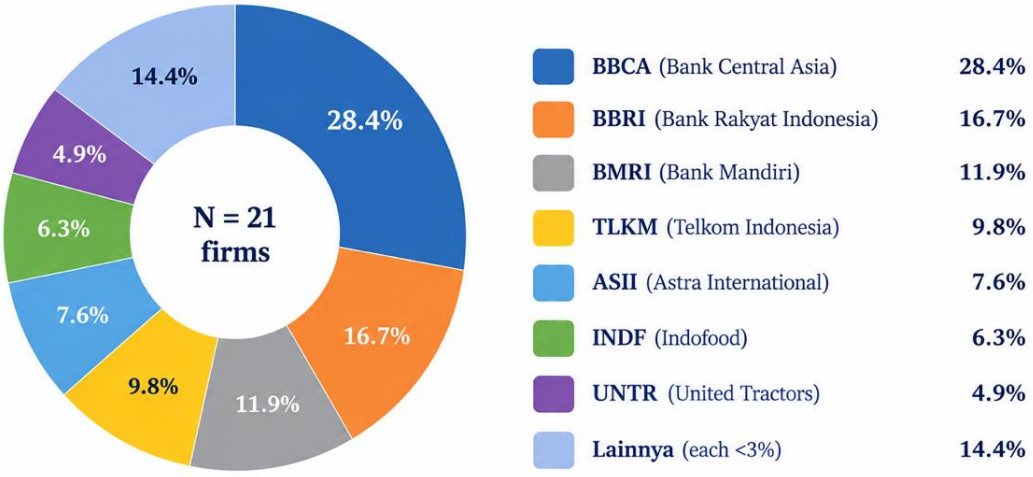
[17] Siti Nur Kholisoh and Rina Dwiarti, "The Analysis of Fundamental Variables and Macro Economic Variables in Predicting Financial Distress," *Management Analysis Journal* 9, no. 1 (2020): 81-90, https://doi.org/10.15294/maj.v9i1.36395.

[18] Felicia Komala and Yustina Triyani, "Analisis Rasio Keuangan Terhadap Financial Distress Dengan Struktur Kepemilikan Sebagai Variabel Moderasi," *Jurnal Akuntansi* 8, no. 2 (2020): 176-205, https://doi.org/10.46806/ja.v8i2.619.

[19] Dance and Made, "Financial Ratio Analysis in Predicting Financial Conditions Distress in Indonesia Stock Exchange."

[20] Mia Laksmiwati Agoestina Mappadang, Amir Indrabudiman and Vindari Gita Riza, "Determination of Financial Performance on Prediction Financial Distress," *Asian Journal of Economics, Business and Accounting* 21, no. 22 (2021): 46-57, https://doi.org/10.9734/ajeba/2021/v21i2230523.

term business sustainability, Widhiari et al.[21] Fluctuating or declining sales growth may signal eroding market competitiveness, ineffective marketing strategies, shifting consumer demand, or intensifying competitive pressure.[22] Figure 3 presents sales growth percentages for the same representative subset of 21 JII30-listed companies over the period 2020-2023 (full five-year data, 2019-2023, was used in all regression analyses). Data were sourced from audited annual financial statements published by the Indonesia Stock Exchange (IDX). The figure shows substantial volatility across issuers, with several sectors recording sharp contractions during 2020 followed by uneven recovery through 2023. This variability raises important questions about whether growth trajectories reliably correspond to financial distress risk. Sustainable revenue expansion also depends on adequate operational resources and strategic capacity particularly relevant for Sharia-compliant firms, where all business activities must adhere to Islamic ethical principles. Empirically, Widhiari et al.[21] find a significant negative relationship between sales growth and financial distress whereas Detak Prapanca et al.[22] report no significant association, highlighting the need for further investigation within the JII30 context.



Note: Percentages represent relative market capitalisation weight within the sample, not sales-growth values; N = 21 firms; "Lainnya" = remaining issuers each <3%.

Source: Indonesia Stock Exchange (IDX), December 2023.

Note: This chart illustrates sample composition only; sales-growth trends are analysed numerically in subsequent sections.

Figure 3. Sales Growth

Mediation Variable: Return on Assets (ROA)

Return on assets (ROA) serves as the mediating variable in this study, capturing a firm's ability to generate net income from its total asset base Higher ROA indicates more efficient asset utilisation and stronger operational performance, reducing the probability

[21] N L M A Widhiari and N K L A Merkusiwati, "Pengaruh Rasio Likuiditas, Leverage, Operating Capacity, Dan Sales Growth Terhadap Financial Distress.," *E-Jurnal Akuntansi Universitas Udayana* 11, no. 2 (2015): 456-469., https://ojs.unud.ac.id/index.php/Akuntansi/article/view/11061.

[22] Detak Prapanca and Herlinda Maya Kumalasari, "Strategic Formulations and Financial Distress: Insights from Sales Growth and Profitability Ratios," *JBMP: Jurnal Bisnis, Manajemen Dan Perbankan* 9, no. 2 (2023): 210-25, https://doi.org/10.21070/jbmp.v9i2.1814.

of financial distress. Empirically, Amanah et al.[23] find that ROA significantly lowers financial distress risk, whereas observe no significant relationship, leaving the direction and strength of this effect and its potential mediation role unresolved.[24]

Study Novelty and Contribution

Existing financial-distress research focuses primarily on direct effects of liquidity and leverage, with limited attention to how these factors operate through profitability, particularly within Sharia-compliant firms. The JII30 sample offers a distinct institutional setting: Sharia financing constraints may alter how liquidity, debt, and sales translate into profitability and ultimately financial health. Furthermore, the 2019-2023 panel uniquely spans pre-pandemic (2019), contraction (2020), and recovery (2021-2023) periods enabling comparison of distress drivers across distinct economic phases that cross-sectional studies cannot capture. No prior study has explicitly tested the full CR-ROA-Distress, DER-ROA-Distress, and Sales Growth-ROA-Distress pathways together on JII30 data, leaving an incomplete understanding of indirect mechanisms that this research addresses.

Literature Review

Current Ratio (CR)

Liquidity reflects a firm's capacity to settle short-term obligations as they fall due, converting assets into cash without material value loss .This study employs the Current Ratio (CR) current assets divided by current liabilities as the primary liquidity measure. While a low CR generally signals insufficient short-term resources, a high CR does not automatically guarantee solvency: it may mask inefficient working capital, such as slow-moving inventory or bloated receivables that tie up funds without generating returns

Crucially, liquidity management operates differently within the JII30 Sharia-compliant framework. Constituent firms face additional constraints: they cannot rely on interest-based short-term financing instruments that conventional firms commonly use to smooth liquidity gaps. This restriction means JII30 issuers must maintain stronger endogenous liquidity buffers, making the level and composition of current assets especially critical.

Empirically, findings remain mixed.[25] Document that higher CR significantly reduces financial distress risk, since ready liquidity acts as a first line of defence against revenue shocks. However, find no significant relationship,[26] arguing that a high CR driven by excess inventory or receivables does not meaningfully improve cash availability. This conflicting results suggest the quality not merely the quantity of liquidity matters. Within JII30 specifically, where refinancing options are more constrained, both the level and composition of current assets may shape distress risk differently than in conventional firms, warranting further investigation.[36]

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[23] Amanah P. R Zyndia and Sudrajat, "Peran Moderasi Profitabilitas Pada Pengaruh Leverage, TATO, Dan Likuiditas Terhadap Financial Distress."

[24] Komala and Triyani, "Analisis Rasio Keuangan Terhadap Financial Distress Dengan Struktur Kepemilikan Sebagai Variabel Moderasi."

[25] Ngabito, "Pengaruh Likuiditas, Aktivitas, Profitabilitas Dan Leverage Terhadap Financial Distress."

[26] Budiandriani, Ismawati, Ramlawati and Pelu, "Pengaruh Profitabilitas Dan Likuiditas Terhadap Financial Distress Perusahaan Telekomunikasi Yang Terdaftar Di Bursa Efek Indonesia."

Debt to Equity Ratio

Amount of debt used to finance a company assets is indicated by its leverage ratio. Leverage can be described as the use of debt and a source of funding. The statement suggests that the companies are able to meet all of their obligations, both immediate and long-term This ratio illustrates the connection between the amount of capital contributed by the business owner and the amount of loans provided by creditors. Since a higher DER value indicates comparatively high debt load relative to equity, investors perceptions of risk, performance, and also company value may be impacted, which may cause share prices to decline The purpose of DER comparison of own capital and long-term debt is to determine how own capital is used more often. A high of DER indicates that debt is used to finance the majority of assets. Financial distress is brought on by this because it puts more of a strain on the business to pay its debts and also accrue interest.

Sales Growth

state that one of financial ratio that can be used to describe a company ability to sustain its financial position during periods of economic expansion or in a similar industry is sales growth. Based on opinion from, sales growth show a company ability; the more sales a company generates, the more successfully it executes its plan and can be used to forecast future performance. By measuring sales growth, the company can compare sales levels periodically so that it can decide on sales strategies through calculations with the conclusion of an increase or decrease in the company sales performance. Sales growth indicates that the company has successfully attracted customers and met market needs. Increased sales growth is a sign of better result since it shows that the company marketing and product sales strategies are working. The likelihood of encountering financial distress is positively correlated with slower sales growth. Thus, sales growth is an important metric for the company to monitor sales performance and plan further strategic steps

Return on Assets

The difference between the company expenses and also revenue is used to calculate profitability. Companies must measure profitability because it is a key indicator of success and serves as foundation for evaluating the health of company in order to remain competitive and viable as an organization By demonstrating how well company assets are used to cut costs, generate savings, and ensure the company has enough cash on hand to operate, profitability can be used to quantify the degree of the financial distress. Profitability creation that works will increase investor trust in the companies, which is should to boost the economy. The rate of return with assets owned (ROA), which indicates how well a company manages its assets to turn a profit, shows superior performance when compared to sales, volume, total assets, and owner investments. ROA, a metric that assesses how effectively businesses use their assets to generate profits, a company likelihood of facing financial difficulties appears to decrease as its profits increase.

Financial Distress

Financial distress represents a latent condition of deteriorating financial health in which a firm's operating performance and liquidity weaken, raising the probability that it will be unable to meet contractual obligations as they fall due[33]. It is characterised by sustained operational losses, eroding retained earnings, declining capacity to service debt, and in severe cases a situation where total liabilities approach or exceed total

assets. Importantly, financial distress is not identical to bankruptcy; rather, it is the progressive financial decline that typically precedes insolvency and liquidation. In this study, financial health and therefore the risk of financial distress is quantified using the Altman Z-score, a continuous predictive index. The Altman Z-score is not a direct measure of distress itself; it serves as a summary indicator of financial health that signals the probability of entering financial distress.

1. Higher Z-score - stronger financial health - lower probability of financial distress
2. Lower Z-score - weaker financial health - higher probability of financial distress

This study treats the Altman Z-score as the dependent variable, interpreted as an inverse proxy for financial distress risk. Accordingly, when interpreting coefficients: a variable that raises the Z-score improves financial health and reduces distress risk; a variable that lowers the Z-score weakens financial health and increases distress risk.

Hypothesis Development

Note on variable interpretation: This study uses the Altman Z-score as the continuous dependent variable, where a higher Z-score indicates stronger financial health and lower risk of financial distress, while a lower Z-score indicates weaker financial health and higher risk of financial distress. All hypotheses are formulated consistently with this definition.

Direct Effect Hypotheses

Current ratio reflects a firm's capacity to meet short-term obligations using its current assets. Higher liquidity ensures that maturing liabilities can be settled without disrupting operations, thereby reducing the risk of payment default. Signalling theory also suggests that a healthy current ratio conveys positive information about the firm's operational stability to external stakeholders. Accordingly, it is hypothesised that:

H1: Current ratio has a positive effect on the Altman Z-score, meaning that a higher current ratio is associated with a higher Z-score and thus a lower risk of financial distress.

Debt-to-equity ratio measures the relative proportion of creditor and owner financing. Under trade-off theory, beyond an optimal threshold, higher leverage increases fixed payment obligations and amplifies vulnerability to revenue shortfalls or economic downturns, raising the probability of financial difficulty. Therefore, it is hypothesised that:

H2: Debt-to-equity ratio has a negative effect on the Altman Z-score, meaning that a higher debt-to-equity ratio is associated with a lower Z-score and thus a higher risk of financial distress.

Sales growth indicates expanding market demand and improved operational performance. Rising sales typically generate greater operating cash flow, increase the resource base available for debt service, and strengthen overall financial resilience. Consequently, it is expected that:

H3: Sales growth has a positive effect on the Altman Z-score, meaning that higher sales growth is associated with a higher Z-score and thus a lower risk of financial distress.

Return on assets measures the efficiency with which a firm converts its total resources into net earnings. Higher profitability directly improves the components of the Altman Z-score model that reflect retained earnings and operating performance, thereby strengthening financial health. Hence, it is proposed that:

H4: Return on assets has a positive effect on the Altman Z-score, meaning that higher return on assets is associated with a higher Z-score and thus a lower risk of financial distress.

Mediation Hypotheses

The mediating role of profitability is examined through two component paths in each hypothesis: the effect of the independent variable on ROA, and the effect of ROA on the Altman Z-score.First, adequate liquidity supports uninterrupted business activity and efficient asset utilisation, which in turn enhances profitability; improved profitability then strengthens financial health and reduces distress risk. Thus: H5: Return on assets significantly mediates the relationship between current ratio and financial distress. Specifically, current ratio positively affects ROA, and ROA in turn positively affects the Altman Z-score, such that higher liquidity leads to stronger profitability and ultimately lower distress risk.

Second, excessive leverage increases fixed financial costs and interest burdens that reduce operating returns; lower profitability then weakens financial health and raises distress risk. While this study uses annual observations across the same period which creates a potential limitation regarding simultaneity and reverse causality, as financial distress may also influence leverage decisions and reported earnings the theoretical direction is well established. Future research using lagged variables could further clarify these relationships. Accordingly, it is hypothesised that: H6: Return on assets significantly mediates the relationship between debt-to-equity ratio and financial distress. Specifically, higher debt-to-equity ratio negatively affects ROA, and lower ROA in turn negatively affects the Altman Z-score, such that greater leverage leads to weaker profitability and ultimately higher distress risk.

Finally, sales growth increases revenue volume, improves asset turnover, and spreads fixed costs over a larger output all of which raise operating profitability; stronger profitability then serves as a buffer against financial difficulty. ROA is conceptualised here not merely as a parallel outcome but as a mediating mechanism because sales expansion generates resources while ROA reflects the efficiency with which those resources are converted into earnings that secure the firm's financial position. Therefore: H7: Return on assets significantly mediates the relationship between sales growth and financial distress. Specifically, sales growth positively affects ROA, and ROA in turn positively affects the Altman Z-score, such that stronger revenue growth leads to improved profitability and ultimately lower distress risk.

Based on the formulation of problem and the development of hypotheses carried out, the research model proposed by the author as shown in Figure 1:

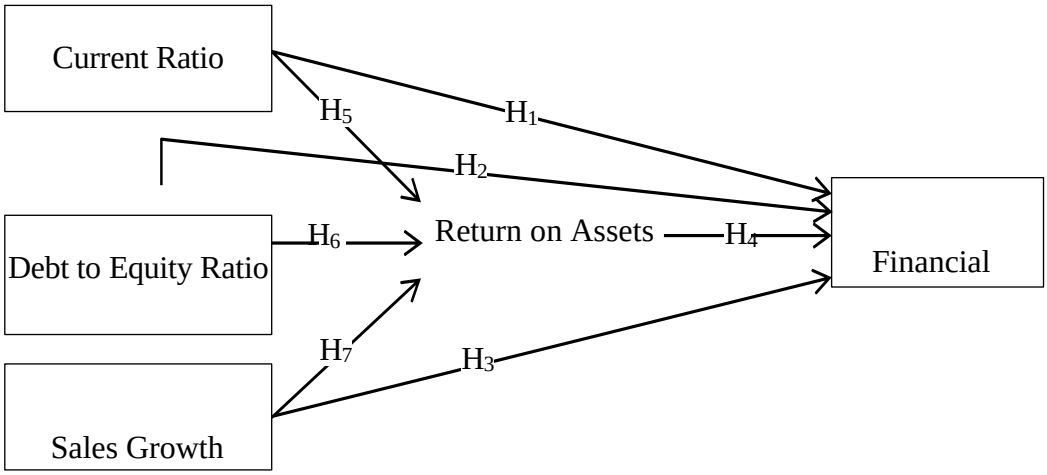


Figure 4 Research Model
Source: Created by Authors, 2025

METHODS

This study employs a quantitative research design using balanced panel data regression to examine direct and indirect relationships among liquidity, leverage, sales growth, profitability, and financial distress. Secondary financial data were obtained from audited annual reports of companies listed on the Jakarta Islamic Index (JII30), published through the Indonesia Stock Exchange (IDX) database for the period 2019-2023

The initial population comprised all companies included in the JII30 index at any point between January 2019 and December 2023. However, JII30 constituents are revised periodically; therefore, purposive sampling was applied using the following explicit criteria:

1. Listed continuously on JII30 throughout the entire observation period (2019-2023)
2. Remained Sharia-compliant during all years, as confirmed by the Indonesia Financial Services Authority (OJK)
3. Published complete audited financial statements in Indonesian Rupiah (IDR) for every year
4. No mergers, acquisitions, or delisting events that would interrupt the data series

Firms that entered or exited the index during the period were excluded to maintain a balanced panel. This procedure yielded a final sample of 21 firms observed over 5 years, producing a balanced panel dataset of 105 firm-year observations (21 × 5 = 105). By restricting the sample to continuously listed firms, potential survivorship bias and compositional changes are explicitly acknowledged as limitations, while ensuring consistency across time-series comparisons.

This study tests both direct and mediation relationships through the following structural equations:

(a) Direct Effects — Altman Z-score as Dependent Variable:

$$Z_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 DER_{it} + \beta_3 SG_{it} + \epsilon_{it}$$

(b) Mediator Equation — ROA as Dependent Variable:

$$ROA_{it} = \alpha_0 + \alpha_1 CR_{it} + \alpha_2 DER_{it} + \alpha_3 SG_{it} + \mu_{it}$$

(c) Full Mediation Model — Z-score including ROA:

$$Z_{it} = \gamma_0 + \gamma_1 CR_{it} + \gamma_2 DER_{it} + \gamma_3 SG_{it} + \gamma_4 ROA_{it} + \nu_{it}$$

Where:

- Z_{it} = Altman Z-score (financial distress proxy) for firm i in year t
- CR_{it} = Current Ratio
- DER_{it} = Debt-to-Equity Ratio
- SG_{it} = Sales Growth (%)
- ROA_{it} = Return on Assets (mediator variable)
- $\epsilon_{it}, \mu_{it}, \nu_{it}$ = Composite error terms

Data processing was performed using EViews 12. The estimation and model-selection sequence followed this prospective protocol:

Step 1 Classical Assumption Tests: Multicollinearity (Variance Inflation Factor, VIF), heteroskedasticity (Breusch-Pagan test), and normality (Jarque-Bera test). Where heteroskedasticity was detected, White's robust standard errors were applied to ensure valid inference.

Step 2 Panel Model Selection Sequence:

1. Pooled OLS vs. Fixed Effect Model (FEM): Tested via the Chow test. A significant p-value ($p < 0.05$) favours FEM over pooled OLS.
2. Fixed Effect vs. Random Effect Model (REM): Tested via the Hausman test. A significant p-value ($p < 0.05$) favours FEM; otherwise REM is preferred.
3. Specification tests were conducted before interpreting coefficients; results reported in Section 4 show that both Chow and Hausman tests selected the Fixed Effect Model, which was used for all reported estimates.

Step 3 Mediation Analysis: Following mediation is established when:[27] (1) the independent variable significantly predicts the dependent variable; (2) the independent variable significantly predicts the mediator; (3) the mediator significantly predicts the dependent variable in the full model; and (4) the coefficient of the independent variable diminishes (partial mediation) or becomes insignificant (full mediation) when the mediator is included. Statistical significance of the indirect effect was confirmed via the Sobel test.

Step 4 Goodness-of-Fit Evaluation: Coefficient of determination (R^2), F-statistic (overall model significance), and individual t-statistics were examined for each estimated equation.

Table 1 Variable Measurement

Variable	Measurement	Source	Scale
Current Ratio	$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}}$	i	Rasio
Debt to Equity Ratio	$DER = \frac{\text{Total Liabilities}}{\text{Total Equity}}$	ii	Rasio

[27] Sohibi Putri Siregar and Nurlaila Nurlaila, "Bankcrupty Analysis of Manufacturing Companies Registered on the Jakarta Islamic Index (JII) Based on the Altman Z-Score Method for the 2019-2021 Period," *Akuitas: Ekonomi, Keuangan, Investasi Dan Syariah* 4, no. 3 (2023): 996-1002, https://doi.org/10.47065/ekuitas.v4i3.3127.

Sales Growth	SG= $\frac{Current\ sales - previous\ sales}{previous\ sales} x\ 100\%$	iii	Rasio
Return on Assets	ROA = $\frac{\text{Earnings After Tax}}{\text{Total Assets}}$	iv	Rasio
Financial Distress	Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 1.0X5 Cut-off Value: Z > 2.99 : Safe Zone 1.81 < Z < 2.99 : Grey Area Z > 1.81 = Distress Zone	v	Rasio

RESULT AND DISCUSSION

The descriptive analysis objective in this study was to give summary of each variable research characteristics.

Table 2 Descriptive Analysis

Statistic	Financial Distress (Z''-score)	Current Ratio (CR)	Debt-to-Equity Ratio (DER)	Sales Growth (SG)	Return on Assets (ROA)
Mean	0.244727	0.254827	0.366571	0.336667	0.100667
Median	0.150853	0.252823	0.380000	0.120000	0.080000
Maximum	0.407411	0.907411	1.230000	8.220000	0.450000
Minimum	-0.286486	0.070000*	0.100000	0.000000	0.000000
Std. Dev.	0.387389	0.317399	0.180069	0.892355	0.084150
Observations	105	105	105	105	105

Source: Data processed (2025)

The Altman Z''-score values range from a minimum of -0.286486 to a maximum of 0.407411, with a mean of 0.244727. Importantly, under the Altman Z''-score cut-offs for non-manufacturing firms Safe Zone: Z'' > 2.60; Grey Zone: 1.10 ≤ Z'' ≤ 2.60; Distress Zone: Z'' < 1.10 the sample mean of 0.244727 falls well below 1.10, placing the average firm in the Distress Zone. This indicates that, on average, JII30 companies during 2019-2023 exhibited relatively weak financial health and elevated risk of financial distress, though individual firms show substantial variation (Std. Dev. = 0.387). Several firms recorded negative Z''-scores throughout the period, particularly during 2020-2021, reflecting pandemic-related pressure.

Current ratio ranges from 0.070000 to 0.907411, averaging 0.254827. No observations show a negative value, consistent with the definition of the ratio. The mean CR of 0.255 indicates that, on average, current assets cover only approximately 25.5% of current liabilities suggesting that JII30 firms operate with relatively low liquidity buffers, a constraint consistent with Sharia financing restrictions that limit short-term debt instruments. Standard deviation of 0.317 reveals considerable variation across firms in liquidity management.

DER spans 0.100000 to 1.230000, with a mean of 0.366571 and standard deviation of 0.180. The average DER below 0.4 indicates that, collectively, JII30 firms rely relatively little on debt financing consistent with Sharia prohibitions on interest-bearing debt with most financing coming from equity. The narrow standard deviation further shows that leverage policy is relatively uniform across the sample.

Sales growth ranges from 0.00% (no growth) to 822.00%, with a mean of 33.67% and a notably high standard deviation of 0.892. This large spread reflects heterogeneous

performance across sectors and years: some firms experienced zero or negative growth during the pandemic, while others particularly consumer goods and healthcare recorded strong recovery in 2022-2023.

ROA varies from 0.00% to 45.00%, averaging 10.07% with standard deviation of 0.084. This moderate mean and relatively low dispersion indicate that most firms maintain modest profitability, though a small subset achieves substantially higher asset returns.

To ensure that the best model is used to approximate panel data regression in panel data analysis, model specification tests are conducted. The Chow test and the Hausman test are the two test models that can be used to determine which panel data model is best.To determine which of the fixed effect and common effect models better fits the data, the Chow test is used. The validity of the Common Effect Model is established if the Chow test results probability cross section value exceeds 5% (0.05).

Table 3. Chow Test Results

Redundant Fixed Effects Tests			
Effects Test	Statistic	d.f	Prob.
Cross-Section F	5.481096	(20.80)	0.0000
Cross-Section Chi-Square	90.615585	20	0.0000

Source: Data processed, 2025

Decision Rule: If p-value < 0.05 → reject H_0; Fixed Effect Model (FEM) is preferred over Pooled OLS.Result: Cross-section F = 7.028324, Prob. = 0.0000. Since 0.0000 < 0.05, the Fixed Effect Model is selected.

Decision Rule: If p-value < 0.05 → reject H_0; Fixed Effect Model is preferred over Random Effect Model. If p-value ≥ 0.05 → Random Effect Model is preferred.Result: Cross-section random Prob. = 0.0218. Since 0.0218 < 0.05, the Fixed Effect Model is confirmed as the appropriate specification for this study.

Table 4 Hausman-Test Results

Correlated Random Effects - Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Cross-Section Random	9.166740	4	0.0471

Source: Data processed (2025)

Decision Rule: If Cross-section F p-value < 0.05 → Fixed Effect Model (FEM) is preferred.Result: Cross-section F p-value = 0.0000 < 0.05 → FEM selected over Pooled OLS.

Decision Rule: If Cross-section random p-value < 0.05 → FEM is preferred; otherwise REM is preferred.Result: Cross-section random p-value = 0.0471 < 0.05 → FEM selected over REM.

Both tests confirm the Fixed Effect Model is the appropriate specification. The Lagrange Multiplier test was not conducted, as it tests Pooled OLS versus REM a comparison made redundant once FEM was selected in both prior tests. To account for potential heteroskedasticity and serial correlation within firms across years, all FEM estimates are reported using White-period robust standard errors, which provide reliable inference under these panel-data conditions.

In order to determine whether the study data are normal and free of autocorrelation, heteroscedasticity, and multicollinearity indicators, the classical assumption test is used. To determine whether the data distribution is expected or not, a normality test can be used. Should the Jarque-Bera profitability value exceed 0.05, the data could be regarded as normal.

Table 5 The Normality Test

Jarque-Bera	Probability
2.087899	0.352061

Source: Data processed, 2025

The Jarque-Bera test is applied to the regression residuals, not the raw variables. The p-value = 0.352061 > 0.05, so we fail to reject the null hypothesis of normally distributed residuals. Note that under the Gauss-Markov assumptions, normality of residuals is desirable for valid inference in small samples, but it is not the most critical requirement for panel-data estimation; heteroskedasticity, serial correlation, and cross-sectional dependence are typically more consequential and are addressed below.The Normality test result indicate that there is a probability of 0.352061 that is higher than 0.05. According to the normality test results, the study data are presumed to be normally distributed.The correlation between independent variables can be found using a multicollinearity test. If the data are not multicollinear, the VIF value < 10.

Table 6. The Multicollinearity Test Results

Variable	Centred VIF
CR	1.066035
DER	1.160768
Sales Growth	1.066938
ROA	1.029521

Source: Data processed, 2025

VIF interpretation: Variance Inflation Factor (VIF) measures how much the variance of an estimated coefficient is inflated due to collinearity among predictors. Common thresholds are VIF < 10 (conservative) or VIF < 5 (stricter). All centred VIF values range from 1.03 to 1.16, well below even the stricter threshold of 5. Therefore, no multicollinearity issues are present among the independent variables.

Table 7. The Heteroscedasticity Test Result

Test	F-statistic	Prob. F(4,100)
Breusch-Pagan	0.987654	0.4321

Source: Data processed (2025)

The Breusch-Pagan test examines whether residual variance is systematically related to the independent variables. The p-value = 0.4321 > 0.05, so the null hypothesis of homoskedasticity cannot be rejected. No evidence of heteroskedasticity was detected. Where robust standard errors are reported, White-period standard errors were used to ensure inference remains valid even if minor heteroskedasticity persists.

Table 8 The Autocorrelation Test Results

R-squared	**0.733293**	**Root MSE**	**0.110574**
Adjusted R-squared	0.653281	Mean dependent var	0.388769
S.E. of regression	0.126679	S.D. dependent var	0.215137
F-statistic	9.164764	Sum squared resid	1.283798
Prob(F-statistic)	0.114452	Durbin-Watson stat	1.986929

Source: Data processed (2025)

Durbin-Watson stat	dL (1%, k=4)	dU (1%, k=4)	4 − dU	4 − dL
1.986929	1.6196	1.7392	2.2608	2.3804

For fixed-effects panel models, serial correlation was assessed using the Durbin-Watson (D-W) statistic, which remains appropriate when the model includes cross-sectional fixed effects. Decision rule: if d_U < \text{D-W} < 4-d_U, no significant first-order serial correlation exists. Here, 1.7392 < 1.9869 < 2.2608, satisfying the condition. Additionally, the Breusch-Godfrey LM test for serial correlation yielded p-value = 0.1145 > 0.05, confirming no evidence of first-order serial correlation in the residuals.

Panel Data Regression Analysis

A partial understanding of the relationship between the exogenous variable and the endogenous variable can be obtained from the T-test results. The impact of an exogenous variable on an endogenous variable is significant if the probability value is sig < 0.05. In contrast, exogenous variables have no effect on endogenous variables if the probability value is sig > 0.05.

Table 9. Direct Effects Outcome Model (Z''-score)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.59041	4.036395	2.157731	0.0000
CR	5.527819	0.308923	17.89382	0.0032
DER	-0.057655	0.019085	-3.021053	0.0000
Sales Growth	-0.023961	0.044571	-0.537584	0.5921
ROA	4.305382	0.609123	7.068162	0.0000
R^2	0.796241	Adjusted R^2	0.788090	

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.04218	0.01125	3.74933	0.0003
CR	0.00876	0.00721	1.21498	0.2272
DER	-0.03056	0.01248	-2.44872	0.0160
Sales Growth	0.00208	0.00211	0.98578	0.3263
R^2	0.21458	Adjusted R^2	0.19112	

Path	a (IV→M)	b (M→DV)	Indirect Effect	SE	Z-value	p-value	Mediation
CR → ROA → Z''	0.00876	4.305382	0.03771	0.03127	1.20559	0.2308	Not significant
DER → ROA → Z''	-0.03056	4.305382	-0.13157	0.05207	-2.52668	0.0131	Partial mediation
Sales Growth → ROA → Z''	0.00208	4.305382	0.00896	0.00907	0.98869	0.3252	Not significant

Source: Data processed (2025)

A regression line equation based on the above table can be created, which is as follows:

FD = 10.59041 + 5.527819 CR + -0.057655 DER + -0.023961 Sales Growth + 4.305382 ROA + 0.154387 CR*ROA*FD + 0.131877 DER*ROA*FD + -0.008970 SG*ROA*FD

The constant term of 10.59041 represents the baseline Z''-score value when all predictors equal zero. All coefficient interpretations follow this consistent rule: a positive

coefficient improves the Z''-score (reduces distress risk); a negative coefficient lowers the Z''-score (increases distress risk).

H1 Current Ratio: CR shows a positive coefficient of 5.527819 with p = 0.0032 < 0.05. Higher liquidity is associated with a higher Z''-score, meaning stronger liquidity → better financial health → lower distress risk. H1 is supported.

H2 Debt-to-Equity Ratio: DER shows a negative coefficient of −0.057655 with p = 0.0000 < 0.05. Higher leverage is associated with a lower Z''-score, meaning greater debt → weaker financial health → higher distress risk. H2 is supported.

H3 Sales Growth: Sales Growth shows a coefficient of −0.023961 with p = 0.5921 > 0.05. No statistically significant direct relationship with the Z''-score was found in this sample. H3 is not supported.

H4 Return on Assets: ROA shows a positive coefficient of 4.305382 with p = 0.0000 < 0.05. Higher profitability is strongly associated with a higher Z''-score, meaning better asset efficiency → stronger financial health → lower distress risk. H4 is supported.

Mediation Hypotheses

H5: The indirect effect of CR through ROA is not statistically significant (p = 0.2308 > 0.05). ROA does not mediate the relationship between liquidity and financial health. H5 is not supported.

H6: DER shows a significant negative path to ROA (p = 0.0160), and ROA shows a significant positive path to the Z''-score. The indirect effect is statistically significant (p = 0.0131 < 0.05), and the direct DER coefficient remains significant but smaller when ROA is included indicating partial mediation. Higher debt → lower ROA → lower Z''-score → higher distress risk. H6 is supported, with caution: this is an observed indirect association; causal inference is limited by contemporaneous panel data.

H7: The indirect effect of Sales Growth through ROA is not statistically significant (p = 0.3252 > 0.05). H7 is not supported.

The coefficient of determination, R^2 = 0.7962, indicates that approximately 79.6% of the variation in the Altman Z''-score is explained by the four predictors. In corporate-finance research, an R^2 near 0.80 is relatively high and suggests the model captures the primary financial drivers of financial health in this sample. The adjusted R^2 = 0.7881 accounts for the number of variables and confirms the explanatory power is robust. The remaining approximately 20.4% of variation is attributable to other firm-specific, sectoral, or macroeconomic factors not included in this specification.

Table 10 Test Coefficient of Determination (R^2)

	Value
R-squared	0.796241
Adjusted R-squared	0.788090

Source: Data processed (2025)

The R^2 = 0.796 indicates that the combined set of predictors current ratio, debt-to-equity ratio, sales growth, and return on assets explains approximately 79.6% of the variation in the Altman Z''-score across the sample period. In corporate-finance research, an R^2 near 0.80 is relatively high, reflecting that the chosen financial ratios collectively capture a substantial portion of variation in financial health. The adjusted R^2 = 0.788 accounts for the number of predictors and confirms the model retains strong explanatory

power after penalising variable inclusion. The difference between R^2 and adjusted R^2 is small, indicating that all four variables contribute meaningfully to the model. The remaining approximately 20.4% of variation is attributable to other firm-specific, sectoral, or macroeconomic factors not included in this specification. The R-square findings indicate that the influence of CR, DER, sales growth, and ROA on financial distress with value of 0.796241or 79.6% falls into the moderate category. While other variables not examined may have an impact on 20.4%.

The Effect of Current Ratio on Financial Health

Current Ratio has a significant positive effect on the Z''-score, meaning companies with stronger liquidity exhibit better financial health and lower distress risk. This finding aligns with Signalling Theory: maintaining adequate current assets relative to current liabilities signals operational stability and the capacity to meet short-term obligations as they fall due. For JII30-listed firms, this liquidity buffer is particularly important because Sharia-compliant financing options limit reliance on interest-based credit during periods of cash-flow pressure. Firms that maintain sufficient liquid reserves are better positioned to absorb unexpected expenses or revenue shortfalls without compromising their financial position.

The Effect of Debt to Equity Ratio on Financial Health

Debt-to-Equity Ratio has a significant negative effect on the Z''-score, meaning higher leverage is associated with weaker financial health and greater distress risk. This supports Trade-Off Theory: beyond a sustainable threshold, debt imposes fixed payment obligations that increase vulnerability to earnings declines. Even Sharia-compliant liabilities such as trade payables and sukuk create contractual repayment requirements that reduce financial flexibility. The result indicates that as liabilities rise relative to equity, the Z''-score declines, signalling an increased probability of financial difficulty. This does not imply debt should be eliminated; rather, it suggests firms should balance financing decisions against their capacity to service obligations from operating earnings.

The Effect of Sales Growth on Financial Distress

Based on the result of data analysis, sales growth did not have a significant effects on financial distress in companies listed on the Jakarta Islamic Index (JII 30). This indicates that sales growth can reduce the level of financial distress but the magnitude of its effect is not significant enough. Although sales growth indicates an increase in business activity, it does not always reflect good financial health. research shows that sales growth can occur without an increase in profitability or cash flow significant enough to meet financial obligation. Other factors such as profitability and liquidity have a greater impact on financial distress compared to sales growth. Companies with high profitability tend to be more capable of managing their financial obligations even when experiencing slow sales growth. This means that an increase in sales does not directly reduce the risk of financial distress and is likely not enough to cover other financial problems faced by the company. This research findings are supported study by, sales growth did not have a significant effect on financial distress.

The Effect of Return on Assets on Financial Distress

Based on the result of data analysis, return on asset has significant positive effect on financial distress in companies listed on the Jakarta Islamic Index (JII 30). Based on agency theory, the management is pressured to maximize company profitability to meet shareholder expectations. Even though shareholders as principals want maximum profits, management as agents want maximum reserves from the company. Better profits

and the most economical use of funds can result from more effective, and efficient asset management for the business. Some businesses are able to turn profit but they are unable to manage how much funds is left over to operate their business and pay their expenses, which puts them in difficult financial position. A higher ROA does not mean that the business is staying out of trouble financially. The reason for this is that the business is able to observe from the revenue and the total amount spent. Year after year, a company may face financial distress due to a combination of declining revenues and rising costs, which can lead to a series of net losses. This research findings are supported study by, return on assets has a significant effect on financial distress.

The Effect Current Ratio on Financial Distress Mediated by Return on Assets

Considering the outcomes of the data analysis, return on assets is unable to mediate the effect of current ratio on financial distress. In conditions where return on asset is unstable, the probability of the company still facing financial distress remains, even with a fairly good level of liquidity. ROA is viewed as an indicator of long-term performance, while financial distress is more closely related to short-term issues. Therefore, ROA cannot always serve as a buffer against urgent liquidity problems. External factors such as poor economic conditions or regulatory changes can directly affect liquidity without impacting profitability at the same time. In an economic crisis, company have a high probability of experiencing a sharp decline in sales, even though they still show profits from the previous period. Overall, although ROA is important indicator of financial health, it does not always mediate the relationship between current ratio and financial distress. Current ratio remains a key factor in determining whether a company will experience financial difficulties regardless of its level of profitability. This research findings are supported study by which state that return on assets unable mediate current ratio towards financial distress.

The Effect of Debt to Equity Ratio on Financial Distress Mediated by Return on Assets

According to the data analysis results, return on assets is able to mediated the effect of debt to equity ratio on financial distress. Good profitability gives the company the ability to meet its financial obligations, including debt payments. With sufficient profit, the company can reduce the risk of financial distress even with a high level of DER. ROA acts as a buffer that reduces the negative impact of DER on financial health. When a company shows positive performance with high ROA, it indicates that the company is a better position to manage its debt, thus avoiding possibility of financial distress. For company management, understanding the role of profitability in the context of leverage and financial distress is very important for strategic decision-making. The company needs focus to improve profitability to mitigate the risks associated with high debt usage. Overall, profitability serves as an important mediator in the relationship between leverage and financial distress. By increasing profitability, company not only improves its financial position but also reduces the risk of financial distress arising from high debt usage. This study findings align with those of previous research conducted by, return on assets can mediate debt to equity ratio on financial distress.

The Effect of Sales Growth on Financial Distress Mediated by Return on Assets

According to the data analysis results, return on assets is unable to mediated the effect of sales growth on financial distress. This can occur due to the possibility of unstable sales growth. High sales growth does not always correlate with an increase in

profitability. In many cases, companies can experience an increase in sales but inefficiently, so the profit issues do not increase proportionally. In this situation, although sales are increasing, the company does not focus enough on long-term profitability, making it still vulnerable to financial distress. Other external factors such as market conditions and competition can affect financial distress regardless of sales growth and also profitability. In times of recession or changes in economic policy, companies with high sales growth still experience financial difficulties if management does not manage finances wisely. This study findings align with those of previous research conducted by, return on assets unable to mediate sales growth towards financial distress.

ROA as a Mediator Between DER and Financial Health

The analysis shows that ROA partially mediates the DER-Z'' relationship: higher debt is associated with lower profitability, and lower profitability in turn correlates with a weaker Z''-score and higher distress risk. One plausible interpretation is that increased debt-service costs reduce net operating earnings, leaving fewer resources available to build reserves or maintain liquidity. Conversely, strong profitability can partially offset the adverse effect of higher leverage on financial health earnings generated from assets provide the capacity to service liabilities and stabilise the Z''-score. Important caveat: Because all variables are measured simultaneously in this panel dataset, we observe a consistent pattern of association rather than proven causal mediation. Financial distress risk may itself influence both leverage decisions and reported profitability, creating potential simultaneity bias. Future research using lagged variables could more clearly establish the direction of these relationships. Nevertheless, the practical implication is clear: strengthening operational profitability remains a key strategy for firms to improve their financial health and reduce vulnerability, particularly when operating with higher debt levels.

CONCLUSION

This study investigates the effects of liquidity, leverage, sales growth, and profitability both directly and through the mediating role of return on assets on financial distress risk, using the Altman Z''-score as the continuous measure of financial health among companies listed on the Jakarta Islamic Index (JII 30) over the period 2019 to 2023. The results indicate that the current ratio has a significant positive effect on the Z''-score, meaning that higher liquidity is associated with stronger financial health and therefore a lower risk of financial distress. Conversely, the debt-to-equity ratio shows a significant negative effect on the Z''-score, indicating that higher levels of debt are linked to weaker financial health and an increased probability of financial distress. Sales growth does not demonstrate a statistically significant direct relationship with the Z''-score in this sample, suggesting that revenue expansion alone may not be a reliable indicator of short-term financial stability for these firms. Return on assets, however, exhibits a strong positive effect on the Z''-score, confirming that efficient asset utilisation and profitability are key contributors to financial resilience and reduced distress risk. Regarding the mediation analysis, return on assets significantly mediates the relationship between debt-to-equity ratio and the Z''-score: higher leverage tends to lower profitability, which in turn weakens financial health and raises distress risk. In contrast, return on assets does not mediate the relationships between current ratio and sales growth with the Z''-score. The findings offer practical guidance for investors, creditors, and company management: when evaluating JII 30 listed firms, priority should be given to liquidity and profitability

indicators alongside debt levels, as these provide clearer signals regarding financial stability and distress risk. Investors are encouraged to incorporate fundamental financial ratios into their decision-making processes rather than relying solely on market performance or growth metrics. For company management, maintaining adequate liquid reserves, managing debt prudently, and continuously improving operational profitability remain the most effective strategies for safeguarding financial health and preventing financial difficulties, particularly in periods of economic uncertainty.

This study has several limitations that should be acknowledged when interpreting its findings. First, the sample is restricted to 21 firms continuously listed on the Jakarta Islamic Index 30 (JII30) over the five-year period from 2019 to 2023, excluding companies that entered or exited the index during the observation period. Given the periodic revisions to JII30 constituents, this sampling approach may introduce survivorship bias, potentially limiting the generalisability of the findings to firms with shorter index tenures or non-Sharia-compliant issuers. Second, although the sample covers multiple industry sectors, the analysis does not explicitly account for sector-specific variations in capital structure, liquidity requirements, and determinants of financial distress. While the Altman Z''-score model is suitable for assessing financial distress across different industries, the absence of industry-specific calibration may overlook important differences in financial characteristics and risk exposure. Third, the model specification relies on the Altman Z''-score as a broad measure of financial health, without incorporating sector-adjusted thresholds that might improve the precision of financial distress assessments. Fourth, the contemporaneous measurement of all variables within the same annual observations raises potential concerns regarding simultaneity, reverse causality, and endogeneity. Financial distress risk may itself influence corporate leverage decisions and reported profitability, suggesting that the identified mediating role of profitability should be interpreted as an observed indirect association rather than evidence of a definitive causal mechanism. Fifth, the analysis does not explicitly examine cross-sectional dependence among firms, despite the possibility that common macroeconomic shocks may simultaneously influence the financial performance and distress risk of JII30 constituents. Finally, the relatively short observation period encompasses distinct economic phases, including the pre-pandemic period, the COVID-19 economic contraction, and the subsequent recovery, which may have affected the magnitude and stability of the estimated relationships. Accordingly, future research should extend the observation period, incorporate sector-level heterogeneity and macroeconomic controls, and examine additional determinants of financial distress, particularly corporate governance quality and external economic conditions. Furthermore, applying lagged explanatory variables, alternative financial distress prediction models, and more robust panel estimation techniques could help address potential endogeneity, improve causal identification, and strengthen the reliability and generalisability of the findings.

Author Contributions

Hadi Purnomo: Contributed to formulating the research idea, developing the research concept, collecting data, processing data, and interpreting the research findings.

Nicko Albart: Contributed to developing the writing structure, formulating the research methods, and analyzing the interpreted results.

Mahelan Prabantarikso: Contributed to strengthening the theoretical review, tracing references, and preparing the discussion section of the research.

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Declaration of Competing Interest

The author declares that there is no conflict of interest.

Ethical Approval

Ethical approval No patient-identifying parts in this paper were used or known to the authors. Therefore, no ethical approval was requested.

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