

Impact of Liquidity, Leverage, and Operating Cash Flow on Financial Distress with Firm Size Moderation

*Firm Size Moderates
Financial Risks*

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ABSTRACT

This research is to determine the function of company size as a moderating variable in transportation companies listed on the Indonesia Stock Exchange from 2019 to 2023, as well as the influence of liquidity, leverage and operating cash flow on financial distress. Secondary data in the form of annual financial reports of transportation companies listed on the IDX was used in this research. Structural Equation Modeling is analysis technique used, while SmartPLS is used as a bootstrapping method to examine the correlations between the model's variables. The findings show that leverage has a major impact on business size, with a higher level of leverage leading to a smaller firm. Financial distress is significantly influenced by operating cash flow as well; a positive correlation indicates that businesses are under financial strain. In the suggested model, financial distress is not directly influenced by business size, liquidity, leverage, or operating cash flow, as these relationships do not demonstrate substantial effects. Liquidity and operating cash flow also have little influence on business size, suggesting that these factors are not the main factors influencing firm size in the sample.

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Keywords: Financial Distress, Firm Size, Liquidity, Leverage, Operating Cash Flow.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui fungsi ukuran perusahaan sebagai variabel moderasi pada perusahaan transportasi yang terdaftar di Bursa Efek Indonesia tahun 2019 sampai dengan 2023, serta pengaruh likuiditas, leverage dan arus kas operasi terhadap financial distress. Data sekunder berupa laporan keuangan tahunan perusahaan transportasi yang terdaftar di BEI digunakan dalam penelitian ini. Teknik analisis yang digunakan adalah Structural Equation Modeling, sedangkan metode bootstrapping yang digunakan adalah SmartPLS untuk menguji korelasi antar variabel model. Hasil penelitian menunjukkan bahwa leverage memiliki pengaruh yang besar terhadap ukuran bisnis, dengan tingkat leverage yang lebih tinggi mengarah pada perusahaan yang lebih kecil. Financial distress juga dipengaruhi secara signifikan oleh arus kas operasi; korelasi positif menunjukkan bahwa bisnis sedang mengalami tekanan keuangan. Dalam model yang disarankan, financial distress tidak secara langsung dipengaruhi oleh ukuran bisnis, likuiditas, leverage, atau arus kas operasi, karena hubungan ini tidak menunjukkan pengaruh yang substansial. Likuiditas dan arus kas operasi juga memiliki pengaruh yang kecil terhadap ukuran bisnis, menunjukkan bahwa faktor-faktor ini bukanlah faktor utama yang mempengaruhi ukuran perusahaan dalam sampel.

Kata Kunci: Kesulitan Keuangan, Ukuran Perusahaan, Likuiditas, Leverage, Arus Kas Operasional.

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INTRODUCTION

Economic instability can render companies vulnerable to financial distress, a condition where firms struggle to meet financial obligations, potentially leading to bankruptcy if prolonged. According to Kurniadi (2021), financial distress represents a critical stage before insolvency, where companies face challenges in sustaining operations within their business environment. The transportation sector in Indonesia, particularly affected by the Covid-19 pandemic, exemplifies this vulnerability. The transportation and warehousing sector experienced the steepest decline, contracting by 30.84%, driven by restrictions on mobility that curtailed public transportation usage, severely impacting companies like PT Blue Bird Tbk and PT Express Trasindo Utama Tbk. For instance, PT Blue Bird Tbk reported a revenue drop of 49.44% in 2020, from IDR 4.05 trillion in 2019 to IDR 2.05 trillion, while PT Express Trasindo Utama Tbk saw revenues plummet from IDR 134.25 billion in 2019 to IDR 21.54 billion in 2020, reflecting the combined impact of restricted movement and competition from online transportation platforms (Melani, 2021).

The rise of online transportation, supported by technological advancements, has intensified competition with conventional transportation, as online platforms offer convenience and competitive pricing. This shift exacerbated financial pressures on traditional transportation firms during the pandemic, highlighting the need for robust financial distress analysis. Financial ratios serve as critical tools for predicting financial distress, offering insights into a company's financial health up to five years before potential bankruptcy. Liquidity ratios, such as the current ratio, measure a company's ability to settle short-term debts, with higher liquidity potentially reducing financial distress risk (Kasmir, 2019). However, research presents conflicting findings. According to Runis et al., (2021), liquidity negatively affects financial distress, suggesting that higher liquidity lowers distress risk. Conversely, Simorangkir and Mauli (2020) argues liquidity positively impacts financial distress, indicating that high liquidity may reflect inefficient asset management. Similarly, leverage ratios, which assess debt-financed assets, show inconsistent results. Graña-Alvarez et al. (2024) and Bimantio and Nur (2023) find that higher leverage, measured by the Debt to Total Asset Ratio, increases financial distress risk, yet Glover (2024) suggests a negative relationship, where higher leverage reduces distress by lowering tax burdens through interest payments. Operating cash flow, another critical indicator, also yields mixed findings. Subhani et al. (2025) and Isdina and Putri (2021) indicate that higher operating cash flow reduces financial distress risk, while Subramanyam (2017) reports a positive effect, suggesting that inadequate cash flow exacerbates distress.

These inconsistencies in prior research highlight a research gap regarding the precise influence of liquidity, leverage, and operating cash flow on financial distress, particularly in the context of firm size as a moderating variable. Firm size, often measured by the natural logarithm of total assets, can influence a firm's resilience to financial distress, as larger firms typically have better access to capital markets (Hartono, 2017; Taruvinga & Sakarombe, 2024). However, studies like Amanda and Tasman (2022) and Laurena and Ramantha (2022) suggest varying impacts of firm size on financial distress, necessitating further exploration. This study aims to address this gap by examining the effects of liquidity, leverage, and operating cash flow on financial distress in transportation companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023, with firm size as a moderating variable. The transportation sector is chosen due to its significant economic role and pronounced vulnerability during the Covid-19 crisis, as evidenced by substantial revenue declines. By analyzing secondary data from annual financial reports using Structural Equation Modeling via SmartPLS, this research seeks to clarify the relationships between these financial variables and financial distress, contributing to a deeper understanding of financial stability in this critical sector.

LITERATURE REVIEW

Liquidity and Financial Distress

Signal theory suggests that companies convey financial health through signals like liquidity, influencing investor confidence (Gosain et al., 2025). Liquidity reflects a company's ability to meet short-term obligations using current assets, a key indicator of financial stability. According to Kasmir (2019), liquidity, measured by the current ratio (current assets divided by current liabilities), shows how effectively a company can settle short-term debts. A current ratio above one indicates robust liquidity, enabling timely debt repayment, while a ratio below one suggests potential liquidity issues that may lead to financial distress. Financial distress occurs when a company struggles to meet financial obligations, often a precursor to bankruptcy. Research by Simorangkir and Mauli (2020) finds that liquidity, proxied by the current ratio, negatively affects financial distress, implying that higher liquidity reduces distress risk. However, Runis et al. (2021) suggests that high liquidity may positively affect financial distress if it indicates inefficient asset management, highlighting a research gap. According to Waqas and Md-Rus (2018), liquidity serves as a positive signal to investors, enhancing market confidence and reducing distress risk. Companies with strong liquidity are better equipped to navigate economic challenges, avoiding financial strain (Fecht et al., 2024). This study hypothesizes that liquidity mitigates financial distress by ensuring short-term obligations are met efficiently.

H1: Liquidity has a negative effect on financial distress.

Leverage and Financial Distress

Leverage measures the extent to which a company finances its operations through debt, impacting its financial stability. According to Simorangkir and Mauli (2020), the leverage ratio, specifically the Debt to Total Asset Ratio (DAR), evaluates the proportion of assets funded by debt, with higher ratios indicating greater financial risk. High leverage can strain a company's ability to repay debts, increasing the likelihood of financial distress (Graña-Alvarez et al., 2024). Financial distress, as defined by Ahemed et al. (2025), is a state where firms face significant challenges in meeting debt obligations, potentially leading to insolvency. Research by De Silva et al. (2025) confirms that higher DAR positively affects financial distress, as excessive debt burdens amplify financial risk. Similarly, Bimantio and Nur (2023) find that elevated leverage increases distress likelihood, particularly when debt exceeds asset value. However, Glover (2024) suggests that leverage can negatively affect financial distress by reducing tax liabilities through interest payments, highlighting inconsistent findings. According to Abdullah et al. (2023), high leverage in Indian steel firms significantly contributes to financial distress, emphasizing debt management's role in financial stability. Companies with lower leverage are less vulnerable to economic shocks, as they face fewer repayment pressures (Xie et al., 2024). This study posits that higher leverage exacerbates financial distress due to increased debt obligations.

H2: Leverage has a positive effect on financial distress.

Operating Cash Flow and Financial Distress

Operating cash flow represents the cash generated from a company's core operations, crucial for meeting financial obligations. According to Subramanyam (2017), operating cash flow reflects a company's ability to generate sufficient cash to cover expenses and debts, directly influencing financial stability. Financial distress arises when cash flows are inadequate to meet current liabilities, increasing bankruptcy risk. Research by Phan et al. (2022) indicates that higher operating cash flow negatively impacts financial distress, as robust cash flows enable firms to manage obligations effectively. Similarly, Kamaluddin et al. (2019) find that operating cash flow, measured as cash flow divided by current liabilities, reduces financial distress risk. However, Sugiana and Hidayat (2023) argues

that operating cash flow can positively affect financial distress if it fails to cover liabilities, creating a research gap. According to Liu et al. (2023), firms with strong operating cash flows are less likely to face financial distress, as they can sustain operations without external financing. Inadequate cash flow management exacerbates financial difficulties, particularly during economic downturns (Geng et al., 2025). This study hypothesizes that strong operating cash flow reduces financial distress by ensuring sufficient liquidity for operational needs.

H3: Operating cash flow has a negative effect on financial distress.

Liquidity and Firm Size

Liquidity influences a company's ability to manage short-term obligations, potentially affecting its growth and size. According to Kasmir (2019), a higher current ratio signals a firm's capacity to meet short-term debts, enhancing its market reputation and attracting investors. Company size, measured by the natural logarithm of total assets as explained by Hartono (2017), reflects the scale and resource base of the company. Larger firms with high liquidity can leverage their financial stability to expand operations, as noted by Amanda and Tasman (2022). Research by Waqas and Md-Rus (2018) suggests that liquidity sends positive signals to capital markets, boosting investor confidence and enabling growth in firm size. Companies with ample liquidity are better positioned to invest in expansion, increasing their asset base and market presence (Fecht et al., 2024). However, Runis et al. (2021) find that liquidity may not significantly influence firm size when other factors, such as market conditions, dominate growth dynamics. According to Jia et al. (2024), larger firms with strong liquidity attract more investment, facilitating expansion. This study posits that liquidity positively impacts firm size by enabling firms to manage obligations and pursue growth opportunities effectively.

H4: Liquidity has a positive impact on firm size.

Leverage and Firm Size

Leverage, reflecting debt-financed operations, can constrain a company's growth potential. According to Latif et al. (2024), high leverage, measured by the Debt to Total Asset Ratio, limits a firm's ability to access new capital, hindering expansion. Company size, which is proxied by the natural logarithm of total assets according to Hartono (2017), shows the company's capacity to increase the scale of its operations. High leverage increases financial risk, reducing opportunities for growth, as noted by Asmarani and Purbawati (2020). Research by Fattouh et al. (2024) indicates that excessive debt burdens restrict firms' ability to invest in new projects, negatively affecting firm size. Conversely, firms with lower leverage can more easily expand due to greater financial flexibility (Xie et al., 2024). According to Bimantio and Nur (2023), high leverage in smaller firms particularly limits growth, as debt repayment pressures divert resources from expansion. However, some studies, like Glover (2024), suggest that strategic leverage use can support growth by optimizing tax benefits, creating a research gap. Firms with high leverage may also face higher borrowing costs, further limiting their ability to scale operations. This constraint can reduce investor confidence, impacting long-term growth prospects. This study hypothesizes that high leverage negatively impacts firm size by limiting access to capital and increasing financial constraints.

H5: Leverage has a negative impact on firm size.

Operating Cash Flow and Firm Size

Operating cash flow is a key indicator of a company's financial health, influencing its growth potential. According to Subramanyam (2017), strong operating cash flow enables firms to reinvest in operations, driving expansion and increasing firm size. Company size, measured as the natural logarithm of total assets according to Hartono (2017), reflects the

operational scale of a company. Research by Phan et al. (2022) suggests that robust operating cash flow supports firm growth by providing resources for investment in new projects. Similarly, Jia et al. (2024) note that firms with high cash flows can expand operations, increasing their asset base. However, Giarto and Fachrurrozie (2020) find that operating cash flow may not significantly influence firm size when external factors, such as market competition, dominate growth dynamics. According to Liu et al. (2023), firms with consistent cash flows are better positioned to scale operations, attracting investors and creditors. Strong cash flows also enhance a firm's ability to innovate, improving competitiveness and supporting long-term growth. This financial flexibility allows firms to pursue strategic opportunities, further contributing to size expansion. This study posits that strong operating cash flow positively impacts firm size by providing the financial resources needed for expansion and operational improvements.

H6: Operating cash flow has a positive impact on firm size.

Firm Size and Financial Distress

Firm size influences a company's resilience to financial distress, as larger firms often have greater resources to manage economic challenges. According to Hartono (2017), firm size, measured by the natural logarithm of total assets, reflects a company's ability to absorb financial shocks. Financial distress occurs when firms struggle to meet obligations, risking bankruptcy. Research by Taruvinga and Sakarombe (2024) indicates that larger firms are less prone to financial distress due to their access to diverse funding sources. Similarly, Dainelli et al. (2024) argue that larger firms maintain financial equilibrium more effectively, reducing default risk. However, Laurena and Ramantha (2022) find that firm size may not significantly mitigate financial distress in certain contexts, creating a research gap. According to Amanda and Tasman (2022), larger firms attract more investor confidence, lowering distress risk. Larger firms also benefit from economies of scale, which enhance operational efficiency and financial stability. This study hypothesizes that larger firm size negatively impacts financial distress by providing greater financial stability and resource access.

H7: Firm size has a negative impact on financial distress.

Firm Size as a Mediator

Firm size can moderate the relationships between liquidity, leverage, operating cash flow, and financial distress. According to Laurena and Ramantha (2022), larger firms with high liquidity are better equipped to avoid financial distress due to their ability to access capital markets. Waqas and Md-Rus (2018) note that liquidity's negative effect on financial distress is stronger in larger firms, which can leverage their asset base to manage obligations. For leverage, Ramadani and Ratmono (2023) suggest that firm size moderates the positive relationship between leverage and financial distress, as larger firms with lower debt ratios face less distress risk. According to Baek et al. (2024), larger firms with strong operating cash flows are less likely to experience financial distress, as their cash reserves support operational stability. However, Runis et al. (2021) find that firm size may not significantly moderate these relationships in some contexts, highlighting a research gap. According to Dewangga and Nugroho (2024), larger firms' profitability enhances their ability to manage cash flows, reducing distress risk. This study hypothesizes that firm size strengthens the negative effects of liquidity and operating cash flow, and mitigates the positive effect of leverage, on financial distress.

H8: Firm size moderates the impact of liquidity on financial distress.

H9: Firm size moderates the impact of leverage on financial distress.

H10: Firm size moderates the impact of operating cash flow on financial distress.

Research Framework

The research framework illustrates the relationships between liquidity, leverage, operating cash flow, firm size, and financial distress. Liquidity, leverage, and operating cash flow are hypothesized to directly influence financial distress, with firm size acting as a moderating variable. The framework posits that liquidity and operating cash flow negatively affect financial distress, while leverage has a positive effect. Additionally, liquidity and operating cash flow are expected to positively impact firm size, while leverage negatively affects it. Firm size is hypothesized to negatively influence financial distress and moderate the relationships between the independent variables and financial distress. This framework is visually represented in Figure 1, which outlines the hypothesized paths and interactions among variables.

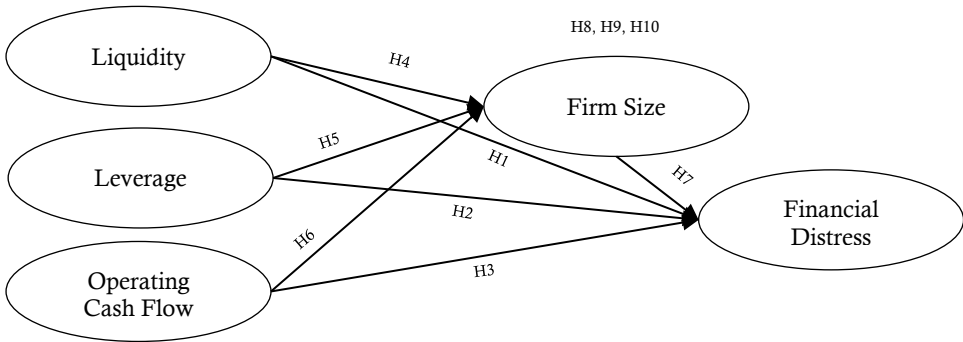


Figure 1. Research Framework

RESEARCH METHOD

This study employs a causal research design to explore the relationships between liquidity, leverage, operating cash flow, firm size, and financial distress in transportation companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023. The quantitative approach utilizes secondary data sourced from annual financial reports available on the IDX website and the official websites of the respective companies. The population comprises all transportation sector companies listed on the IDX during the study period. A purposive sampling technique was applied to select a sample that meets specific criteria, ensuring alignment with the research objectives. The sample includes transportation companies that have consistently submitted financial reports for the five-year period, resulting in 11 companies and a total of 55 observations, calculated as 11 companies multiplied by the five-year research duration.

The data analysis method leverages Structural Equation Modeling (SEM) through SmartPLS software, chosen for its robustness in handling complex models with multiple variables and smaller sample sizes. SEM facilitates simultaneous analysis of relationships between observed and latent variables, making it ideal for testing the hypothesized interactions in this study. The analysis begins with validating the measurement model to ensure the reliability and validity of constructs, using metrics such as Composite Reliability (CR), Average Variance Extracted (AVE), and individual item loadings. This step confirms that the constructs accurately represent the variables under study. Following this, the structural model is evaluated to assess the direct, indirect, and total effects among variables, providing insights into the causal relationships hypothesized.

To determine the significance of path coefficients, bootstrapping procedures are employed within SmartPLS, generating t-statistics and p-values to evaluate the strength and statistical significance of each relationship. Additionally, classical assumption tests, including multicollinearity, normality, and heteroscedasticity checks, are conducted to ensure the data adheres to SEM requirements. These tests safeguard the integrity of the analysis by confirming that the model is free from statistical biases that could skew results. By integrating these rigorous analytical steps, the study aims to provide a comprehensive understanding of how liquidity, leverage, and operating cash flow influence financial

distress, with firm size as a moderating variable, within the context of Indonesia's transportation sector.

RESULTS

The analysis of this study, conducted using Structural Equation Modeling (SEM) via SmartPLS, provides insights into the relationships between liquidity, leverage, operating cash flow, firm size, and financial distress in transportation companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023. The evaluation process begins with validating the measurement model to ensure the reliability and validity of the constructs, followed by an assessment of the structural model to test the hypothesized relationships. The results, derived from 55 observations of 11 transportation companies, offer a comprehensive understanding of how these financial variables interact. Bootstrapping procedures were employed to assess the significance of path coefficients, yielding t-statistics and p-values that determine the statistical significance of each hypothesis. Classical assumption tests, including multicollinearity, normality, and heteroscedasticity, were conducted to confirm the data's suitability for SEM analysis, ensuring robust and unbiased findings.

The measurement model validation focuses on key metrics such as Composite Reliability (CR), Average Variance Extracted (AVE), and individual item loadings. For all constructs—liquidity, leverage, operating cash flow, firm size, and financial distress—the CR value is 1.000, indicating perfect internal consistency. This high CR value suggests that the indicators within each construct reliably measure the intended variables. Similarly, the AVE for all constructs is 1.000, demonstrating that each construct captures all variance in its indicators without measurement error, confirming strong convergent validity. These metrics ensure that the constructs are well-defined and accurately represent the variables under study, providing a solid foundation for the structural model analysis.

Discriminant validity, assessed using the Fornell-Larcker criterion, verifies that the constructs are distinct from one another. This criterion compares the square root of each construct's AVE with its correlations to other constructs, ensuring that each construct is more strongly related to its own indicators than to others. The results confirm that all constructs meet this criterion, indicating clear differentiation among liquidity, leverage, operating cash flow, firm size, and financial distress. Figure 2 visually represents the measurement and structural models, illustrating the relationships and loadings of the constructs.

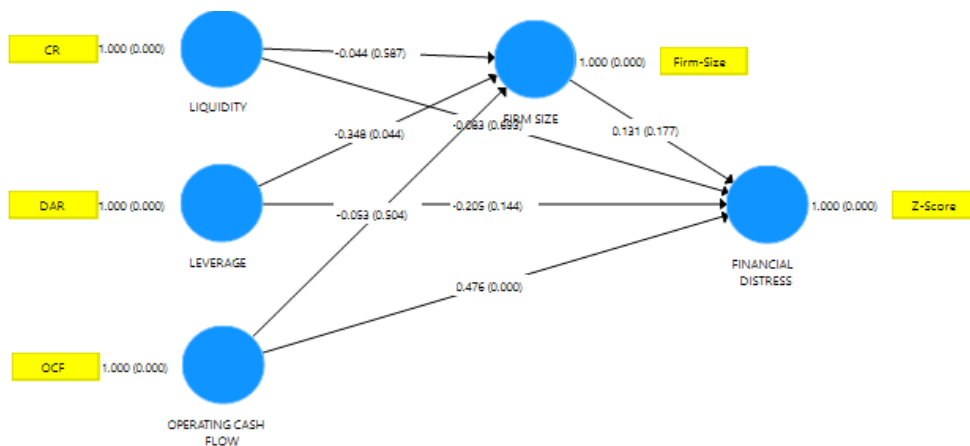


Figure 2. Outer Model and Inner Model SEM

Table 1. Result Output Bootstrapping SmartPLS (Direct Effect)

Hypothesis	Relationship	Expected Direction	Coefficient (β)	p-value
H1	Liquidity → Financial Distress	Negative	-0.044	0.693
H2	Leverage → Financial Distress	Positive	-0.205	0.144
H3	Operating Cash Flow → Financial Distress	Negative	0.476	0.000
H4	Liquidity → Firm Size	Positive	0.083	0.587
H5	Leverage → Firm Size	Negative	-0.349	0.044
H6	Operating Cash Flow → Firm Size	Positive	-0.053	0.504
H7	Financial distress → Firm Size	Negative	0.131	0.177

Table 2. Indirect Effect

Hypothesis	Relationship	p-value	Result
H8	Liquidity → Firm size → Financial Distress	0.693	Rejected
H9	Leverage → Firm size → Financial Distress	0.144	Rejected
H10	Operating Cash Flow → Firm size → Financial Distress	0.000	Rejected

Figure 2 shows that the structural model analysis conducted using SmartPLS tests the hypothesized relationship between liquidity, leverage, operating cash flow, company size, and financial distress in transportation companies listed on the Indonesia Stock Exchange (2019–2023). The results summarized in Tables 1 and 2 show that liquidity (H1, $p=0.693$) and leverage (H2, $p=0.144$) have no significant effect on financial distress, indicating that they do not directly reduce or worsen the risk of financial distress. Operating cash flow significantly reduces financial distress (H3, $p=0.000$), highlighting its important role in managing liabilities and reducing bankruptcy risk. Liquidity (H4, $p=0.587$) and operating cash flow (H6, $p=0.504$) do not significantly affect firm size, but leverage significantly limits it (H5, $p=0.044$), indicating that debt limits growth due to financial risk.

Firm size does not significantly influence financial distress (H7, $p=0.177$) nor moderate the relationships between liquidity (H8, $p=0.641$), leverage (H9, $p=0.348$), or operating cash flow (H10, $p=0.580$) and financial distress, suggesting consistent dynamics across firm sizes. These findings emphasize the importance of robust cash flow management for financial stability in the transportation sector, particularly during the Covid-19 period, while high leverage restricts growth. Other factors, such as sector-specific pressures, may overshadow liquidity and leverage effects on financial distress.

These findings provide valuable insights into the financial dynamics of transportation companies listed on the IDX. The significant role of operating cash flow in mitigating financial distress emphasizes the need for effective cash flow management strategies. The lack of significant effects for liquidity and leverage on financial distress may reflect the unique challenges faced by the transportation sector, such as regulatory restrictions and competition from online platforms, which could overshadow the impact of these variables. The absence of a moderating effect from firm size suggests that both large and small firms face similar financial distress dynamics in this context, potentially due to sector-specific economic conditions. Figure 1, Outer Model and Inner Model SEM complements these findings by visually depicting the relationships tested, reinforcing the robustness of the model and the clarity of the results.

DISCUSSION

The findings of this study provide critical insights into the financial dynamics of transportation companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023, particularly in the context of liquidity, leverage, operating cash flow, firm size, and financial distress. The analysis reveals that liquidity does not significantly influence financial distress, with a p -value of 0.693, suggesting that a company's ability to meet short-term obligations does not directly mitigate financial distress risks. According to Amanda and Tasman (2022), liquidity can guide management in taking corrective actions when financial distress signals emerge, but this study's results align more closely with Asmarani and Purbawati (2020), who found that liquidity has no significant effect on financial distress when considered alongside other factors. This lack of significance may

stem from the transportation sector's unique challenges, such as the Covid-19-induced mobility restrictions and competition from online platforms, which may overshadow liquidity's role in financial stability.

Similarly, leverage, with a p-value of 0.144, does not significantly increase financial distress, contrasting with expectations that higher debt levels exacerbate financial risk. According to Abdullah et al. (2023), leverage significantly contributes to financial distress in Indian steel firms, yet this study's findings align with Simorangkir and Mauli (2020), who observed a negative and significant effect of leverage on financial distress in certain contexts. This discrepancy may reflect the transportation sector's reliance on asset-heavy operations, where debt financing does not always translate into heightened distress, possibly due to strategic debt management or external support during economic downturns. In contrast, operating cash flow demonstrates a significant negative effect on financial distress, with a p-value of 0.000, indicating that robust cash flows are crucial for mitigating financial difficulties. According to Hu et al. (2024), strong operating cash flows reduce financial distress by ensuring liquidity for operational needs, a finding echoed by Ramadhani and Nisa (2019), who noted that firms with higher cash flows are better equipped to avoid bankruptcy risks. This result underscores the critical role of cash flow management in the transportation sector, particularly during periods of economic volatility like the Covid-19 pandemic.

Regarding firm size, the study finds that liquidity (p-value = 0.587) and operating cash flow (p-value = 0.504) do not significantly influence firm size, suggesting that these factors are not primary drivers of growth in transportation companies. According to Runis et al. (2021), liquidity's lack of impact on firm size aligns with contexts where market conditions dominate growth dynamics, while Giarto and Fachrurrozie (2020) note similar findings for operating cash flow, emphasizing the role of external factors like competition. However, leverage significantly negatively affects firm size (p-value = 0.044), supporting Asmarani and Purbawati (2020), who suggest that high debt levels constrain growth by diverting resources to debt repayment. Financial distress also shows no significant effect on firm size (p-value = 0.177), aligning with Dewi (2022) and Laurena and Ramantha (2022), who found that firm size is not substantially impacted by financial distress, possibly due to firms' ability to maintain scale through restructuring.

The absence of a moderating effect of firm size on the relationships between liquidity (p-value = 0.641), leverage (p-value = 0.348), and operating cash flow (p-value = 0.580) with financial distress suggests that these relationships are consistent across firm sizes. According to Runis et al. (2021), firm size does not significantly moderate liquidity's impact on financial distress, while Bimantio and Nur (2023) and Choi (2025) note similar findings for leverage and operating cash flow, respectively. This indicates that the transportation sector's financial distress dynamics are driven by factors beyond firm size, such as sector-specific economic pressures. These findings have significant implications for transportation companies. Managers should prioritize robust cash flow management to mitigate financial distress, particularly during economic crises, as it is a key determinant of financial stability. High leverage should be approached cautiously, as it constrains firm growth, suggesting a need for balanced financing strategies. Policymakers could support the sector by providing financial relief or incentives to enhance cash flow resilience, especially for firms navigating competitive pressures from online transportation platforms. Future research could explore additional variables, such as market competition or technological adoption, to further elucidate the drivers of financial distress and growth in this sector.

CONCLUSION

The findings of this study provide valuable insights into the financial dynamics of transportation companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023. Operating cash flow emerges as a critical factor, significantly reducing financial distress with a p-value of 0.000, highlighting its role in ensuring firms can meet obligations and maintain stability during economic challenges. In contrast, liquidity and leverage do

not significantly influence financial distress, with p-values of 0.693 and 0.144, respectively, suggesting that other factors, such as sector-specific pressures like competition from online transportation, may overshadow their impact. Leverage, however, significantly constrains firm size (p-value = 0.044), indicating that high debt levels limit growth opportunities. Firm size does not moderate the relationships between liquidity, leverage, or operating cash flow and financial distress, nor does it significantly affect financial distress directly, implying that these dynamics are consistent across firms of varying sizes in the transportation sector.

These results carry important implications for transportation companies, emphasizing the need for robust cash flow management to mitigate financial distress, particularly in volatile economic conditions like those during the Covid-19 pandemic. Managers should prioritize strategies that enhance operating cash flow, such as optimizing operational efficiency, while cautiously managing leverage to avoid growth constraints. The study's limitations include its focus on a single sector and a five-year period, which may not fully capture long-term trends or cross-industry variations. Additionally, the reliance on secondary data may overlook qualitative factors like management decisions or market competition. Future research could explore these qualitative aspects, incorporate additional variables such as technological adoption, or extend the analysis to other sectors to provide a broader understanding of financial distress dynamics and firm size influences.

REFERENCES

- [1] Abdullah, M., Gulzar, I., Chaudhary, A., Tabash, M. I., Rashid, U., Naaz, I., & Ali, A. (2023). Dynamics of speed of leverage adjustment and financial distress in the Indian steel industry. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(4), 100-122.
- [2] Ahemed, A. M., Iqbal, U., & Atif, M. M. (2025). Asymmetric cost behavior and financial distress. *Economics Letters*, 247(2), 112-121.
- [3] Amanda, Y., & Tasman, A. (2022). Pengaruh likuiditas, sales growth dan ukuran perusahaan terhadap financial distress. *Digital Bisnis: Jurnal Publikasi Ilmu Manajemen Dan E-Commerce*, 1(3), 70-80.
- [4] Asmarani, S. A., & Purbawati, D. (2020). Analisis pengaruh likuiditas, leverage dan profitabilitas terhadap financial distress (studi pada perusahaan manufaktur sektor industri barang konsumsi yang terdaftar di BEI pada periode tahun 2014-2018). *Jurnal Ilmu Administrasi Bisnis*, 9(3), 369-379.
- [5] Baek, C., Baek, S., & Glamboosky, M. (2024). Macroeconomic impact and stock returns' vulnerability by size, solvency, and financial distress. *Finance Research Letters*, 59(1), 104-118.
- [6] Bimantio, M. A., & Nur, D. I. (2023). Financial distress with firm size as a moderating variable in the construction sub sector on the Indonesian Stock Exchange. *Journal of Economics, Finance and Management Studies*, 06(11), 5689-5696.
- [7] Choi, J. (2025). Financial flexibility or financial constraints? Zero-leverage firms during the COVID-19 pandemic. *Research in International Business and Finance*, 74(1), 102-123.
- [8] Dainelli, F., Bet, G., & Fabrizi, E. (2024). The financial health of a company and the risk of its default: Back to the future. *International Review of Financial Analysis*, 95(1), 103-129.
- [9] De Silva, C., Del Gaudio, B. L., Gervasoni, A., & Lertora, M. (2025). Private equity and financial distress: A bibliometric literature review. *Research in International Business and Finance*, 74(1), 102-124.
- [10] Dewangga, R. W., & Nugroho, S. P. (2024). The effect of product knowledge and market orientation on business performance in MSMEs. *Jurnal Ilmiah Manajemen Kesatuan*, 12(1), 163-174.
- [11] Dewi, silvia; sofia prima. (2022). Pengaruh profitabilitas, leverage, ukuran perusahaan, dan likuiditas terhadap nilai perusahaan. 4(1), 310-317.
- [12] Fattouh, B., Pisicoli, B., & Scaramozzino, P. (2024). Debt and financial fragility: Italian non-financial companies after the pandemic. *Economic Modelling*, 131(12), 6610-6628.
- [13] Fecht, F., Reitz, S., & Weber, P. (2024). A dealer's funding liquidity risk and its money market trades in the 2007/08 crisis. *Journal of Financial Stability*, 75(1), 101-127.
- [14] Geng, H., Zhu, H., Lau, W. T., Nor, N. M., & Razak, N. H. A. (2025). How does investment efficiency affect financial distress risk? Evidence from China. *Journal of Behavioral and Experimental Finance*, 45(1), 101-124.
- [15] Giarto, R. V. D., & Fachrurrozie, F. (2020). The effect of leverage, sales growth, cash flow on financial distress with corporate governance as a moderating variable. *Accounting Analysis*

- Journal*, 9(1), 15–21.
- [16] Glover, K. (2024). A comment on the relationship between operating leverage and financial leverage. *Finance Research Letters*, 67(1), 105-122.
- [17] Gosain, N., Kashiramka, S., & Chaudhry, N. (2025). Signaling vs. agency theory: What drives dividends of promoter-owned firms during a crisis? *Research in International Business and Finance*, 73(1), 102-120.
- [18] Graña-Alvarez, R., Gomez-Conde, J., Lopez-Valeiras, E., & González-Loureiro, M. (2024). Management control systems, business financial literacy and financial leverage in business-incubated start-ups. *British Accounting Review*, 56(6), 566-585.
- [19] Hartono, J. (2017). *Teori portofolio dan analisis investasi*. Yogyakarta: BPFE.
- [20] Hery. (2019). *Manajemen Kinerja*. Jakarta: PT Grasindo.
- [21] Hu, W., Li, K., & Zhang, X. (2024). Financial constraints, cash flow timing patterns, and asset prices. *Journal of Financial Economics*, 157(1), 103-125.
- [22] Isdina, S. H., & Putri, W. W. R. (2021). Pengaruh laba dan arus kas terhadap kondisi financial distress. *Jurnal Ilmiah Akuntansi Kesatuan*, 9(1), 147–158.
- [23] Jia, H., Gao, N., Ahmad, F., Farooq, A., & Javed, A. (2024). Investment and financing maturity mismatch: Moderating role of financialization in regulatory context for A-share listed Chinese companies. *Heliyon*, 10(14), 4463-4488.
- [24] Kamaluddin, A., Ishak, N., & Mohammed, N. F. (2019). Financial distress prediction through cash flow ratios analysis. *International Journal of Financial Research*, 10(3), 63-76.
- [25] Kasmir. (2019). *Analisis Laporan Keuangan*. Jakarta: PT Raja Grafindo Persada.
- [26] Kurniadi, A. (2021). Analisis rasio keuangan untuk memprediksi financial distress perusahaan manufaktur di BEI. *Jurnal Ilmiah Manajemen Kesatuan*, 9(3), 495–508.
- [27] Latif, R., Usmany, P., & Sososutiksno, C. (2024). The effect of leverage and political connections on the performance of State-Owned Enterprises. *Jurnal Ilmiah Manajemen Kesatuan*, 12(5), 2073–2084.
- [28] Laurena, J., & Ramantha, I. W. (2022). Firm size moderates the effect of institutional ownership, and financial indicators on financial distress. *International Journal of Business Management and Economic Review*, 05(04), 118–130.
- [29] Liu, X., Zhang, Y., Tian, M., & Chao, Y. (2023). Financial distress and jump tail risk: Evidence from China's listed companies. *International Review of Economics & Finance*, 85(2), 316–336.
- [30] Melani, A. (2021). Pendapatan blue bird merosot 49,43 persen pada 2020. *Liputan6.com*. Retrieved, 31, maret 2021 from <https://www.liputan6.com/saham/read/4519767/pendapatan-blue-bird-merosot-4943-persen-pada-2020>
- [31] Phan, T. D., Hoang, T. T., & Tran, N. M. (2022). Cash flow and financial distress of private listed enterprises on the Vietnam stock market: A quantile regression approach. *Cogent Business and Management*, 9(1), 1–13.
- [32] Ramadani, A. W., & Ratmono, D. (2023). Financial distress prediction: the role of financial ratio and firm size. *Jurnal Riset Akuntansi Kontemporer*, 15(1), 19–26.
- [33] Ramadhani, A. L., & Nisa, K. (2019). Pengaruh operating capacity, sales growth dan arus kas operasi terhadap financial distress. *Jurnal Riset Keuangan Dan Akuntansi*, 5(1), 75–82.
- [34] Runis, A., Arifin, D. S., Masud, A., & Kalsum, U. (2021). The influence of liquidity, leverage, company size and profitability on financial distress. *International Journal of Business and Social Science Research*, 2(6), 11-17.
- [35] Simorangkir, C., & Mauli, R. T. (2020). Effect of profitability, leverage, liquidity, audit committee on financial distress. *Saudi Journal of Economics and Finance*, 4(8), 377–383.
- [36] Subhani, B. H., Zunhuan, S., & Khan, M. A. (2025). Finance for a Greener future: Evolving the financial sector for ESG and sustainable corporate debt management. *Borsa Istanbul Review*, 25(2), 337-349.
- [37] Subramanyam. (2017). *Analisis laporan keuangan*. Jakarta: Salemba Empat.
- [38] Sugiana, N. A., & Hidayat, W. W. (2023). The effect of operating cash flow, operating capacity and sales growth on financial distress. *Indonesian Journal Of Business Analytics*, 3(3), 785-802.
- [39] Taruvinga, R., & Sakarombe, U. (2024). Financial literacy, informality, and small business operational performance in Zimbabwe. *Jurnal Ekonomi Dan Bisnis Airlangga*, 34(1), 165–182.
- [40] Waqas, H., & Md-Rus, R. (2018). Predicting financial distress: Importance of accounting and firm-specific market variables for Pakistan's listed firms. *Cogent Economics & Finance*, 6(1), 154-173.
- [41] Xie, L., Liu, Y., & Jiang, T. (2024). Executives with business education background and cost of debt financing: Evidence from China. *International Review of Economics & Finance*, 90(2), 283–296.

