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The Effects of Capital Structure, Liquidity, and Operating Efficiency on Financial Performance: A Quantitative Study of the Transportation and Logistics Sector on the Indonesia Stock Exchange from 2022 to 2024

Yolanda Wulandari*, Moh. Hudi Setyobakti, Via Lailatur Rizki

Department of Management, Faculty of Economics and Business, Institut Teknologi dan Bisnis Widya Gama Lumajang

Corresponding Author: Yolanda Wulandari (yolandaw442@gmail.com)

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ABSTRACT

This study aims to analyze the effects of capital structure, liquidity, and operating efficiency on the financial performance of transportation and logistics companies listed on the Indonesia Stock Exchange during 2022–2024. Examining the factors influencing financial performance is important because performance fluctuated throughout this period. The study uses a descriptive quantitative method with a population of 39 companies. Purposive sampling was employed, resulting in 21 companies meeting the selection criteria. The results indicate that capital structure positively affects financial performance, liquidity negatively affects financial performance, and operating efficiency positively affects financial performance.

Keywords: Capital Structure; Liquidity; Operating Efficiency; Financial Performance

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INTRODUCTION

Companies are an important part of a continually evolving and dynamic business environment. The growing number of new companies intensifies competition. Increasing competitive pressure encourages companies to improve service quality, operating efficiency, and financial performance to maintain their market presence. Alongside the importance of sound corporate management in addressing competition, Indonesian regulations govern corporate structure and governance to ensure that business operations follow the principles of transparency, accountability, and responsibility. Law Number 8 of 1995 concerning the Capital Market provides the legal foundation for capital market operations, including companies' obligation to submit financial statements transparently and on time.

Transportation and logistics companies contribute substantially to the national economy. The sector's performance has fluctuated in recent years. Historical performance data for the transportation sector index (IDXTRANS) during 2018–2024 show more pronounced movements than the Jakarta Composite Index (JCI) and LQ45. In 2020, the transportation index declined by

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17.1%, in line with the global economic slowdown. However, in 2021, the sector recorded a strong recovery, growing by 67.8%. During the study period of 2022–2024, transportation sector performance fluctuated again. Growth of 3.9% was recorded in 2022, followed by a decline of -3.6% in 2023 and a further sharp decline of -18.8% in 2024. These conditions indicate that the transportation and logistics sector tends to exhibit relatively high volatility compared with the overall market index. Meanwhile, JCI and LQ45 displayed more stable movements, although they also faced pressure in certain years. These fluctuations affect the financial performance of transportation and logistics companies, as the effectiveness of capital structure, liquidity, and operating efficiency management directly influences their ability to maintain financial performance. High profits tend to be generated by companies with strong performance and stable financial conditions, contributing to corporate development (Zidan et al., 2025).



Figure 1. Historical Performance
Source: IDXTRANS

One internal factor affecting financial performance is capital structure, which describes the proportion of debt to equity. In this context, debt includes both long-term liabilities and short-term debt (Andriyani & Nurasik, 2024). Capital structure is a crucial element of a company's financial condition because its financing composition affects overall financial performance (Vereira et al., 2024). It reflects corporate decisions concerning financing sources, whether debt or equity. In financial management, companies need to consider the proportion of debt to equity carefully to achieve an optimal and sustainable capital structure. This balance is particularly important in asset-intensive industries such as transportation and logistics, which require substantial operating funds (Zidan et al., 2025). Appropriate financing decisions create an optimal capital structure, minimizing capital costs and financial risk. Conversely, inappropriate financing decisions can increase interest expenses, reduce liquidity, and worsen financial performance. Liquidity is a key factor in maintaining corporate financial performance. Adequate liquidity enables companies to address operational uncertainty and short-term financial pressure. Liquidity reflects a company's ability to meet urgent financial obligations or those approaching maturity (Jariah, 2016). It is therefore closely related to the capacity to fulfill short-term financial responsibilities. Low liquidity may impede daily operations (Zidan et al., 2025). Liquidity also concerns the ability to secure and manage funds quickly and efficiently in response to economic uncertainty and future investment needs. Companies with greater liquidity tend to be better able to overcome crises and sustain their businesses. In transportation and logistics, which are sensitive to changes in operating costs and market demand, liquidity provides a strategic advantage.

Operating efficiency is a company's ability to maximize output or revenue using available inputs (Bewamati & Oktaviani, 2024). Revenue-generating capacity is a principal indicator of operational success (Simamora et al., 2025). It reflects the ability to optimize asset and resource management and generate revenue. Operating efficiency, measured through the operating expenses to operating income ratio (BOPO), is commonly used to assess the efficiency and effectiveness of corporate operations. A lower BOPO ratio indicates improved efficiency, showing that management has optimized operating expense control relative to revenue earned (Harmono, 2020). The relationship between capital structure and financial performance has been widely studied. Andriyani and Nurasik (2024) state that an optimal capital structure can influence financial performance because companies can maximize debt utilization effectively and efficiently. Vereira et al. (2024) find that capital structure has a negative and insignificant effect on financial performance, indicating that excessive debt utilization can increase financial risk. However, Jimea et al. (2023) report different findings, suggesting that capital structure has no significant effect on financial performance because companies can manage their debt burden effectively. These differences indicate inconsistent empirical findings concerning the effect of capital structure on corporate financial performance.

Research on liquidity has also produced varied results. Septiani and Dinda (2024) find that liquidity positively affects financial performance because companies' current assets exceed their current liabilities. This indicates high liquidity and the ability to repay short-term debt easily. Conversely, Rahmawati et al. (2026) report that liquidity has no significant effect on financial performance. This finding suggests that although maintaining adequate liquidity can reduce the risk of bankruptcy and ensure smooth operations, a focus on liquidity generally supports short-term stability and does not necessarily improve asset efficiency or capital utilization. These differences indicate that the effect of liquidity on financial performance requires further investigation. Research on operating efficiency generally suggests that it plays an important role in improving financial performance. Simamora et al. (2025) state that operating efficiency affects financial performance. Muamilah et al. (2020) find a positive and significant effect on financial performance. However, Musthafa et al. (2023) report no significant effect, particularly in sectors with high operating costs, such as transportation and logistics. This suggests that industry characteristics can influence the relationship between operating efficiency and financial performance.

Previous research thus reveals differing empirical findings concerning the effects of capital structure, liquidity, and operating efficiency on financial performance. Several studies have focused on manufacturing and banking, while studies examining the individual effects of these three variables in transportation and logistics companies listed on the Indonesia Stock Exchange remain relatively limited. Research covering recent observation periods, particularly the post-pandemic period of 2022–2024, is also scarce. Accordingly, this study addresses the research gap by reexamining the effects of capital structure, liquidity, and operating efficiency on financial performance among transportation and logistics companies listed on the Indonesia Stock Exchange (IDX) during 2022–2024. It is expected to provide recent empirical evidence and enrich the finance literature, particularly concerning financial performance in the transportation and logistics sector.

Agency Theory

According to Ghozali (2020), agency theory was proposed by Jensen and Meckling (1976) to describe the agency relationship between company owners as principals and management as agents. This relationship arises when owners delegate authority for managing the company to management. In practice, it often creates conflicts of interest because principals seek to increase firm value, while agents may prioritize personal interests.

Signaling Theory

Signaling theory, proposed by Michael Spence in 1973, describes behavior in the labor market. Signals represent interactions between parties with unequal information (Ghozali, 2020). In this context, the signaler takes particular actions to influence the perceptions and decisions of the signal

receiver. Over time, signaling theory has been widely applied in auditing, accounting, and financial management.

Capital Structure
According to Riyanto (2013), capital structure is part of permanent financing that describes a company's long-term financial balance. The comparison between long-term debt and capital reflects financial balance through the ratio of these components. Fahmi (2020) states that capital structure describes a company's financial composition.

Liquidity
According to Kasmir (2019), liquidity describes a company's ability to pay obligations when they fall due, indicating whether it can repay short-term debt. Fahmi (2020) states that liquidity, also referred to as short-term liquidity, describes a company's capacity to settle short-term obligations smoothly and without difficulty. Liquidity ratios are used to assess a company's ability to repay short-term debt.

Operating Efficiency
According to Hartono (2009), corporate or banking performance can be reflected in operating efficiency. One indicator of operational success is a company's ability to generate revenue. However, operating expenses also affect this achievement because the level of output can significantly influence net income.

Financial Performance
According to Fahmi (2020), financial performance is the outcome of an analysis based on financial reporting requirements referring to Indonesian Financial Accounting Standards (SAK) or Generally Accepted Accounting Principles (GAAP). Financial performance also represents a company's operational activities during a particular period and reflects the results of controlling its resources.

The Effect of Capital Structure on Financial Performance
A company's capital structure combines debt and equity as financing sources. These funds support operations and investment activities. This composition reflects the proportion of debt and equity underlying financing that supports business development and continuity. Appropriate debt utilization can provide a positive signal because it demonstrates confidence in future profitability. An optimal capital structure can also improve the efficiency of fund utilization and thereby enhance financial performance.
H1: Capital structure affects financial performance.

The Effect of Liquidity on Financial Performance
Liquidity reflects a company's ability to finance and meet short-term obligations when they fall due (Kasmir, 2019). The current ratio measures the extent to which a company can settle obligations using available current assets. High liquidity allows companies to optimize assets to maximize profits and demonstrates their ability to realize assets, provided that debt does not exceed total assets. Good liquidity also reflects a low default risk, increasing investor confidence and influencing financial performance. Thus, higher liquidity leads to better financial performance.
H2: Liquidity affects financial performance.

The Effect of Operating Efficiency on Financial Performance
Operating efficiency is a company's ability to maximize output or revenue using available inputs (Bewamati & Oktaviani, 2024). The operating expenses to operating income ratio (BOPO) measures efficiency and the ability to conduct operations. A lower BOPO ratio indicates more efficient operating expenditure, potentially increasing profits. This increases investor confidence and improves financial performance. Thus, higher operating efficiency leads to better financial performance.
H3: Operating efficiency affects financial performance.

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METHODS

This study uses a descriptive quantitative approach to describe research phenomena or variables through hypothesis testing using quantitative data. The population comprises transportation and logistics companies listed on the Indonesia Stock Exchange during 2022–2024. Purposive sampling was employed by selecting samples according to predetermined criteria consistent with the research objectives.

Table 1. Research Instruments

No.	Variable	Indicator	Instrument		Scale
1	Capital Structure	Debt-to-Equity (DER)	Total Debt / Total Equity	X100%	Ratio
2	Liquidity	Current Ratio (CR)	Current Assets / Current Liabilities	X100%	Ratio
3	Operating Efficiency	Operating Expenses to Operating Income Ratio (BOPO)	Total Operating Expenses / Total Operating Income	X100%	Ratio
4	Financial Performance	Return on Assets (ROA)	Net Income / Total Assets	X100%	Ratio

RESULTS AND DISCUSSION

In quantitative research, the t-test is an important component of hypothesis testing because it identifies which variables individually have a significant effect on the dependent variable under investigation.

Table 2. Individual Significance Test Results: t-test

Variable	Calculated t	Significance	Description
Capital Structure	3.463	.001	Positive Effect
Liquidity	-2.137	.037	Negative Effect
Operating Efficiency	14.461	.000	Positive Effect

The Effect of Capital Structure on Financial Performance

The study finds that capital structure positively affects financial performance, measured using ROA, among transportation and logistics companies during 2022–2024. This indicates that an increase in capital structure, measured using DER, can improve financial performance. Empirically, the result shows that debt utilization in capital structure contributes positively to companies' ability to generate profits. In the capital-intensive transportation and logistics sector, funding requirements for investments in assets such as transport fleets, warehouses, and logistics infrastructure are substantial. Optimal debt utilization can therefore help expand operating capacity, improve efficiency, and increase revenue, ultimately raising ROA. The findings imply that companies need to manage capital structure optimally by considering the debt-to-equity ratio. Companies must determine an appropriate leverage level to improve financial performance without creating excessive financial risk. They also need to ensure that borrowed funds are used for productive activities generating returns above the cost of debt. Based on agency theory, proposed by Jensen and Meckling (1976) and discussed in Ghozali (2020), debt utilization can be an effective control strategy for minimizing differences in interests between management and shareholders. Interest payment obligations encourage management to exercise greater discipline and efficiency in managing corporate resources. This encourages management to improve operational performance to meet these obligations, thereby increasing profitability.

The findings also align with signaling theory, proposed by Spence (1973) and discussed in Ghozali (2020). A company's decision to use debt can provide a positive signal to investors. An increase in DER within optimal limits can indicate confidence in future business prospects and the ability to manage financial obligations. This positive signal can strengthen investor confidence, improve the company's market position, and ultimately contribute to better financial performance. These findings align with Zidan et al. (2025), who report a positive effect of capital structure and emphasize the importance of balancing debt and equity for optimal capital structure management. Heavy reliance on debt may increase financial risk, including high interest expenses and potential financial distress. Companies therefore need to maintain appropriate capital structure proportions so that leverage benefits exceed the associated risks. Andriyani and Nurasik (2024) and Muamilah et al. (2020) also report a positive effect of capital structure on financial performance. Thus, capital structure has a positive and significant effect on financial performance in the transportation and logistics sector listed on the IDX during 2022–2024. H1 is therefore accepted.

The Effect of Liquidity on Financial Performance

The study finds that liquidity has a negative and significant effect on financial performance, measured using ROA, in the transportation and logistics sector during 2022–2024. This indicates that higher liquidity is accompanied by lower financial performance. Empirically, a high CR does not always represent a favorable condition. Excessive liquidity may create idle assets, namely current assets that are not productively used to generate profits. In this context, companies tend to hold too much cash or other current assets, reducing opportunities to allocate funds to more productive investments with higher returns. The findings imply that companies need to maintain an optimal liquidity balance that is neither too low nor excessive. Companies should allocate current assets productively, for example through investments offering higher returns, without neglecting the ability to repay short-term debt. Appropriate liquidity management can improve the efficiency of fund utilization and financial performance.

Based on agency theory, proposed by Jensen and Meckling (1976) and discussed in Ghozali (2020), high liquidity can trigger agency conflicts because management has greater discretion in managing current assets. This may result in inefficient or suboptimal resource utilization and lower financial performance. In other words, excess liquidity may reflect insufficient managerial discipline in allocating corporate funds effectively. The findings also align with signaling theory, proposed by Spence (1973) and discussed in Ghozali (2020). Excessive liquidity can send a negative signal to investors because it may indicate that companies cannot use their assets optimally to generate profits. Investors tend to prefer companies that manage assets efficiently rather than merely maintaining high liquidity. These findings align with Lesmana et al. (2022), who report that liquidity measured using the current ratio (CR) has a significant negative effect. In transportation and logistics, where efficient asset management is essential, excessive liquidity can inhibit corporate growth. Funds that could support operational expansion, such as fleet additions or infrastructure improvements, remain tied up in less productive current assets. The findings also align with Lestari (2021) and Fajaryani and Suryani (2028). It can therefore be concluded that liquidity has a negative and significant effect on financial performance in the transportation and logistics sector during 2022–2024. H3 is therefore accepted.

The Effect of Operating Efficiency on Financial Performance

The study finds that operating efficiency has a positive and significant effect on financial performance, measured using ROA, among transportation and logistics companies during 2022–2024. This indicates that an increase in operating efficiency is accompanied by better financial performance. Operating efficiency describes a company's ability to control costs and maximize resource utilization to generate revenue. When operating costs are reduced without compromising output quality, profits increase, directly improving financial performance. The findings indicate that companies with high operating efficiency tend to control costs more effectively and maximize profits. Operating efficiency is therefore an important element in achieving optimal and sustainable financial performance. The findings imply that companies need to pay greater attention to

operational management, particularly cost control and productivity improvement. Companies should periodically evaluate their operations to identify potential waste and improve resource efficiency. They should also use technology and more modern management systems to support more effective operational processes.

Based on agency theory, proposed by Jensen and Meckling (1976) and discussed in Ghozali (2020), the findings indicate that management, as the agent, has properly managed resources entrusted by the owners, or principals. High operating efficiency reflects sound cost control and limited opportunistic behavior, such as waste or unproductive resource utilization. Operating efficiency can therefore reduce agency conflicts because management acts in line with the owners' interests in maximizing corporate profits. The findings also align with signaling theory, proposed by Spence (1973) and discussed in Ghozali (2020). High operating efficiency provides a positive signal to investors and external parties concerning a company's condition and prospects. Companies demonstrating efficient operational performance are perceived as having competent management and the ability to generate stable profits. This positive signal can increase investor confidence, ultimately enhancing firm value and investment attractiveness.

These findings align with Muamilah et al. (2020), who report a positive and significant effect of operating efficiency. Companies need to continue improving operating efficiency as a principal strategy for enhancing financial performance. Simamora et al. (2025), Oktiandra and Rilo (2025), Nurmalasari and Carmelita (2025), and Kurnia et al. (2025) also report findings consistent with this study. It can therefore be concluded that operating efficiency has a positive and significant effect on financial performance in the transportation and logistics sector during 2022–2024. H3 is therefore accepted.

CONCLUSION

Capital structure, measured using the debt-to-equity ratio (DER), has a positive and significant effect on financial performance in the transportation and logistics sector during 2022–2024. This indicates that debt utilization within optimal limits can improve financial performance through effective leverage. Liquidity, measured using the current ratio (CR), has a negative and significant effect on financial performance in the transportation and logistics sector during 2022–2024. This indicates that excessive liquidity can prevent current assets from being used optimally, reducing the ability to generate profits. Operating efficiency, measured using the operating expenses to operating income ratio (BOPO), positively affects financial performance in the transportation and logistics sector during 2022–2024. The findings indicate that higher operating efficiency is associated with better financial performance. Companies that manage operating costs effectively generate more optimal profits.

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