How to Cite:
Wibawa, I. G. A. N. U. D., Widanaputra, A. A. G. P., Dewi, L. G. K., & Hasibuan, H. T. (2026). The effect of liquidity on tax avoidance: The moderating role of leverage. *Tennessee Research International of Social Sciences*, *8*(1), 311–320. Retrieved from https://triss.org/index.php/journal/article/view/155

The effect of liquidity on tax avoidance: The moderating role of leverage

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***Abstract*---**This study aims to analyze the effect of liquidity on tax avoidance and examine the role of leverage in moderating the relationship between liquidity and tax avoidance in Non-Cyclical Consumer Goods Sector companies listed on the Indonesia Stock Exchange during the 2021–2025 period. This study employs a quantitative approach using secondary data obtained from annual reports and financial statements. The sample was selected using a purposive sampling method, resulting in 64 companies with a total of 320 observations. Tax avoidance was measured using the Cash Effective Tax Rate (CETR), liquidity was measured using the Current Ratio (CR), and leverage was measured using the Debt-to-Equity Ratio (DER). Data were analyzed using Moderated Regression Analysis (MRA) with SPSS version 26.0. The results indicate that liquidity has a negative and significant effect on CETR, suggesting a higher tendency for tax avoidance. Furthermore, leverage is proven to moderate and strengthen the negative effect of liquidity on CETR. These findings demonstrate that a company's liquidity condition and leverage level play an important role in explaining its tendency to engage in tax avoidance practices. The implications of this study suggest that liquidity and leverage should be managed optimally to maintain a balance between financial strategies and tax compliance. In addition, the combination of liquidity and leverage may serve as an important

Tennessee Research International of Social Sciences © 2026.
ISSN 2766-7464 (Online)
Publisher: Smoky Mountain Publishing
Manuscript submitted: 27 April 2026, Manuscript revised: 18 May 2026, Accepted for publication: 09 June 2026

consideration for investors, creditors, and tax authorities in identifying corporate tax avoidance risks.

***Keywords*---**Liquidity, Leverage, Tax Avoidance, CETR, MRA

Introduction

Tax revenue remains the primary source of government income in Indonesia; however, its collection continues to face several challenges. Low taxpayer compliance, corporate tax avoidance practices, weak tax supervision, and the gap between tax potential and actual revenue indicate that tax collection has not yet reached its optimal capacity (Isra et al., 2023). This condition is reflected in Indonesia's tax ratio, which declined from 10.08% in 2024 to 9.31% in 2025 despite continued economic growth, suggesting that improvements in national economic performance have not been accompanied by proportional increases in tax revenue collection (Statistik, 2026).

One factor that may contribute to this phenomenon is tax avoidance. Tax avoidance refers to efforts undertaken by companies to minimize tax obligations through legal tax planning strategies that exploit loopholes in tax regulations without directly violating the law (Putra & Rahayu, 2022). From a corporate perspective, taxes are often viewed as costs that reduce after-tax profits, encouraging management to engage in tax planning activities aimed at minimizing tax burdens (Prasetya & Muid, 2022). The implementation of a self-assessment tax system in Indonesia further provides opportunities for firms to independently calculate and report their tax obligations, potentially increasing the likelihood of tax avoidance practices (Widodo, 2023).

Following the COVID-19 pandemic, many companies experienced financial pressure and sought efficiency measures to maintain profitability, including tax-related strategies. Tax avoidance may be conducted through various mechanisms, such as financing structure arrangements, exploitation of regulatory loopholes, and related-party transactions. These practices can reduce taxable income and ultimately lower corporate tax payments, potentially affecting government tax revenue.

The relationship between corporate financial conditions and tax avoidance can be explained by Agency Theory and Positive Accounting Theory. Agency Theory suggests that conflicts of interest between shareholders and managers may encourage opportunistic managerial behavior, including tax avoidance, particularly when information asymmetry limits effective monitoring (Apriliyana & Suryarini, 2018). Similarly, Positive Accounting Theory argues that managers tend to select accounting and financial policies that maximize their economic interests, including strategies designed to reduce tax expenses.

Among the financial factors associated with tax avoidance, liquidity has received considerable attention. Liquidity reflects a firm's ability to meet its short-term obligations using current assets (Khasanah & Afiqoh, 2022). Companies with lower liquidity levels often face cash constraints and financial pressure, which may encourage management to minimize tax payments in order to preserve cash flows. Conversely, firms with higher liquidity generally possess greater financial flexibility and may have less incentive to engage in aggressive tax avoidance practices (Mukti, 2021).

Another important factor is leverage, which reflects the extent to which a company relies on debt financing relative to its assets (Sinaga et al., 2023). High leverage increases financial obligations, including interest and principal payments, thereby intensifying pressure on corporate cash flows and liquidity positions (Cahyani et al., 2024). Under such circumstances, leverage may strengthen the influence of liquidity on tax avoidance, as firms experiencing both low liquidity and high debt burdens may have stronger incentives to reduce tax payments through avoidance strategies.

Previous studies investigating the relationship between liquidity and tax avoidance have produced inconsistent findings. Several studies reported a positive effect of liquidity on tax avoidance (Rahayu et al., 2022; Sari Aritonang et al., 2024), while Mappadang (2020) found that lower liquidity was associated with lower levels of tax avoidance. In contrast, Khasanah and Afiqoh (2022) documented a negative relationship, indicating that firms with higher liquidity tend to engage less in tax avoidance activities. These inconsistent findings suggest that the relationship between liquidity and tax avoidance remains inconclusive and warrants further investigation.

This study addresses this research gap by incorporating leverage as a moderating variable to examine whether debt levels strengthen or weaken the relationship between liquidity and tax avoidance. The inclusion of leverage is expected to provide a deeper understanding of the conditions under which liquidity influences corporate tax avoidance behavior.

Furthermore, empirical studies examining liquidity and tax avoidance with leverage as a moderating variable remain limited, particularly within Indonesian non-primary consumer goods companies listed on the Indonesia Stock Exchange. This sector was selected due to its diverse operational characteristics, sufficient number of listed firms, and varying financing structures that may influence tax avoidance behavior. The study covers the period 2021–2025, representing the post-pandemic recovery phase characterized by changes in liquidity conditions, capital structures, and managerial financial strategies. Therefore, this study contributes to the literature by providing empirical evidence on the moderating role of leverage in the relationship between liquidity and tax avoidance in the post-pandemic business environment.

Literature Review and Hypothesis Development

Liquidity reflects a firm's ability to meet its short-term obligations through available current assets (Sugiharti, 2026). According to Agency Theory, managers possess discretion in making financial decisions, including tax-related strategies, particularly when firms face financial pressures that may encourage opportunistic behavior (Apriliyana & Suryarini, 2018). Furthermore, Positive Accounting Theory suggests that managers tend to select accounting and financial policies that

maximize economic benefits and preserve corporate resources. Firms experiencing low liquidity often face cash constraints and may seek to reduce cash outflows through tax avoidance practices to maintain operational stability (Edwards et al., 2016b; Bauer et al., 2018). Prior studies have produced mixed findings regarding the relationship between liquidity and tax avoidance. Benkraiem et al. (2025) and Syahputri (2025) reported that financially constrained firms are more likely to engage in tax avoidance to preserve internal liquidity, while studies on stock liquidity indicate that higher liquidity reduces incentives for aggressive tax planning. In the Indonesian context, Devi et al. (2016) found that liquidity is associated with tax avoidance, whereas Gulthom (2021) reported no significant effect. Conversely, Angella et al. (2025) documented a positive relationship, suggesting that firms with strong liquidity may still pursue tax avoidance as an efficiency strategy. Despite these inconsistent findings, theoretical arguments suggest that firms with higher liquidity experience lower financial pressure and therefore have less incentive to engage in tax avoidance. Accordingly, the following hypothesis is proposed:
H1: Liquidity negatively affects tax avoidance.

Leverage represents the extent to which a company relies on debt financing and reflects the magnitude of financial obligations that must be fulfilled through interest and principal payments (Nazeer et al., 2025). Agency Theory explains that managers may adopt financial strategies aimed at preserving cash flows when facing substantial debt commitments, while Positive Accounting Theory, particularly the debt covenant hypothesis, suggests that firms with higher leverage have stronger incentives to manage financial outcomes in order to satisfy creditor expectations (Kaya, 2017). Consequently, companies characterized by low liquidity and high leverage may experience greater financial pressure, encouraging management to minimize cash outflows through tax avoidance strategies (Nutfi Rizki Hertina, 2017). Previous empirical evidence supports this argument. Edwards et al. (2016) found that financially constrained firms generate greater cash tax savings through tax planning activities, while Elbannan and Farooq (2020) demonstrated that limited access to external financing increases firms' propensity to engage in tax avoidance. In Indonesia, Febrilyantri (2022) reported that liquidity and leverage do not significantly affect tax avoidance, whereas Wulandari and Ernadi (2025) found significant effects of both variables and highlighted the importance of moderating factors in explaining tax avoidance behavior. These findings indicate that leverage may alter the strength of the relationship between liquidity and tax avoidance. Specifically, firms with lower liquidity and higher leverage are expected to face stronger incentives to reduce tax burdens in order to preserve cash availability. Therefore, the following hypothesis is proposed:
H2: Leverage strengthens the negative effect of liquidity on tax avoidance.

Methods

This study employed a quantitative research approach using secondary data obtained from the annual reports and financial statements of non-primary consumer goods companies listed on the Indonesia Stock Exchange (IDX) during the period 2021–2025. The population consisted of all companies classified within the non-primary consumer goods sector. The sample was selected using purposive sampling based on the following criteria: (1) companies consistently listed on the IDX during the observation period; (2) companies publishing complete annual financial reports for 2021–2025; (3) companies reporting positive pre-tax income; and (4) companies providing sufficient information to calculate all research variables. The unit of analysis was firm-year observations.

The dependent variable in this study was tax avoidance, measured using the Effective Tax Rate (ETR), calculated as total income tax expense divided by pre-tax income. Liquidity, as the independent variable, was measured using the Current Ratio (CR), calculated by dividing current assets by current liabilities. Leverage was measured using the Debt-to-Asset Ratio (DAR), calculated as total liabilities divided by total assets. To examine the moderating role of leverage, this study employed Moderated Regression Analysis (MRA). The regression model included an interaction term between liquidity and leverage to determine whether leverage strengthened or weakened the relationship between liquidity and tax avoidance Data were analyzed using descriptive statistics, classical assumption tests, multiple linear regression, and Moderated Regression Analysis (MRA) with the assistance of SPSS version 26. Hypothesis testing was conducted at a 5% significance level.

Result and Discussion

Classical Assumption Tests

The classical assumption tests indicate that the regression model satisfies the required assumptions. The normality test shows an Asymp. Sig. value of 0.259 (> 0.05), indicating normally distributed residuals. The Run Test result produces an Asymp. Sig. value of 0.937 (> 0.05), confirming the absence of autocorrelation. Furthermore, all variables exhibit tolerance values above 0.10 and VIF values below 10, indicating no multicollinearity problem. The heteroscedasticity test also reveals significance values above 0.05 for all variables, suggesting that the model is free from heteroscedasticity. Therefore, the regression model is considered appropriate for hypothesis testing.

Table 1. Summary of Classical Assumption Tests

Test	Result	Conclusion
Normality (K-S)	Asymp. Sig. = 0.259	Normal Distribution
Autocorrelation (Run Test)	Asymp. Sig. = 0.937	No Autocorrelation
Multicollinearity	Tolerance > 0.10; VIF < 10	No Multicollinearity
Heteroscedasticity	Sig. > 0.05	No Heteroscedasticity

Primary Data, 2026

Moderated Regression Analysis

Table 2. Moderated Regression Results

Variable	Coefficient (B)	t-value	Sig.
Constant	-1.059	-8.182	0.000
Liquidity (CR)	-0.438	-5.762	0.000
Leverage (DER)	0.286	4.923	0.000

CR × DER	-0.191	-2.017	0.045

Primary Data, 2026

The regression results indicate that liquidity has a negative and significant effect on tax avoidance ($\beta = -0.438$; $p < 0.001$). In addition, leverage has a positive and significant effect ($\beta = 0.286$; $p < 0.001$). The interaction term between liquidity and leverage is also negative and significant ($\beta = -0.191$; $p = 0.045$), indicating that leverage moderates the relationship between liquidity and tax avoidance.

Model Fit

Table 3. Model Fit Results

Indicator	**Value**
F-statistic	40.510
Significance	0.000
Adjusted R^2	0.271

Primary Data, 2026

The F-test result of 40.510 with a significance level of 0.000 confirms that the model is statistically significant. Furthermore, the adjusted R^2 value of 0.271 indicates that liquidity, leverage, and their interaction explain 27.1% of the variation in tax avoidance, while the remaining 72.9% is explained by other factors not included in the model.

The Effect of Liquidity on Tax Avoidance

The results support H1, indicating that liquidity negatively affects tax avoidance ($\beta = -0.438$; $p < 0.001$). This finding suggests that firms with stronger liquidity positions tend to exhibit lower CETR values, indicating a higher tendency toward tax avoidance. Companies with adequate liquidity possess greater financial flexibility and resources to engage in tax planning activities aimed at minimizing tax burdens. These findings support Agency Theory, which argues that managers utilize their discretion in making financial decisions, including tax-related strategies, to maximize corporate benefits. The results are also consistent with Positive Accounting Theory, which suggests that managers tend to choose policies that improve economic outcomes for the firm.

Empirically, this finding is consistent with the studies of Devi et al. (2016), Benkraiem et al. (2025), and Syahputri (2025), which report that corporate financial conditions influence tax avoidance behavior. However, the results contradict Gulthom (2021), who found no significant relationship, and Angella et al. (2025), who reported a positive relationship between liquidity and tax avoidance. These differences may be attributed to variations in industry characteristics, observation periods, and measurement approaches.

The Moderating Role of Leverage

The results support H2, indicating that leverage strengthens the negative effect of liquidity on tax avoidance ($\beta = -0.191$; $p = 0.045$). The significant coefficients of both leverage and the interaction term indicate a quasi-moderation effect, meaning that leverage functions both as an independent variable and as a moderator. This finding implies that the relationship between liquidity and tax avoidance becomes stronger when firms have higher levels of debt.

Companies with high leverage face greater financial obligations, including interest and principal repayments, which increase pressure on cash flow management. Under such conditions, managers may be more motivated to reduce tax payments in order to preserve internal funds and maintain financial stability. This finding supports Agency Theory, which explains that managers may adopt opportunistic strategies under financial pressure, and Positive Accounting Theory, particularly the debt covenant hypothesis, which suggests that highly leveraged firms tend to select financial policies that help maintain compliance with creditor expectations.

The findings are consistent with Edwards et al. (2016), Elbannan and Farooq (2020), Hidayanto et al. (2021), and Wulandari and Ernadi (2025), who found that financial constraints and debt pressure encourage firms to engage in tax-saving strategies. However, the results differ from those of Febrilyantri (2022), Khasanah and Afiqoh (2022), and Putra et al. (2025), who reported insignificant moderating effects of leverage. The discrepancy may arise from differences in industrial sectors, economic conditions, and observation periods. The post-pandemic period examined in this study likely intensified financial pressures, making the moderating role of leverage more evident.

Conclusion

This study examines the effect of liquidity on tax avoidance and the moderating role of leverage among non-primary consumer goods companies listed on the Indonesia Stock Exchange during 2021–2025. The results reveal that liquidity has a significant negative effect on tax avoidance, indicating that firms with higher liquidity levels tend to engage more actively in tax planning strategies. Furthermore, leverage significantly moderates the relationship between liquidity and tax avoidance by strengthening the negative effect of liquidity. This finding suggests that companies with high liquidity and high leverage possess stronger incentives to manage tax burdens to maintain cash flow stability and meet financial obligations. Overall, the study confirms the importance of internal financial conditions, particularly liquidity and capital structure, in explaining corporate tax avoidance behavior.

Managerial Implications

The findings imply that company management should pay greater attention to the interaction between liquidity management and financing decisions when formulating tax strategies. While tax planning may contribute to financial efficiency, excessive reliance on tax avoidance practices could increase regulatory and reputational risks. Therefore, firms are encouraged to maintain an optimal balance between liquidity, leverage, and tax compliance to ensure sustainable financial performance. For regulators, the results highlight the need for stronger monitoring of highly leveraged firms, as debt pressure may intensify incentives for aggressive tax planning and reduce the effectiveness of tax revenue collection.

Limitations and Future Research

This study is limited to non-primary consumer goods companies listed on the Indonesia Stock Exchange during the 2021–2025 period. Therefore, the findings may not be generalized to other sectors with different operational and financing characteristics. Future studies are encouraged to incorporate additional determinants of tax avoidance, such as profitability, corporate governance, firm size, and institutional ownership, as well as extend the observation period and industry coverage to provide more comprehensive evidence regarding corporate tax avoidance behavior.

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