



## Profitability analysis of cigarette sub-sector companies with capital structure as an intervening variable

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Article Info	Abstract
<p><b>Keywords:</b> Capital Structure, Cigarette Sub-Sector Companies, Liquidity, Profitability</p>	<p><i>This study investigates the influence of liquidity and activity on profitability, with capital structure acting as an intervening variable. The research aims to explain how internal financial factors contribute to corporate performance within the cigarette sub-sector in Indonesia. Using a quantitative approach, the study analyzes panel data from five cigarette companies listed on the Indonesia Stock Exchange for the 2018–2023 period. The analysis was conducted using the Panel Data Regression Model with the aid of EViews 12 software. The findings reveal that liquidity and capital structure negatively affect profitability, while activity has a positive and significant impact. Moreover, both liquidity and activity show a negative influence on capital structure, which in turn mediates their relationship with profitability. These results highlight the importance of maintaining an optimal balance between liquidity management, operational efficiency, and debt composition to enhance firm profitability. The study contributes to the understanding of how internal financial variables interact to shape corporate financial performance. Practically, it provides insights for financial managers and investors to design strategies that improve profitability through efficient asset utilization and prudent capital structure decisions.</i></p>

### 1. INTRODUCTION

Indonesia remains one of the world's largest tobacco producers, making the cigarette sub-sector an important contributor to national revenue through excise taxes. In 2022, the average per capita cigarette expenditure reached IDR 82,183 per month (Rizaty, 2023), indicating the persistence of cigarette consumption despite ongoing health campaigns. However, this industry now faces substantial challenges, including continuous government excise tax increases, stricter regulations, and shifting consumer preferences toward alternative products such as e-cigarettes (Fauzan, 2022). These external pressures have led to declining profitability in leading companies such as PT Gudang Garam Tbk (GGRM) and PT HM Sampoerna Tbk (HMSP), whose net profits fell sharply following consecutive excise tax hikes (Sidik, 2021; Safitri, 2024).

Amid these external pressures, the financial resilience of cigarette companies depends heavily on the management of internal financial variables particularly liquidity, activity, and capital structure. According to financial management theory, the firm's performance can be



optimized through efficient resource utilization and balanced capital decisions (Saraswati et al., 2020; Jufrizen et al., 2019). Liquidity, measured by the *Current Ratio (CR)*, reflects a company's short-term solvency (Karimah & Mahroji, 2023), while activity, proxied by *Total Asset Turnover (TATO)*, indicates the efficiency of asset utilization in generating sales. Both factors are critical in sustaining operational performance under restrictive market conditions.

Moreover, capital structure measured by the *Debt to Equity Ratio (DER)* serves as a key determinant of profitability, as it reflects a firm's capacity to balance debt and equity to achieve an optimal financial position (Irawan & Kusuma, 2019; Agustina & Sudiyatno, 2024). Prior studies have shown inconsistent findings regarding the effects of liquidity and activity on profitability, as well as the mediating role of capital structure in this relationship. This inconsistency creates a research gap that warrants further empirical examination, especially in the context of Indonesia's cigarette sub-sector, which faces both fiscal and market challenges.

Therefore, this study aims to examine and analyze the effects of liquidity and activity on profitability, with capital structure as an intervening variable, among cigarette sub sector companies listed on the Indonesia Stock Exchange during the 2018–2023 period.

## 2. LITERATURE REVIEW

### Theoretical Foundation

This study is grounded in two key theoretical perspectives: Agency Theory (Jensen & Meckling, 1976) and Signaling Theory (Spence, 1973). According to Agency Theory, conflicts arise between principals (shareholders) and agents (management) due to information asymmetry, where management holds superior knowledge about company operations. This imbalance can lead to inefficient decisions and performance issues if financial resources such as liquidity, asset utilization, and capital are not managed effectively (Dewi et al., 2021).

Meanwhile, Signaling Theory posits that management conveys information to external parties through financial indicators that reflect company performance (Brigham & Houston, 2019). High liquidity, efficient activity, and optimal capital structure serve as positive signals to investors regarding the firm's profitability and financial stability. These two theories collectively provide the conceptual foundation linking the study's variables: liquidity, activity, capital structure, and profitability.

### Liquidity and Profitability

Liquidity reflects a firm's ability to meet short-term obligations using its current assets (Kurbani et al., 2019). Firms with higher liquidity generally demonstrate stronger financial health and reduced risk of default, which can enhance investor confidence and support stable profitability. However, excessive liquidity may also indicate underutilized assets, reducing potential returns (Purwaningsih & Safitri, 2022). Prior studies (Siregar, 2016; Karimah & Mahroji, 2023) found mixed results regarding the relationship between liquidity and profitability some showing positive effects, while others reveal negative or insignificant links. Based on these findings, liquidity is expected to influence profitability directly.

H<sub>1</sub>: Liquidity has a positive effect on profitability

### **Activity and Profitability**

The activity ratio measures how efficiently a company utilizes its assets to generate sales (Prabowo, 2023). According to the Resource Based View (RBV), firms that effectively manage their internal resources such as assets and operations can achieve superior performance and profitability. A higher *Total Asset Turnover (TATO)* indicates more efficient resource utilization, which leads to greater revenue generation (Agustina & Sudiyatno, 2024). Empirical studies have consistently shown that efficient asset turnover contributes positively to profitability by maximizing returns on existing resources.

H<sub>2</sub>: Activity has a positive effect on profitability

### **Capital Structure and Profitability**

Capital structure, defined as the composition of debt and equity used to finance a firm's operations, plays a vital role in determining financial performance (Fathoni & Syarifudin, 2021). Drawing on Trade-Off Theory, firms aim to balance the benefits of debt (such as tax shields) against the costs of potential financial distress. An optimal debt to equity ratio can improve profitability by leveraging external funds effectively (Irawan & Kusuma, 2019). However, excessive reliance on debt increases interest obligations, which may reduce net profits (Christina et al., 2019). Previous studies (Agustina & Sudiyatno, 2024) have found a negative relationship between capital structure and profitability when leverage surpasses the optimal level.

H<sub>3</sub>: Capital structure has a negative effect on profitability

### **Liquidity, Capital Structure, and Profitability**

Agency Theory suggests that firms with high liquidity tend to minimize external financing to maintain managerial control and reduce monitoring costs (Jensen & Meckling, 1976). Consequently, higher liquidity may lead to lower debt usage, which in turn influences profitability. Empirical studies (Dewi et al., 2021; Jufrizen et al., 2019) support this view, indicating that liquidity negatively affects capital structure and indirectly impacts profitability through reduced leverage.

H<sub>4</sub>: Liquidity indirectly affects profitability through capital structure

### **Activity, Capital Structure, and Profitability**

Firms with high asset turnover often rely less on debt, as internal cash flows are sufficient to finance operations. According to Signaling Theory, such firms signal efficiency and stability to investors, reducing the perceived need for external financing (Spence, 1973). Consequently, higher activity ratios are expected to correlate with lower leverage and improved profitability. Prior evidence (Prabowo, 2023; Agustina & Sudiyatno, 2024) supports that activity ratios influence capital structure decisions and, through them, profitability outcomes.

H<sub>5</sub>: Activity indirectly affects profitability through capital structure

### Mediating Role of Capital Structure

Capital structure serves as an intermediary variable linking liquidity and activity to profitability. Firms that efficiently manage liquidity and asset turnover can optimize debt usage, maintaining financial flexibility while minimizing costs of capital. This mediating role aligns with the Pecking Order Theory, which posits that firms prefer internal financing over external debt to sustain profitability (Myers & Majluf, 1984). Therefore, the mediating mechanism of capital structure is expected to strengthen the combined effect of liquidity and activity on profitability.

H6: Capital structure mediates the effects of liquidity and activity on profitability

### Conceptual Framework

The conceptual framework in Figure 1 illustrates the relationship between the study variables. Liquidity and activity are proposed to influence profitability both directly and indirectly through capital structure as an intervening variable.

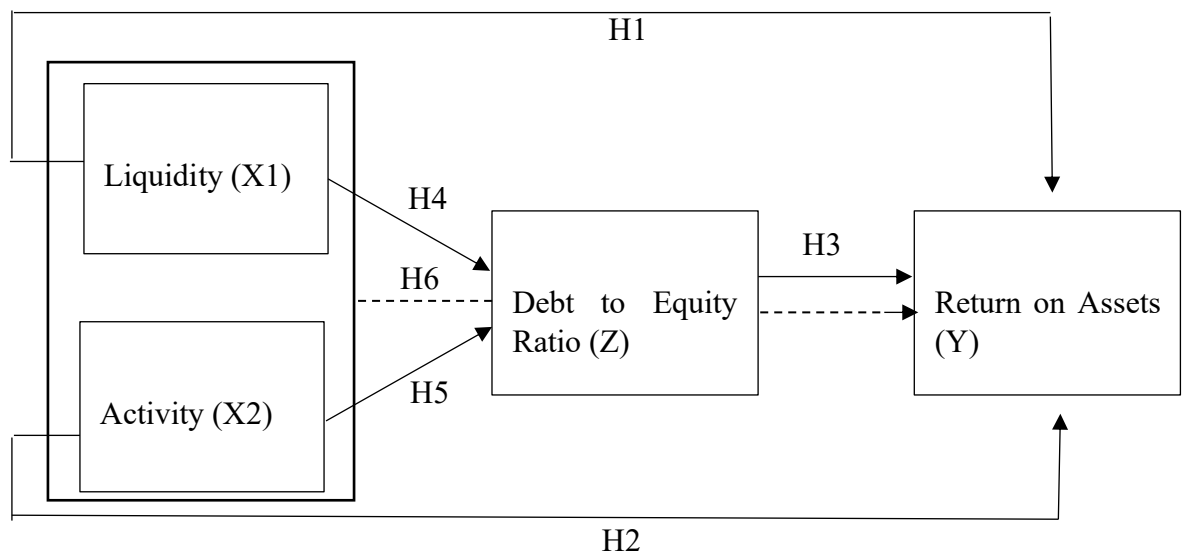


Figure 1. Conceptual Framework

### 3. METHOD

This study adopts a quantitative research approach aimed at examining the relationships between liquidity, activity, capital structure, and profitability among cigarette sub-sector companies in Indonesia. Quantitative methods were chosen to allow objective measurement and statistical testing of the causal relationships between variables.

#### Data and Period Selection

The study utilizes secondary data obtained from the annual financial reports of cigarette sub-sector companies listed on the Indonesia Stock Exchange (IDX) during the 2018–2023 period. The selection of this period is based on two main considerations. First, it captures the post-tax reform era and industrial regulation adjustments that began in

2018, which significantly influenced financial performance and capital structures in the tobacco industry. Second, it includes the COVID-19 pandemic period (2020–2022), providing a comprehensive overview of how financial indicators behaved under both normal and crisis economic conditions. Therefore, the chosen period enables a balanced assessment of financial performance under varying macroeconomic contexts.

### Population and Sampling

The study's population comprises five cigarette sub-sector companies officially listed on the IDX. A census (full sampling) technique was applied, meaning that all members of the population were included as research samples to ensure complete representation of the sub-sector.

### Data Collection Technique

Data were collected through library research and documentary review, involving systematic examination of company annual reports, financial statements, and official IDX publications. These data sources were complemented by relevant literature, including prior empirical studies and journal articles that provided theoretical grounding and context for variable relationships.

### Data Analysis Technique

Data were analyzed using the panel data regression model, which combines cross-sectional and time-series data to observe variations across companies and over time. The EViews 12 software was employed to process the data, test hypotheses, and evaluate the mediating role of capital structure. This model was chosen because it effectively captures firm-specific heterogeneity and temporal effects, thereby enhancing the robustness of the findings.

## 4. RESULT AND DISCUSSION

### Descriptive Statistical Analysis

Table 1 presents the descriptive statistics of all variables used in this study. The results show substantial variation in financial performance among cigarette sub-sector companies in Indonesia during 2018–2023.

**Table 1. Results of Descriptive Statistical Analysis**

	CR	TATO	DER	ROA
Mean	230.9633	1.255333	42.47500	22.16200
Median	206.0000	1.340000	43.97500	11.40000
Maximum	602.4000	2.290000	94.49000	118.3200
Minimum	26.60000	0.370000	-21.40000	-1.560000
Std. Dev.	133.9254	0.576570	28.80806	29.82351

Source: Data processed using Eviews 12

Companies with high liquidity ratios, such as PT Wismilak Inti Makmur Tbk (CR = 602.40), exhibit strong short-term solvency, whereas firms like PT Indonesian Tobacco Tbk (CR = 26.60) face greater liquidity constraints. Similarly, profitability (ROA) shows a wide gap from -1.56% to 118.32% indicating disparities in operational efficiency and financial management. These variations reflect differing strategic choices in asset management, production scale, and cost control across the industry.

This dispersion underscores the heterogeneity of financial strategies within the cigarette sub-sector. Firms with higher turnover and efficient capital use tend to achieve superior performance, while those burdened by excessive liquidity or leverage experience reduced profitability.

### Panel Data Regression Model

#### Chow Test

Stage 1, test Variable X against Variable Z. The probability value of the Chi-square Cross section in this study is  $0.0000 < 0.05$ . So  $H_0$  is rejected and  $H_1$  is accepted, so the best model used in the study between the Common Effect Model and the Fixed Effect Model is the Fixed Effect Model.

**Table 2. Chow Test (Stage 1)**

Effects Test	Statistic	d.f.	Prob.
Cross-section F	48.192382	(4,23)	0.0000
Cross-section Chi-square	67.161499	4	0.0000

Source: Data processed using Eviews 12

Stage 2, test Variables X and Z against Variable Y. The Chi-square Cross section probability value in this study is  $0.0074 < 0.05$ . Therefore,  $H_0$  is rejected and  $H_1$  is accepted, so the best model used in this study between the Common Effect Model and the Fixed Effect Model is the Fixed Effect Model.

**Table 3. Chow Test (Stage 2)**

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.261219	(4,22)	0.0304
Cross-section Chi-square	13.967609	4	0.0074

Source: Data processed using Eviews 12

#### Hausman Test

Stage 1, test Variable X against Variable Z. The probability value of the Random Cross section in this study is  $0.2257 > 0.05$ . Then  $H_0$  is accepted and  $H_1$  is rejected, so the best model used in the study between the Fixed Effect Model and the Random Effect Model is the Random Effect Model.

**Table 4. Hausman Test (Stage 1)**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.977190	2	0.2257

Source: Data processed using Eviews 12

Stage 2, test Variables X and Z against Variable Y. The probability value of the Random Cross section in this study is  $0.3463 > 0.05$ . Therefore,  $H_0$  is accepted and  $H_1$  is rejected, so the best model used in this study between the Fixed Effect Model and the Random Effect Model is the Random Effect Model.

**Table 5. Hausman Test (Stage 2)**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.309957	3	0.3463

Source: Data processed using Eviews 12

### Lagrange Multiplier (LM) Test

Stage 1, test Variable X against Variable Z. It is concluded from the table that the Cross section probability value in this study is  $0.0000 < 0.05$ . Therefore,  $H_0$  is rejected so that the best model used in this study between the Common Effect Model and the Random Effect Model is the Random Effect Model

**Table 6. Lagrange Multiplier Test (LM (Stage 1))**

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	40.60554 (0.0000)	3.315793 (0.0686)	43.92133 (0.0000)

Source: Data processed using Eviews 12

Stage 2, test Variables X and Z against Variable Y. It is concluded from the table that the Cross section probability value in this study is  $0.4293 > 0.05$ . Then  $H_0$  is accepted so that the best model used in the study between the Common Effect Model and the Random Effect Model is the Common Effect Model.

**Table 7. Lagrange Multiplier Test (LM (Stage 2))**

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.624701 (0.4293)	0.036717 (0.8480)	0.661417 (0.4161)

Source: Data processed using Eviews 12

## Hypothesis Testing

### Partial Test (t-Test)

The results of the t-test in stage 1, the test of Variable X against Variable Z, the random effect model shows several results, liquidity (CR) has a coefficient of -0.133417 and a significance of  $0.0000 < 0.05$ . So  $H_0$  is rejected and  $H_1$  is accepted, this shows that Liquidity has a significant negative effect on the Capital Structure variable. Activity (TATO) has a coefficient of -21.10004 and a significance of  $0.0155 < 0.05$ . So  $H_0$  is rejected and  $H_1$  is accepted, this shows that Activity has a significant negative effect on the Capital Structure variable.

**Table 8. Partial Test (t-Test) of Random Effect Model**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	99.77706	20.19025	4.941842	0.0000
CR	-0.133417	0.022827	-5.844601	0.0000
TATO	-21.10004	8.161920	-2.585181	0.0155

Source: Data processed using Eviews 12

The results of the t-test in stage 2, Testing Variables X and Z against Variable Y, the common effect model shows several results, liquidity (CR) has a coefficient of -0.118020 and a significance of  $0.0000 < 0.05$ . So  $H_0$  is rejected and  $H_1$  is accepted, this shows that Liquidity has a significant negative effect on the Profitability variable. Activity (TATO) has a coefficient of 22.48795 and a significance of  $0.0003 < 0.05$ . So  $H_0$  is rejected and  $H_1$  is accepted, this shows that Activity has a significant positive effect on the Profitability variable. Capital Structure (DER) has a coefficient of -1.017752 and a significance of  $0.0000 < 0.05$ . So  $H_0$  is rejected and  $H_1$  is accepted, this shows that Capital Structure has a significant negative effect on the Profitability variable.

**Table 9. Partial Test (t-Test) of the (Common Effect Model)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	64.41938	8.282955	7.777343	0.0000
CR	-0.118020	0.024148	-4.887328	0.0000
TATO	22.48795	5.382342	4.178098	0.0003
DER	-1.017752	0.104216	-9.765784	0.0000

Source: Data processed using Eviews 12

### Simultaneous F Test and Coefficient of Determination Test

Stage 1, test Variable X against Variable Z, Random Effect Model. The table explains the results of the F Test in stage 1 with a Prob. (F-statistic) value of  $0.000017 < 0.05$ , then  $H_0$  is rejected and  $H_1$  is accepted, these results indicate that there is a simultaneous influence of Liquidity and Activity variables on the Capital Structure variable. Based on the table, the determination coefficient value used is Adjusted R-squared of 0.523336. This shows that



the independent variables, namely Liquidity and Activity, explain 52.33% of the Capital Structure variable, while the remaining 47.67% is explained by other variables not used in this research model.

**Table 10. Simultaneous F-Test and Coefficient of Determination Test (Random Effect Model)**

R-squared	0.556209	Mean dependent var	4.701899
Adjusted R-squared	0.523336	S.D. dependent var	13.96198
S.E. of regression	9.639471	Sum squared resid	2508.824
F-statistic	16.91974	Durbin-Watson stat	1.318240
Prob(F-statistic)	0.000017		

Source: Data processed using Eviews 12

Stage 2, test Variables X and Z against Variable Y, Common Effect Model. The table explains the results of the simultaneous F Test in stage 2 with a Prob. (F-statistic) value of  $0.000000 < 0.05$ , then  $H_0$  is rejected and  $H_1$  is accepted, these results indicate that there is an influence of the variables Liquidity, Activity, and Capital Structure together on the Profitability variable. Based on the table shows the value of the determination coefficient used is Adjusted R-squared of 0.763730. This shows that variables X and Z, namely Liquidity, Activity, and Capital Structure, explain 76.37% of the Profitability variable, while the remaining 23.63% is explained by other variables not used in this research model.

**Table 11. Simultaneous F-Test and Coefficient of Determination Test (Common Effect Model)**

R-squared	0.788172	Mean dependent var	22.16200
Adjusted R-squared	0.763730	S.D. dependent var	29.82351
S.E. of regression	14.49649	Akaike info criterion	8.309256
Sum squared resid	5463.856	Schwarz criterion	8.496083
Log likelihood	-120.6388	Hannan-Quinn criter.	8.369024
F-statistic	32.24700	Durbin-Watson stat	0.920117
Prob(F-statistic)	0.000000		

Source: Data processed using Eviews 12

### Sobel Test

The Sobel test is used to test the strength of the indirect influence of variable X (independent) on variable Y (dependent) through variable Z (intervening). If the results show a t-count value  $> t$ -table, then it can be concluded that there is a mediation effect.

**Table 12. Sobel Test (Stage 1)**

	CR-Z-Y	Test Statistic	P-value
a	-0.1334	5.0151	5.3e-7
b	-1.0178		
Sa	0.0228		
Sb	0.1042		

Source: Data processed using Eviews 12

Based on the Sobel test, the liquidity variable on profitability through capital structure as an intervening variable obtained a p-value of  $0.0000 < 0.05$  with a Sobel Test Statistic value of  $5.0151 > 1.7056$ , so the liquidity variable has a significant effect on profitability through capital structure as an intervening variable.

**Table 13. Sobel Test (Stage 2)**

	TATO-Z-Y	Test Statistic	P-value
a	-21.1000	2.4991	0.0125
b	-1.0178		
Sa	8.1619		
Sb	0.1042		

Source: Data processed using Eviews 12

Based on the Sobel test, the activity variable on profitability through capital structure as an intervening variable obtained a p-value of  $0.0125 < 0.05$  with a Sobel Test Statistic value of  $2.4991 > 1.7056$ , so the activity variable has a significant effect on profitability through capital structure as an intervening variable.

### **The Effect of Liquidity on Profitability**

Based on the results of the panel data regression, it was found that liquidity, as measured by the Current Ratio, has a negative effect on profitability (ROA), with a probability value of  $0.0000 < 0.05$ , a coefficient of  $-0.118020$ , and a t-statistic value of  $-4.887328$ . These findings indicate that changes in liquidity have a significant impact on changes in profitability. This result is consistent with the study by [Sukmayanti and Triaryati \(2019\)](#), which states that liquidity, proxied by the Current Ratio (CR), negatively affects profitability, proxied by Return on Assets (ROA). Companies that allocate large portions of their assets may maintain safe liquidity levels; however, this tends to reduce the potential for high returns, ultimately impacting the firm's profitability. High liquidity does not always provide benefits, as it can lead to idle funds that could otherwise be invested in profitable projects.

Liquidity, measured by the Current Ratio (CR), has a significant negative effect on profitability ( $p < 0.05$ ). This means that an increase in liquidity tends to reduce profitability. The finding aligns with studies by [Sukmayanti & Triaryati \(2019\)](#) and [Dwiyanthi & Sudiartha \(2017\)](#), which also observed that high liquidity reflects conservative financial management and idle funds that could otherwise be invested in profitable ventures.

From an economic perspective, this indicates that excessive liquidity, while improving short-term solvency, limits the company's ability to exploit return-generating opportunities. In the cigarette industry a highly regulated sector with steady demand but limited growth firms that maintain excessive cash reserves may experience reduced profit margins. From the lens of *agency theory* (Jensen & Meckling, 1976), high liquidity may also indicate managerial risk aversion or inefficient cash utilization, resulting in lower returns for shareholders. Managers may prefer retaining cash as a safety buffer, but this strategy can dilute profitability in the long run.

### **The Effect of Activity on Profitability**

Based on the results of panel data regression, Activity as measured by Total Asset Turnover (TATO) has a positive effect on Profitability (ROA), with a probability value of  $0.0003 < 0.05$ , a coefficient of 22.48795, and a t-statistic of 5.382342. These findings indicate that changes in Activity significantly influence changes in Profitability. This result is consistent with the studies by Prabowo (2023), Safitri et al. (2024), and Nurjanah & Hakim (2018), which suggest that Activity positively affects Profitability. Higher activity levels are associated with increased profitability, while lower activity levels are linked to decreased profitability. Faster asset turnover reflects better and more efficient company operations, which in turn leads to higher profits and improved profitability.

Theoretically, this supports *signaling theory* (Spence, 1973), where high asset turnover acts as a positive signal to investors regarding managerial efficiency and market competitiveness. In this context, tobacco firms that efficiently utilize assets to generate sales can sustain high returns even amid excise tax increases and advertising restrictions. From a managerial standpoint, improving asset utilization for example, through inventory optimization and production efficiency directly strengthens profitability by reducing operational costs and enhancing revenue generation capacity.

### **The Effect of Capital Structure on Profitability**

Based on the panel data regression results, Capital Structure as measured by the Debt to Equity Ratio (DER) has a negative effect on Profitability (ROA), with a probability value of  $0.0000 < 0.05$ , a coefficient of -1.017752, and a t-statistic of -9.765784. Capital Structure, proxied by the Debt to Equity Ratio (DER), has a significant negative effect on profitability ( $p < 0.05$ ). This indicates that firms relying heavily on debt tend to experience lower profitability due to higher interest expenses and financial risk.

The result corroborates the studies by Lorenza et al. (2020) and Syah et al. (2023), which revealed that excessive leverage erodes returns on assets. From an *agency theory* perspective, excessive borrowing can create conflicts between shareholders and creditors, leading to suboptimal investment decisions and higher monitoring costs. In the case of Indonesia's tobacco industry, where regulation and excise burdens are increasing, debt-financed expansion may reduce financial flexibility and compress margins. Therefore, maintaining an optimal balance between debt and equity becomes crucial to sustain long-term profitability.

### **The Effect of Liquidity on Capital Structure**

Based on the panel data regression results, Liquidity proxied by the Current Ratio has a negative effect on Capital Structure, which is proxied by the Debt to Equity Ratio as an intervening variable. This is supported by a probability value of  $0.0000 < 0.05$ , a coefficient of  $-0.133417$ , and a t-statistic of  $-5.844601$ . The coefficient indicates that each increase in liquidity contributes to a 13.34% reduction in the company's capital structure. Liquidity shows a negative relationship with capital structure. Firms with higher liquidity tend to rely less on external financing, consistent with studies by [Setyani et al. \(2022\)](#), [Sadewo et al. \(2022\)](#), and [Hidayat et al. \(2021\)](#).

Economically, this relationship reflects a conservative financial strategy companies with abundant liquid assets prefer to self-finance rather than assume debt obligations. For cigarette firms, which face declining production quotas and restricted market expansion, minimizing debt exposure helps preserve financial stability and investor confidence. This finding reinforces *pecking order theory*, where firms prioritize internal funds over external financing to avoid information asymmetry and financing costs. Thus, higher liquidity contributes to lower leverage levels, ensuring sustainable capital management.

### **The Effect of Activity on Capital Structure**

Based on the panel data regression results, Activity proxied by Total Asset Turnover (TATO) has a negative effect on Capital Structure, which is proxied by the Debt to Equity Ratio (DER) as an intervening variable. This is evidenced by a probability value of  $0.0155 < 0.05$ , a coefficient of  $-21.10004$ , and a t-statistic of  $-2.585181$ . The coefficient indicates that each increase in activity contributes to a 21.10% reduction in the company's capital structure. Activity (TATO) also has a significant negative effect on capital structure. Companies with higher asset turnover ratios demonstrate greater operational efficiency, generating sufficient internal cash flows that reduce dependence on external debt. This result is consistent with [Susanto \(2019\)](#) and indicates that high operational efficiency can strengthen financial independence.

From a theoretical standpoint, *signaling theory* suggests that firms demonstrating strong operational performance signal lower risk to investors and creditors. In this case, a high TATO sends a signal of internal funding capability, reducing the need for debt financing. For managers, this implies that focusing on asset productivity not only boosts profitability but also helps maintain a healthier capital structure, reducing interest obligations and financial vulnerability.

### **Capital Structure as an Intervening Variable between Liquidity and Activity on Profitability**

This study found that capital structure is capable of intervening in the relationship between liquidity and activity on profitability within cigarette sub-sector manufacturing companies during the period of 2018–2023. The mediation test (Sobel) confirms that capital structure significantly mediates the relationships between (1) liquidity and profitability, and (2) activity and profitability. The mediation effect indicates that the way companies manage

their debt ratios influences how liquidity and operational efficiency translate into profitability.

In practical terms, this means that even though liquidity and activity directly affect profits, their ultimate impact is moderated by how well debt is managed. Firms with optimal leverage can convert operational strength into sustained profitability, while those with excessive or insufficient leverage experience diminishing returns. This finding extends *agency theory* and *signaling theory* integration by showing that financial structure plays a strategic role in aligning managerial decisions with shareholder interests. For industry practitioners, maintaining moderate leverage while optimizing liquidity and asset turnover can enhance profitability resilience, particularly under fiscal and regulatory pressures. From a managerial implication standpoint, executives should prioritize balanced financial management neither overly conservative (excessive liquidity) nor excessively leveraged to ensure efficient capital allocation and risk-adjusted profitability growth.

## 5. CONCLUSION

This study examined the effects of liquidity and activity on profitability, with capital structure as an intervening variable, in cigarette sub-sector manufacturing companies listed on the Indonesia Stock Exchange from 2018 to 2023. The findings reveal that liquidity, measured by the Current Ratio (CR), has a significant negative effect on profitability, while activity, proxied by Total Asset Turnover (TATO), has a significant positive effect on profitability. Capital structure, measured by the Debt to Equity Ratio (DER), also shows a significant negative relationship with profitability. Furthermore, capital structure mediates the relationship between liquidity, activity, and profitability, indicating that financing composition plays a critical role in transforming operational efficiency into firm performance.

Theoretically, the results strengthen the pecking order theory and trade-off theory by confirming that higher liquidity and leverage levels may reduce profitability when not aligned with optimal financing decisions. Conversely, higher asset turnover reflects efficient utilization of resources, enhancing profitability through improved operational productivity. Practically, the findings suggest that cigarette sub-sector companies should maintain optimal liquidity levels to avoid excessive idle funds, control leverage to sustain financial flexibility, and focus on improving asset utilization efficiency to maximize profitability. Financial managers are advised to balance short-term liquidity with long-term capital structure decisions to achieve sustainable financial performance.

Future studies should expand the analysis by including additional financial and non-financial variables such as firm size, sales growth, or market competition to capture broader determinants of profitability. It is also recommended to compare the cigarette sub-sector with other consumer goods industries to evaluate whether these relationships remain consistent across different business environments and regulatory contexts.

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