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Effects of Capital Structure, Liquidity, and Operational Efficiency on Firm Value in Indonesian Consumer Goods Companies, 2021–2025

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Abstract

This study analyzes the effects of capital structure, liquidity, and operational efficiency on firm value in consumer goods companies listed on the Indonesia Stock Exchange (IDX) during 2021–2025. Firm value is measured by price to book value (PBV), capital structure by the debt to equity ratio (DER), liquidity by the current ratio (CR), and operational efficiency by total asset turnover (TATO). The study employs a quantitative descriptive method using secondary data from annual financial reports. Purposive sampling produced 41 consumer goods companies observed over five years, yielding 205 panel data observations, which were analyzed using multiple linear regression in SPSS. The results show that capital structure, liquidity, and operational efficiency each have a positive and significant partial effect on firm value. Simultaneously, the three variables also have a positive and significant effect, with an adjusted R^2 of 0.676, meaning that 67.6% of the variation in firm value is explained by the three independent variables, while the remaining 32.4% is explained by other factors outside the model. Operational efficiency is the most dominant variable affecting firm value.

Keywords : *Capital Structure; Liquidity; Operational Efficiency; Firm Value; Consumer Goods*

I. INTRODUCTION

Globalization has intensified competition among companies, requiring every firm to strengthen its performance while maintaining investor confidence for long-term business continuity. Firm value is one of the benchmarks that investors watch most closely when assessing a company's prospects, because it reflects the market's assessment of the firm's future continuity. The growing number of companies going public indicates increasing interest among business actors in using the capital market as an alternative source of funding to support business expansion.

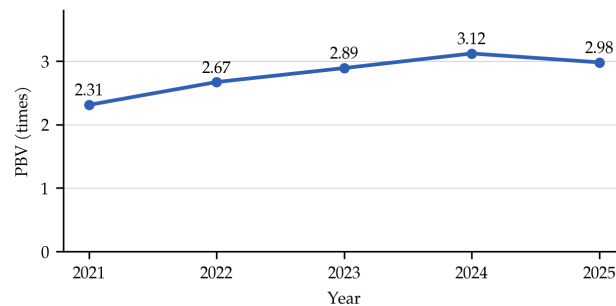


Fig. 1. Development of firm value (PBV), consumer goods sector, 2021–2025. Source: www.idx.co.id (processed data, 2026).

Fig. 1 shows the trend of price to book value (PBV) of consumer goods companies listed on the IDX during 2021–2025. PBV rose from 2.31 times in 2021 to 2.67 times in 2022 and 2.89 times in 2023, peaked at 3.12 times in 2024, and then declined to 2.98 times in 2025, a decrease of about 4.49% from the previous year. This decline indicates weakening investor confidence, influenced by global inflationary pressure, rising raw material and energy costs, and a relatively high interest rate policy.

This phenomenon cannot be separated from the firm's capital structure, reflected in the *debt to equity ratio* (DER); its liquidity, proxied by the *current ratio* (CR); and its operational efficiency, measured by *total asset turnover* (TATO). These three internal factors reflect a firm's fundamental condition in managing funding, meeting short-term obligations, and using assets optimally to generate sales.

Previous studies on the effects of capital structure, liquidity, and operational efficiency on firm value remain inconsistent (research gap). Amro (2021) found that capital structure has a positive and significant effect on firm value, whereas Oktaviani et al. (2019) concluded the opposite. Yanti and Darmayanti (2019) showed that liquidity has a positive and significant effect, whereas Ardiansyah (2020) found no significant effect. Given this empirical phenomenon and the inconsistent results, this study re-examines the effects of capital structure, liquidity, and operational efficiency on firm value in consumer goods companies listed on the IDX during 2021–2025. Specifically, it asks whether (1) capital structure, (2) liquidity, and (3) operational efficiency each affect firm value partially, and (4) whether the three variables affect firm value simultaneously.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A. Signalling Theory

Signalling theory explains how a company's internal parties provide information to external parties to communicate the company's condition (Spence, 1973). The theory arises from information asymmetry between management and outsiders such as investors and creditors. Information published by the company, such as financial statements, can serve as a positive or negative signal to which investors respond by adjusting their investment decisions, ultimately affecting the stock price and firm value.

B. Pecking Order Theory

According to Myers and Majluf (1984), pecking order theory explains the order of preference for a company's funding sources: internal funds first, then debt, and lastly the issuance of new shares. A company has no definite optimal capital structure target; instead, it adjusts its funding to the availability of internal funds and the risks posed by external funding.

C. Firm Value

Firm value is the price a prospective buyer is willing to pay if the company is sold, and it reflects the market's assessment of the firm's performance and future prospects (Husnan & Pudjiastuti, 2015). The higher the firm value, the greater the prosperity received by its owners (Brigham & Houston, 2019). This study uses PBV as a proxy for firm value because it is relatively simple to calculate and uses data available in financial statements and stock prices (Kasmir, 2019).

D. Capital Structure

Capital structure describes the composition of a company's funding from debt and equity to finance its operating activities (Husnan & Pudjiastuti, 2015). This study measures capital structure through the DER, which shows the proportion of debt to equity used by the company (Kasmir, 2019).

E. Liquidity

Liquidity is a ratio used to measure a company's ability to meet short-term obligations that are about to fall due by using the current assets it owns (Kasmir, 2019). This study uses the CR as a proxy for liquidity, reflecting the company's ability to settle short-term obligations with all available current assets.

F. Operational Efficiency

Operational efficiency is a company's ability to use resources appropriately to produce maximum output at a relatively minimum cost (Kasmir, 2019). This study measures operational efficiency through TATO, which shows how effectively the company uses its total assets to generate sales.

G. Hypothesis Development

A company that can optimize the combination of debt and equity has greater financial flexibility, so it can increase operational capacity, profitability, and firm value, as long as the use of debt remains within reasonable limits (Harmono, 2017). The findings of Amro (2021) support a positive effect of capital structure on firm value. Thus: **H1: Capital structure has a partial effect on firm value in consumer goods companies listed on the IDX in 2021–2025.**

In line with signalling theory, a high level of liquidity gives investors a positive signal that the company is in good financial condition and has a low default risk, which encourages investor interest and raises firm value; empirical evidence is mixed (Yanti & Darmayanti, 2019; Ardiansyah, 2020). Thus: **H2: Liquidity has a partial effect on firm value in consumer goods companies listed on the IDX in 2021–2025.**

High operational efficiency signals management's competence in managing resources and controlling costs (Harmono, 2017), which strengthens investors' confidence in the firm's future profitability (Amalia & Putra, 2024; Pramudita & Sodikin, 2026). Thus: **H3: Operational efficiency has a partial effect on firm value in consumer goods companies listed on the IDX in 2021–2025.**

Considered together, the three variables are expected to shape the market's view of the firm's condition. Thus: **H4: Capital structure, liquidity, and operational efficiency have a simultaneous effect on firm value in consumer goods companies listed on the IDX in 2021–2025.**

III. METHOD

This study uses a quantitative descriptive method with secondary data from the annual reports and annual financial statements of consumer goods companies listed on the IDX during 2021–2025, obtained from the official IDX website (www.idx.co.id). The population consists of 80 consumer goods companies. The sample was determined by purposive sampling using the following criteria: (1) consumer goods companies listed on the IDX in 2021–2025; (2) companies that consistently published financial statements during the period; and (3) companies with complete data on the research variables. These criteria yielded 41 companies observed over five years, a total of 205 panel data observations.

The dependent variable is firm value (Y), proxied by PBV. The independent variables are capital structure (X1), proxied by DER; liquidity (X2), proxied by CR; and operational efficiency (X3), proxied by TATO. The data were analyzed using classical assumption tests (normality, multicollinearity, autocorrelation, and heteroscedasticity), multiple linear regression, and hypothesis testing (t-test, F-test, and coefficient of determination) in SPSS. The regression model is:

$$FV = a + \beta_1 CS + \beta_2 LQ + \beta_3 OE + e \quad (1)$$

where FV is firm value, α is the constant, β_1 – β_3 are the regression coefficients, CS is capital structure, LQ is liquidity, OE is operational efficiency, and e is the error term.

IV. RESULTS AND DISCUSSION

A. Descriptive Statistics

Table I presents the descriptive statistics of the 205 observations. Firm value (PBV) has an average of 2.60, with the highest value held by PT Martina Berto Tbk (MBTO) in 2024 (4.34) and the lowest by PT Darya-Varia Laboratoria Tbk (DVLA) in 2025 (1.14). Capital structure (DER) has an average of 1.28 and fluctuates without a consistent pattern between years. Liquidity (CR) has an average of 2.03, a fairly good level, while operational efficiency (TATO) has an average of 0.93, with fluctuations that follow operating cost pressures in each period.

TABLE I. DESCRIPTIVE STATISTICS

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Capital structure	205	14	220	127.97	53.334
Liquidity	205	13	320	203.48	69.624
Operational efficiency	205	23	176	92.45	41.702
Firm value	205	114	434	259.93	58.178
Valid N (listwise)	205				

Ratios are expressed in percent (ratio $\times$ 100). Source: SPSS output, 2026.

B. Classical Assumption Tests

Normality. The Kolmogorov-Smirnov test was used to determine whether the residuals of the regression model are normally distributed (Table II). The asymptotic significance (2-tailed) of 0.200 and the Monte Carlo significance of 0.433 are both greater than 0.05, so the residuals are normally distributed and the normality assumption is satisfied.

TABLE II. ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST

Statistic (unstandardized residual)	Value
N	205
Normal parameters: mean	0.0000000
Normal parameters: std. deviation	32.87205390
Most extreme differences: absolute	0.044
Most extreme differences: positive	0.032
Most extreme differences: negative	-0.044
Test statistic	0.044
Asymp. Sig. (2-tailed)	0.200
Monte Carlo Sig. (2-tailed)	0.433
Monte Carlo 99% confidence interval (lower; upper bound)	0.420; 0.446

Lilliefors significance correction; Monte Carlo method with 10,000 samples. Source: SPSS output, 2026.

Multicollinearity. The multicollinearity test examines whether the independent variables are correlated, using the tolerance value and the variance inflation factor (VIF). As shown in Table III, all variables have tolerance values above 0.10 and VIF values below 10, so the model is free from multicollinearity.

TABLE III. MULTICOLLINEARITY TEST

Variable	Tolerance	VIF
Capital structure	0.998	1.002
Liquidity	0.997	1.003
Operational efficiency	0.995	1.005

Dependent variable: firm value. Source: SPSS output, 2026.

Autocorrelation. The Durbin-Watson (DW) test was used to detect correlation between the disturbance error in period t and period $t-1$. The DW value of 2.044 (Table VI) is close to 2, indicating that the model has no autocorrelation, whether positive or negative.

Heteroscedasticity. The heteroscedasticity test examines whether the residual variance is unequal across observations. The scatterplot in Fig. 2 shows that the residual points are scattered randomly around zero and form no clear pattern, indicating a constant residual variance, so the model is free from heteroscedasticity. With all classical assumption tests satisfied, the regression model is feasible for multiple linear regression analysis.

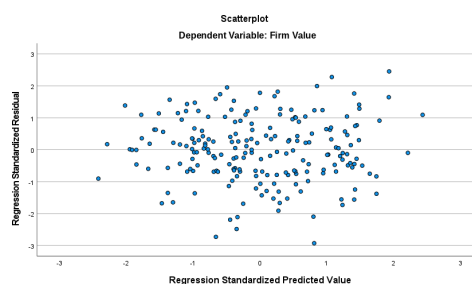


Fig. 2. Scatterplot of standardized residuals against standardized predicted values (Source: SPSS output, 2026)

C. Multiple Linear Regression and Partial t-Test

Multiple linear regression extends simple linear regression to more than one independent variable (Ghozali, 2018, p. 95). Table IV reports the results, which give the following equation:

$$FV = 71.463 + 0.375 CS + 0.290 LQ + 0.881 OE \quad (2)$$

TABLE IV. MULTIPLE LINEAR REGRESSION RESULTS

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	71.463	10.124		7.059	0.000
Capital structure	0.375	0.044	0.344	8.628	0.000
Liquidity	0.290	0.033	0.347	8.690	0.000
Operational efficiency	0.881	0.056	0.631	15.808	0.000

Dependent variable: firm value. Source: SPSS output, 2026.

The constant of 71.463 indicates that, if capital structure, liquidity, and operational efficiency are held constant, firm value is estimated at 71.463. All three coefficients are positive, so an increase in each independent variable is followed by an increase in firm value, with operational efficiency (0.881) having a greater effect than capital structure (0.375) and liquidity (0.290).

The partial t-test examines the effect of each independent variable individually (Ghozali, 2018). H0 is rejected if the calculated t exceeds the t-table value or the significance is below 0.05. Capital structure has a calculated t of 8.628, above the t-table value of 1.972, with a significance of 0.000 (< 0.05), so H1 is accepted. Liquidity has a calculated t of 8.690 (> 1.972) and a significance of 0.000, so H2 is accepted. Operational efficiency has a calculated t of 15.808 (> 1.972) and a significance of 0.000, so H3 is accepted. Each variable thus has a positive and significant partial effect on firm value, and operational efficiency is the most dominant.

D. Simultaneous F-Test and Coefficient of Determination

As shown in Table V, the calculated F of 142.864 exceeds the F-table value of 2.65, with a significance of 0.000 (< 0.05), so H4 is accepted: capital structure, liquidity, and operational efficiency simultaneously have a positive and significant effect on firm value in consumer goods companies listed on the IDX in 2021–2025.

TABLE V. F-TEST (ANOVA)

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	470,036.371	3	156,678.790	142.864	0.000
Residual	220,436.673	201	1,096.700		
Total	690,473.044	204			

Dependent variable: firm value. Source: SPSS output, 2026.

The coefficient of determination (R^2) measures the model's ability to explain variation in firm value; the larger the R^2 , the better the model explains the dependent variable. Table VI shows an adjusted R^2 of 0.676, so capital structure, liquidity, and operational efficiency together explain 67.6% of the variation in firm value. The remaining 32.4% is explained by other factors outside the model, such as profitability, company size, and macroeconomic conditions.

TABLE VI. MODEL SUMMARY

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
0.825	0.681	0.676	33.116	2.044

Predictors: (constant), operational efficiency, capital structure, liquidity. Dependent variable: firm value. Source: SPSS output, 2026.

E. Discussion

Capital structure. Capital structure has a positive and significant effect on firm value, in line with the implications of pecking order theory (Myers & Majluf, 1984): using debt within reasonable limits signals the company's confidence in its future profit prospects and provides tax-shield benefits. The average DER of about 1.28 indicates that most consumer goods companies maintained a relatively balanced funding composition between debt and equity. This finding agrees with Amro (2021) and Alifian and Susilo (2024) but disagrees with Oktaviani et al. (2019) and Nugroho and Bagana (2023), who found no effect of capital structure on firm value.

Liquidity. Liquidity has a positive and significant effect on firm value. Consistent with signalling theory, a high level of liquidity signals to investors that the company is in good financial condition and has a low default risk, which encourages investor interest and raises firm value. These results are consistent with Yanti and Darmayanti (2019) and

Alifian and Susilo (2024), but contradict Wildana (2021) and Apriliana et al. (2025), who found a negative effect, and Ardiansyah (2020), who found no significant effect.

Operational efficiency. Operational efficiency has a positive and significant effect on firm value, with the highest regression coefficient of the three variables (0.881), making it the most dominant factor in this study. High operational efficiency signals management's competence in managing resources and controlling costs (Harmono, 2017), strengthening investor confidence in future profitability. This finding agrees with Amalia and Putra (2024) and Pramudita and Sodikin (2026) but differs from Hidayat and Budianto (2026), who found no direct effect of operational efficiency, only an effect mediated by financial performance (ROA).

Simultaneous effect. The three variables are complementary in shaping the market's view of the firm's financial condition: an optimal capital structure supports operational funding and investment, well-maintained liquidity ensures cash flow stability, and operational efficiency ensures maximum use of resources to generate revenue. This finding strengthens the signalling and pecking order frameworks and is consistent with Alifian and Susilo (2024) and Ayshinta et al. (2019).

V. CONCLUSIONS

This study concludes that (1) capital structure, (2) liquidity, and (3) operational efficiency each have a positive and significant partial effect on the firm value of consumer goods companies listed on the IDX in 2021–2025, with operational efficiency the most dominant; and (4) the three variables simultaneously have a positive and significant effect, with an explanatory power of 67.6%.

Company management should continue to optimize capital structure, maintain a healthy level of liquidity, and improve operational efficiency through better asset management and cost control, since operational efficiency proved to be the most dominant factor in raising firm value. Investors should consider capital structure, liquidity, and especially operational efficiency in fundamental analysis before making investment decisions. Future research could add variables such as profitability, company size, dividend policy, and ownership structure; extend the object of study to other sectors; and use panel data regression methods such as the fixed effect model (FEM) or random effect model (REM) to obtain more accurate, efficient, and robust estimates.

REFERENCES

- Alifian, D., & Susilo, D. E. (2024). The effect of profitability, liquidity, company size, and capital structure on firm value. *Owner: Riset & Jurnal Akuntansi*, 8(1), 46–55. <https://doi.org/10.33395/owner.v8i1.1914>
- Amalia, N., & Putra, A. (2024). The effect of profitability, company size, and operational efficiency on firm value. *Economic Reviews Journal*, 3(4), 1825–1842. <https://doi.org/10.56709/mrj.v3i4.559>
- Amro, P. Z. N. (2021). *The effect of profitability, company size, and capital structure on firm value* [Undergraduate thesis].
- Apriliana, Wijaya, D., & Ilyas, F. (2025). *The effect of liquidity and profitability on firm value (Case study of consumer goods sector companies listed on the Indonesia Stock Exchange in 2021–2024)*.
- Ardiansyah, G. G. K. (2020). *The effect of profitability, company size, leverage, and liquidity on firm value* [Undergraduate thesis].
- Ayshinta, et al. (2019). The effect of financial variables on firm value. *Media Akuntansi Perpajakan*, Universitas 17 Agustus 1945 Jakarta.
- Brigham, E. F., & Houston, J. F. (2019). *Fundamentals of financial management* (14th ed.). Salemba Empat.
- Ghozali, I. (2018). *Multivariate analysis application with the IBM SPSS 25 program* (9th ed.). Diponegoro University Publishing Agency.
- Harmono. (2017). *Balanced scorecard-based financial management*. Bumi Aksara.
- Hidayat, & Budianto. (2026). Financial performance as a mediator between operational efficiency and capital structure on firm value.
- Husnan, S., & Pudjiastuti, E. (2015). *Fundamentals of financial management* (7th ed.). UPP STIM YKPN.
- Kasmir. (2019). *Financial statement analysis* (Rev. ed.). Rajawali Pers.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221.
- Oktaviani, M., Rosmaniar, A., & Hadi, S. (2019). The effect of company size (size) and capital structure on firm value. *Balance*, 16(1), 102–111.
- Nugroho, A. W., & Bagana, B. D. (2023). The effect of profitability, capital structure, and company size on firm value.
- Pramudita, F. P., & Sodikin, M. (2026). The effect of capital structure and operational efficiency on the firm value of manufacturing companies in the 2021–2024 period.
- Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355–374.
- Wildana, M. (2021). The effect of liquidity, dividend policy, profitability, and company size on firm value.
- Yanti, I. G. A. D. N., & Darmayanti, N. P. A. (2019). The effect of profitability, company size, capital structure, and liquidity on the value of food and beverage companies. *E-Jurnal Manajemen*, 8(4), 2297–2324. <https://doi.org/10.24843/EJMUNUD.2019.v08.i04.p15>