

# Capital Structure and Firm Value in Consumer Cyclical: The Weakening Moderating Role of Profitability During Market Volatility 2021-2024

Fatimah<sup>1</sup>, Naelati Tubastuvi<sup>2\*</sup>, Erna Handayani<sup>3</sup>, Meydy Fauziridwan<sup>4</sup>

<sup>1,2,3,4</sup> Universitas Muhammadiyah Purwokerto

[fatimahbasalamah2@gmail.com](mailto:fatimahbasalamah2@gmail.com), [naelatitubastuvi@ump.ac.id](mailto:naelatitubastuvi@ump.ac.id), [ernahandayani@ump.ac.id](mailto:ernahandayani@ump.ac.id),  
[meydy.fauziridwan@gmail.com](mailto:meydy.fauziridwan@gmail.com)

\*Corresponding Author

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## ABSTRACT

*This study examines the influence of capital structure, investment decisions, and firm size on firm value, with profitability as a moderating variable. The novelty of this research lies in demonstrating that profitability weakens the relationship between capital structure and firm value, a finding that contrasts with most prior studies, and in employing a Fixed Effect Model (FEM) with Driscoll–Kraay standard errors to address heteroskedasticity. The sample consists of 38 firms selected from 163 consumer cyclical companies listed on the Indonesia Stock Exchange during 2021–2024, resulting in 152 firm year observations. The FEM Driscoll–Kraay results show that capital structure has a positive and significant effect on firm value, indicating that higher leverage can increase market confidence and enhance firm valuation. However, the moderation test reveals that profitability significantly weakens the effect of capital structure on firm value, meaning that when profitability increases, the contribution of leverage to firm value becomes less influential. Meanwhile, investment decisions and firm size do not significantly affect firm value, nor are their relationships moderated by profitability. These findings imply that managers must adjust leverage policies carefully during periods of high profitability, as its value-enhancing impact diminishes, while investors should prioritize analyzing capital structure and profitability as key indicators of firm strength.*

**Keywords** : capital structure; firm size; investment decisions; profitability.

## INTRODUCTION

Firm value is determined by both internal and external elements, encompassing the strategic direction and oversight provided by owners and management, as well as inherent capital competencies. Within this framework, owners establish governance mechanisms aimed at corporate development and wealth optimization (Tabe et al., 2022). The enhancement of corporate valuation consequently reflects shareholder welfare improvement, generates favorable market sentiment, and reinforces investor trust in the organization's operational performance and future growth potential (Nurdin et al., 2023).

The Consumer Cyclical sector on the Indonesia Stock Exchange (IDX) demonstrated notable volatility throughout the 2021-2024 observation period. The sector experienced a 1.63% year-to-date decline in 2021, primarily driven by social limitations and weakened consumer spending power amid rising raw material costs (Soenarso & Laoli, 2021). Market conditions subsequently rebounded in early 2022 with an average price appreciation of 5.60%, reflecting restored consumer optimism despite persistent inflationary concerns (Mulyana & Winarto, 2022). This upward trajectory continued through mid-2023, evidenced by a 7.04% market value increase supported by sector rotation, normalized public mobility, and stimulus from automotive and tourism segments (Mulyana & T.Rahmawati, 2023). By the second quarter of 2024, the sector reported Rp10.10 trillion in revenue, representing 11.41% of IDX's total revenue, though equity

values continued to demonstrate instability despite revenue growth (Safitri & Djumena, 2024). These fluctuating patterns underscore the sector's pronounced sensitivity to macroeconomic shifts and consumer expenditure capacity.



Figure 1. Chart Consumer Cyclical Price Movement  
Source: Consumer Cyclical Financial Report

According to [Investing.com](https://www.investing.com) data, the Consumer sector index demonstrated notable volatility during the observation period. The index commenced with a substantial ascent from 720 in 2021 to approximately 950 in early 2022, indicating favorable market perception. However, a subsequent contraction occurred throughout 2022-2023, with the index receding to the 800-850 range, potentially attributable to inflationary challenges and diminished consumer confidence. This downward trajectory persisted into 2023-2024 as the index descended to a trough of roughly 700, likely influenced by constrained public purchasing capacity. Towards the conclusion of 2024, a discernible recovery emerged with the index stabilizing between 820-850, suggesting sectoral recuperation following substantial market pressures.

Concurrently, an optimally configured capital structure substantially affects corporate market valuation by facilitating strategic adjustment of financial resources to maximize worth (Tubastuvi et al., 2023). The composition of financing sources represents a fundamental consideration in investment appraisal due to its interconnection with investor risk-return parameters. This financial architecture constitutes a strategic determination essential for capital allocation and corporate performance enhancement (Maulana Sahid & Henny I, 2023). Empirical investigations consistently validate the materially positive impact of capital structure on firm valuation (Tubastuvi et al., 2023; Manurung, 2023; Syamsudin et al., 2020).

Capital investment constitutes an essential component of corporate financial strategy, necessitating comprehensive assessment of anticipated risks and returns in project funding allocations (Hamidah & Ramdani, 2023). Substantial investment commitments communicate favorable signals to stakeholders regarding expansion potential and demonstrate managerial assurance in attaining optimal yields (Arianti, 2022). The fundamental aim of strategic investment focuses on wealth generation through balanced risk mitigation, where judicious capital deployment can produce economic surplus and earnings retention, while erroneous allocation may impair shareholder equity and corporate valuation (Charisma & Ratih, 2022). Multiple empirical investigations substantiate the persistent impact of investment on firm value (Rahmadi et al., 2023; Agung et al., 2021; Taufik et al., 2022).

Furthermore, organizational efficacy in resource utilization substantially determines operational performance and market valuation. Corporate scale, quantified through total assets, functions as a crucial proxy or this capability (Wijayaningsih & Yulianto, 2021). Enterprises

with larger asset bases demonstrate enhanced capacity to attract capital and issue additional equity while maintaining governance control, consequently elevating corporate worth through performance improvement (Manurung, 2023). Academic research (Amalia et al., 2023; Nursetya & Hidayati, 2021; Manurung, 2023) verifies that organizational dimensions affect firm valuation by enabling superior access to financing alternatives, thus operating as a determinant element in investment considerations that propel corporate development.

Profitability, employed as a moderating variable, affects a firm's ability to generate profit. It is measured by Return on Assets (ROA), which indicates the efficiency of assets in producing net income (Syamsudin et al., 2020) and is a vital consideration for investment decisions. High profitability signals stronger growth prospects, consequently increasing a firm's investment appeal in the perception of investors.

The novelty of this research lies in the integration of firm size within an empirical model specific to the consumer cyclical sector. Previous research by Syamsudin et al. (2020) examined a similar relationship but omitted firm size and focused on a different sector, while Tubastuvi et al. (2023) also conducted their study in a different industry. Furthermore, the research by Hamidah & Ramdani (2023) analyzed only direct relationships without accounting for moderating effects. Additionally, this study employs STATA for data analysis, distinguishing its methodology from that of prior research. Despite extensive prior research on capital structure, investment decisions, and firm value, several important gaps remain unaddressed particularly within sectors characterized by high volatility. The Consumer Cyclical industry during 2021–2024 exhibited sharp market fluctuations driven by post pandemic recovery, inflationary pressure, and unstable consumer purchasing power. These characteristics create an empirical gap, as prior studies have not examined the capital structure firm value relationship under such stressed market conditions, nor tested whether profitability weakens this relationship within highly unstable environments. This study therefore extends the theoretical foundation of the Trade-Off and Pecking Order theories by introducing profitability as a weakening moderator and incorporating investment sensitivity under market stress as a contextual contribution, establishing the novelty of the research.

## LITERATURE STUDY

### *Signaling Theory*

Signaling theory originates from the premise that corporate management, as internal stakeholders, inherently maintains superior knowledge concerning the organization's current status and future outlook compared to external parties. While executives cannot precisely forecast security price fluctuations or interest rate variations, they possess substantially deeper insights into corporate potential. The nondisclosure or limited accessibility of such critical information to investors manifests the fundamental information asymmetry characterizing the relationship between internal and external stakeholders (Syamsudin et al., 2020). Signaling Theory explains that investors often lack complete information about a company's condition, so they rely on signals from the company to assess its prospects and quality. When a company provides credible signals, investors interpret these signals as indicating good prospects and lower risk. As a result, investors are more confident in making investment decisions. Conversely, if signals are distrusted, investors tend to exercise restraint or be more cautious (Arsya et al., 2025).

### *Trade off Theory*

The Trade-off Theory postulates that leveraged financing can enhance corporate valuation up to an optimal threshold, beyond which additional debt accumulation produces detrimental effects. Debt instruments offer advantageous tax shields through interest deductibility, yet simultaneously introduce financial constraints through fixed obligations and heightened default probability. When debt servicing costs surpass returns generated from borrowed capital, the consequent financial distress not only diminishes corporate worth but also compromises stakeholder confidence in the organization's fiscal health (Eden & Yuniningsih, 2024). According to this theory, an optimal capital structure exists when the tax benefits of debt outweigh the potential costs of financial distress. At a reasonable debt level, the risk of distress remains low, making debt profitable. However, higher debt increases the risk of bankruptcy and can reduce the company's

value. Therefore, companies will adjust their capital structure according to their performance and risk tolerance (Bui et al., 2023).

### **Firm Value**

Corporate valuation manifests through its market price, where share appreciation signifies both enhanced investor returns and increased corporate worth, consistent with fundamental corporate objectives (Asril, 2021). For investors, this valuation serves as a crucial market-derived metric for evaluating comprehensive organizational performance and growth potential. Elevated firm value indicates optimized operational efficiency, which subsequently attracts capital inflows that further propel equity valuations through positive market feedback mechanisms (Nursetya & Hidayati, 2021). Corporate value is formed from a company's ability to manage resources to generate sustainable performance. In this regard, profitability (ROA) plays a role in determining how well a company's policies or strategies translate into increased value. When ROA is high, solid profit performance makes every strategic decision more convincing to investors, leading to a more positive market response to the company's value. However, when ROA is low, the effectiveness of these policies tends to weaken because the company is deemed less able to convert assets into profits, thus decreasing investor perceptions of the company's value. Thus, the level of profitability determines the extent to which a company's strategy is reflected in its value (Pangestuti et al., 2022).

### **Capital Structure**

The trade-off theory conceptualizes optimal financing structure as balancing debt-related advantages against associated costs. Within established parameters, leveraged financing can augment corporate valuation through tax shield benefits and capital cost optimization. However, exceeding optimal leverage thresholds potentially erodes value through financial distress costs and increased bankruptcy risk (Charisma & Ratih, 2022). Empirical investigations substantiate this theoretical framework, demonstrating significant capital structure impacts on corporate valuation (Syamsudin et al., 2020; Manurung, 2023; Nugraha et al., 2021) Consequently, this study proposes: H1: Capital structure positively influences firm value.

### **Investment Decisions**

At its conceptual foundation, investment constitutes the strategic allocation of present resources anticipating future economic returns (Syamsudin et al., 2020). Within this paradigm, signaling theory elucidates how corporate financial disclosures mitigate information asymmetries by transmitting performance indicators to external stakeholders (Tubastuvi et al., 2023). Strategic capital allocation not only establishes necessary conditions for optimal performance but also demonstrates managerial proficiency in resource deployment for value creation (Taufik et al., 2022). According to this theory, investment decisions can signal a company's prospects. When dividends are withheld to finance investment projects, investors perceive the company as having profitable investment opportunities, thus signaling a positive outcome (Rahmadi et al., 2023). Furthermore, empirical investigations consistently validate the positive correlation between investment decisions and corporate valuation (Taufik et al., 2022; Agung et al., 2021; Sherine et al., 2022) yielding the following proposition:

H2: Investment decisions positively affect firm value.

### **Firm Size**

Empirical observations establish that entities with expanded operational scales typically exhibit superior investment attractiveness relative to smaller enterprises. This distinction stems from large-scale organizations' demonstrated financial resilience and enhanced productive capabilities, characteristics that potentially drive equity valuation improvements in financial markets and subsequently elevate corporate worth. From an operational standpoint, firm size is quantified through total asset valuation as reflected in accounting records (Manurung, 2023). Large companies have greater capabilities, resources, and flexibility, so the relationship between variables can also change depending on the size of the company (Mansour, Zobi, et al., 2024). Supporting this construct, multiple empirical studies (Hertina et al., 2023; Hidayat & Khotimah, 2022; Amalia

et al., 2023) document the persistent positive relationship between organizational scale and corporate valuation, resulting in the final hypothesis:

H3: Firm size positively influences firm value.

### **Profitability**

Profitability is measured using Return on Assets (ROA), a ratio that evaluates how effectively a company generates profit from its total assets, where a higher ROA reflects increasingly optimal financial performance (Handayani, 2021). Elevated profitability enhances firm value through dual mechanisms: it signals robust growth potential to investors, thereby stimulating equity demand, while simultaneously strengthening the financial foundation for leveraging internal and external capital to fuel sustainable expansion (Deme et al., 2022). Companies with high profitability have greater internal funding capacity, thus decreasing reliance on debt-based financing. Under these conditions, the role of leverage in increasing company value becomes less dominant. Within this conceptualization, empirical research confirms profitability's function as a moderating variable in the capital structure-firm value relationship (Syamsudin et al., 2020) and (Deme et al., 2022) leading to the formulation of:

H4: Profitability moderates the effect of capital structure on firm value.

Conceptually, profitability denotes organizational competence in generating returns from core operations and strategic investments, while simultaneously reflecting managerial efficiency in resource deployment (Mulyani & Oktaviani, 2022). High profitability reflects a company's effectiveness in managing assets, thus increasing its ability to generate economic benefits from its investment activities. Strong earnings performance sends a positive signal to investors that risk is decreasing, making financial information more impactful in their judgments. However, high earnings make investors feel more secure, weakening their sensitivity to other indicators. Thus, profitability levels shape how investors respond to information, both strengthening and enhancing the emerging relationship (Ulum et al., 2024). Thus, ROA has the potential to strengthen the contribution of investment decisions to company value (Suteja et al., 2023), with market participants incorporating this information into equity pricing mechanisms. Academic investigations verify profitability's moderating capacity in the investment decision valuation relationship (Suteja et al., 2023) and (Munawaroh & Munandar, 2024), supporting:

H5: Profitability moderates the effect of investment decisions on firm value.

Concurrently, corporate scale impacts valuation through market presence and financial stability perceptions. Larger entities typically benefit from heightened market recognition and assumed operational resilience, fostering greater investor confidence in their product offerings and service capabilities (Tubastuvi et al., 2023). Larger companies with high profitability are generally perceived as having stronger operational capacity and competitiveness. This strengthens market perceptions of the company's stability and prospects, allowing ROA to increase the influence of company size on its value (Eden & Yuniningsih, 2024), justifying:

H6: Profitability moderates the effect of firm size on firm value.

### **Conceptual Framework**

Serving as the methodological basis for this investigation, the conceptual framework methodically outlines the interrelationships among the independent variables capital structure (X1), investment decisions (X2), and firm size (X3) and the dependent variable, firm value (Y). The framework additionally specifies the function of profitability (Z) as a moderating variable that modifies the intensity and nature of these causal connections. The accompanying diagram provides a complete visual representation of the research paradigm.

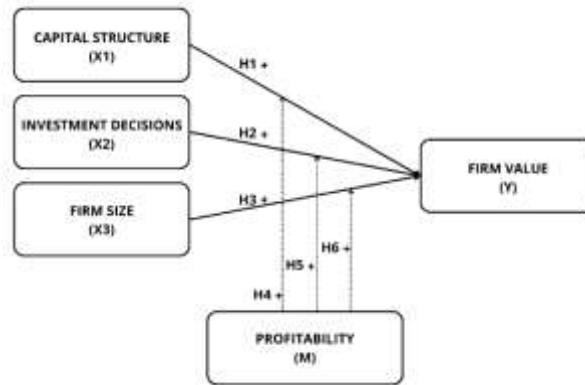


Figure 2. Conceptual Framework  
 Source: Processed by the Author, (2025)

### METHODS

This research utilizes a quantitative methodology, employing statistical techniques to analyze numerical data. The quantitative approach was selected for its capacity to produce objective and quantifiable understanding of the studied phenomenon through structured data analysis (Nugraha et al., 2021).

The study population comprises all enterprises listed in the Consumer Cyclical sector of the Indonesia Stock Exchange throughout the 2021-2024 observation window. A purposive sampling method was implemented, applying specific criteria consistent with research objectives. Through this sampling procedure, 38 companies meeting the established parameters were selected as the research sample. The detailed sample selection mechanism is elaborated in Table 1.

Table 1. Sample Selection Criteria

No	Description	Quantity
1.	Companies in the Consumer Cyclical sector listed on the Indonesia Stock Exchange (IDX) for the 2021-2024 period	163
2.	Companies that did not publish consistent annual reports and had incomplete data	(42)
3.	Companies that experienced losses during the 2021-2024 period	(75)
4.	Companies using US Dollar currency	(8)
5.	Final Research Sample	38
Total Observation Data (38 companies x 4 years)		152

Source: Processed by the Author, (2025)

### Data Analysis Technique

This study employs panel data regression analysis using STATA 17 software. The model utilized is Model 2, the Fixed Effect Model (FEM), selected for its ability to accommodate the time-invariant individual characteristics unique to each company. The general equation for the fixed effect model is formulated as follows:

$$Y = \alpha + \beta_1 DER + \beta_2 PER + \beta_3 SIZE + \beta_4 ROA + \beta_5 ROA * DER + \beta_6 ROA * PER + \beta_7 ROA * SIZE + \epsilon_{it}$$

Note:

- Y : Firm Value
- DER : Capital Structure (Debt to Equity Ratio)
- PER : Investment Decision (Price to Earnings Ratio)
- SIZE : Firm Size
- ROA : Profitability (Return on Assets)
- ROA\*DER : Interaction term between ROA and DER
- ROA\*PER : Interaction term between ROA and PER

ROA\*SIZE : Interaction term between ROA and SIZE  
 eit : Residual / Error

Table 2. Operational Definition of Variables

No	Variable	Definition	Formula
1	Firm Value	The market valuation that reflects investor perception of a company's performance and growth prospects, serving as an indicator of shareholder welfare (Margono & Gantino, 2021).	$Tobin's\ Q = \frac{(MVE + Debt)}{Total\ Aset}$ (Syamsudin et al., 2020)
2	Profitability	The company's capability to generate profit, indicating management effectiveness and acting as a positive signal that influences firm value (Syamsudin et al., 2020).	$ROA = \frac{Net\ Income}{Total\ Aset}$ (Syamsudin et al., 2020)
3	Capital Structure	The relative composition of debt and equity used to finance long-term operational activities, representing the distribution of firm value between creditors and shareholders (Bui et al., 2023).	$DER = \frac{Total\ Debt}{Total\ Equity}$ (Tubastuvi et al., 2023)
4	Investment Decisions	Strategic actions to allocate capital into assets or projects expected to generate future returns, involving selection processes aligned with corporate objectives (Bon & Hartoko, 2022).	$PER = \frac{Share\ Price}{Earning\ per\ Share}$ (Firmansyah et al., 2025)
5	Firm Size	The operational scale of a business entity, reflecting its operational capacity and level of financial stability (Amanatur et al., 2024)	$Size = Ln (Total\ Asset)$ (Bon & Hartoko, 2022)

Source: Processed by the Author, (2025)

This research employs a multiple linear regression methodology for data examination. The analytical approach specifically concentrates on evaluating moderating variables that potentially intensify or diminish the relationship between independent and dependent constructs. The comprehensive analytical procedures, executed through STATA 17 software, encompass both classical assumption verification and the integration of interaction terms to investigate moderating effects.

### Model Selection Technique

Panel data regression analysis incorporates three fundamental estimation approaches: the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The determination of the most suitable model is conducted through sequential statistical testing, comprising the Lagrange Multiplier test for selecting between CEM and REM, followed by the Hausman test for distinguishing between REM and FEM (Satyahadewi et al., 2023). This systematic testing procedure ensures the identification of the most appropriate estimation technique based on the specific characteristics of the dataset and research objectives.

Table 3. Estimation Model

Test	Conditions	Equation	Prob. Result	Selected Model
Uji Hausman	H0 Random Effect Model (REM)	Equation 1	0.8918	REM
	Ha Fixed Effect Model (FEM)	Equation 2	0.0000	FEM

Uji Lagrange Multiplier	H <sub>0</sub> Common Effect Model (CEM)	Equation 1	0.0000	REM
	H <sub>a</sub> Random Effect Model (REM)	Equation 2	0.0000	FEM

Source: Processed by the Author, (2025)

### Hausman Test

The Hausman test was employed to determine the most appropriate estimation model between the Random Effect Model (REM) and Fixed Effect Model (FEM). Based on the statistical output presented in the corresponding table, the probability value for Equation 1 is 0.8918, while Equation 2 demonstrates a value of 0.0000. According to the decision criteria, when the probability value exceeds the 5% significance level ( $p > 0.05$ ) as in Equation 1, the null hypothesis ( $H_0$ ) fails to be rejected, thus selecting REM as the appropriate model. Conversely, for Equation 2 where the probability falls below 0.05 ( $p < 0.05$ ),  $H_0$  is rejected and FEM emerges as the more suitable model. Consequently, the implementation of the Hausman test concludes that Equation 1 should be analyzed using REM while Equation 2 requires FEM.

### Uji Lagrange Multiplier (LM)

The Lagrange Multiplier test was employed to determine the preferable model between the Common Effect Model (CEM) and Random Effect Model (REM). The test yielded probability values of 0.0000 for both equations, which are statistically significant at the 5% level ( $p < 0.05$ ). Consequently, the null hypothesis is rejected, indicating the statistical preference for REM over CEM. Synthesizing results from both Hausman and Lagrange Multiplier tests, this study concludes that Equation 1 employs REM while Equation 2 utilizes the Fixed Effect Model (FEM) for estimation purposes.

The selection of the Fixed Effect Model (FEM) in this study also has a strong theoretical basis. FEM is used when each unit of analysis has specific characteristics that remain constant over time and have the potential to influence the relationship between the independent and dependent variables. These characteristics cannot be observed or measured directly, but can introduce bias if left unchecked. Econometrically, if the individual effects are correlated with the explanatory variables, then FEM is the most appropriate and consistent estimator (Mansour, Yamin, et al., 2024).

## RESULTS

Table 4. Descriptive Analysis

Variable	Obs	Mean	Std. dev.	Min	Max
TBQRatio	152	1.726989	2.408755	.2112791	22.03748
DER	152	2.10236	15.43616	.0409279	190.307
PER	152	65.66778	225.5969	3.062426	2307.692
SIZE	152	28.6304	1.587315	24.80725	31.22129
ROA	152	.0578418	.0470353	.0001898	.2405513

Source: Processed using STATA version 17 (2025)

The descriptive statistical analysis reveals distinct characteristics of the research variables. Tobin's Q averages 1.73 (SD=2.41), confirming prevailing market valuations above book value, reflecting investor optimism about future corporate performance. The capital structure indicator (DER) demonstrates a mean of 2.10 (SD=15.43) with extreme variations (0.04-190.30), indicating that sample firms typically maintain debt levels approximately double their equity, representing aggressive financing strategies. The PER metric averages 65.66 (SD=225.59) within a wide range (3.06-2,307.69), suggesting investors' substantial growth expectations as they value each rupiah of earnings at approximately 65 times.

Regarding firm characteristics, the SIZE variable averages 28.63 (SD=1.59) in logarithmic terms, equivalent to approximately IDR 7,003 billion in total assets, confirming the sample's composition of large-scale enterprises. Profitability analysis shows ROA averaging 5.78% (SD=4.70%), indicating generally efficient asset utilization despite considerable inter-firm variation in profit generation capacity. The substantial standard deviations across multiple variables

highlight significant heterogeneity within the sample, necessitating robust statistical techniques to ensure reliable estimation results.

### Classical Assumption Test

Table 5. Classical Assumption Test

Classical Assumption Test	Prob.
Autocorrelation	0.8011
Heteroscedasticity	0.0000

Source: Processed using STATA version 17 (2025)

This study verifies classical assumptions through two principal diagnostic procedures: autocorrelation and heteroskedasticity testing. According to the evaluation results presented in Table 5, the autocorrelation test yields a significance value of 0.8011, which exceeds the alpha threshold of 0.05 ( $p > 0.05$ ). This confirms the absence of autocorrelation issues in the regression model. Conversely, the heteroskedasticity test demonstrates a probability value of 0.0000, significant at the 0.05 level ( $p < 0.05$ ). This finding indicates the presence of heteroskedasticity in the research model. To address this statistical distortion, the study implements the Driscoll-Kraay regression method. This approach is deemed appropriate due to its capability to correct standard errors through non-parametric techniques that remain robust even when the cross-sectional dimension exceeds the time-series length (Kharisma et al., 2025).

According to González-Ruiz et al. (2025), the Fixed Effect Model is suitable for use because each company has unmeasured fixed characteristics that are potentially buried with independent variables so that FEM provides more consistent estimates than Random Effect, reinforced by the F test which shows significant individual effects and the Hausman test ( $p$ -value  $< 0.05$ ) which confirms that RE is biased, and because financial panel data commonly contains extreme heteroscedasticity, autocorrelation, and cross-sectional dependence, the Driscoll-Kraay Standard Errors are used.

### Multicollinearity Test

Tabel 6. Multicollinearity Test

Variabel	VIF	1/VIF
DER	1.02	0.980272
PER	1.08	0.927409
SIZE	1.18	0.850684
ROA	1.19	0.843158
DER_ROA	1.01	0.987077
PER_ROA	1.01	0.994047
SIZE_ROA	1.25	0.799971
Mean VIF	1.10	

Source: Processed using STATA version 17 (2025)

Multicollinearity testing was conducted using the Variance Inflation Factor (VIF). Considering that the research model involves interaction variables, moderating variables were first formed using the residual-centering technique to eliminate the mechanical correlation between the interaction variables and their constituent variables. The test results showed that all VIF values ranged from 1.01 to 1.25, with a mean VIF of 1.10. Thus, it can be concluded that the research model is free from multicollinearity problems. Residual-centering was used to minimize structural multicollinearity, which generally occurs in models with interaction variables, without changing the econometric meaning of the interaction coefficients themselves (Park, 2024).

### Model Comparison and Robustness Results

Tabel 7. Model Comparison and Robustness Results

Variabel	FE	RE	FE Cluster	FE Driscoll–Kraay
DER	.2512838	.0913762	0.2513	.251283
PER	-.0002757	.0000305	-0.00028	-.0002757
SIZE	-.5623359	-.1889235	-0.5623	-.5623359
ROA	-43.39395	-39.57439	-43.3940	-43.39395
DER_ROA	-2.237433	-.7886674	-2.2374	-2.237433
PER_ROA	.3491187	.5689315	0.3491	.3491187
SIZE ROA	1.831573	1.557107	1.8316	1.831573

Source: Processed using STATA version 17 (2025)

The robustness test results table shows that the coefficient estimates are relatively consistent across various model specifications: Fixed Effects (FE), Random Effects (RE), Fixed Effects with clustered standard errors, and Fixed Effects with Driscoll–Kraay correction. In general, the signs and magnitudes of the coefficients on the main variables (DER, PER, SIZE, and ROA) and the interaction variables (DER×ROA, PER×ROA, and SIZE×ROA) do not change substantially across estimators, indicating structural stability of the relationships between the variables. After applying more stringent standard error corrections, specifically through the clustering and Driscoll–Kraay approaches, all coefficients become statistically insignificant. This reflects the presence of heteroscedasticity, intracluster correlation, and possible cross-time and cross-unit dependence in panel data, which leads to increased standard errors and weakened model inference power. Consistent with Ridwan et al. (2024), the use of Driscoll–Kraay standard errors is considered most appropriate in the context of panel data exhibiting extreme heteroscedasticity and indications of cross-sectoral dependence, as this method is able to more reliably correct for unstable structural variance.

Although statistical significance weakens after the strong correction, the direction of the coefficients for DER and its interaction with ROA remains consistent across model specifications. This suggests that, economically, increasing capital structure tends to negatively impact firm value as profitability increases, although this effect is not statistically robust after accounting for complex structural errors. The comparison results show that the signs and relative magnitudes of the coefficients are consistent across the FE, RE, clustered FE, and Driscoll–Kraay estimators, indicating the structural robustness of the estimated models.

### Hypothesis Testing

Table 7. Hypothesis Testing

TBQRatio	Coefficient	Robust std. err.	t	P> t
DER	.251283	.0782261	3.21	0.049
PER	-.0002757	.0005026	-0.55	0.622
SIZE	-.5623359	.4315963	-1.30	0.284
ROA	-43.39395	26.91556	-1.61	0.205
DER ROA	-2.237433	.7027865	-3.18	0.050
PER ROA	.3491187	.1189846	2.93	0.061
SIZE ROA	1.831573	.983305	1.86	0.159
cons	16.72856	12.34298	1.36	0.268
F	23.54			
Prob > F	0.0126			
within R-Squared	0.3350			
No. Observation	152			

Source: Processed using STATA version 17 (2025)

Regression analysis shows that capital structure (DER) has a significant positive effect on firm value ( $p = 0.049$ ), indicating that well-managed leverage is still viewed favorably during the 2022–2023 period. Meanwhile, investment decisions, as measured by PER (Period of Return on Assets), are insignificant ( $p = 0.622$ ) due to investor behavior in 2022–2023 tending to be defensive, leading investors to no longer use PER as a primary indicator due to post-pandemic earnings volatility. Firm size also shows no significant effect ( $p = 0.284$ ) despite an average size of IDR 7 trillion. This is because companies in this cyclical sector do not prioritize a large asset base but rather rely on asset-light operations and shifts in consumer sentiment, so firm size does not automatically increase value.

Moderation results indicate that ROA weakens the effect of DER on firm value ( $p = 0.050$ ) because companies with high profitability tend to rely on internal funding, thus reducing the need for debt. According to Pecking Order Theory, when a company is able to generate substantial profits, leverage is no longer the primary factor determining firm value, so an increase in DER actually has a smaller impact on market valuation. This occurs because investors value profit performance more than capital structure, so the use of debt no longer provides a positive signal to the market. Conversely, the moderation of PER\_ROA ( $p = 0.061$ ) and SIZE\_ROA ( $p = 0.159$ ) is insignificant because profitability cannot strengthen or weaken variables that do not directly affect firm value. Overall, the model remains significant ( $p = 0.0126$ ) with an  $R^2$  of 0.3350, indicating that although the research variables contribute to explaining firm value, external factors remain more dominant in influencing firm valuation.

## DISCUSSION

### The Effect of Capital Structure on Firm Value

The empirical results establish that capital structure, measured by Debt to Equity Ratio (DER), significantly enhances firm value, thereby validating Hypothesis 1. This outcome corresponds with previous research by (Syamsudin et al., 2020; Tabe et al., 2022; Nugraha et al., 2021), indicating that robust corporate fundamentals support strategic debt utilization for value optimization. Theoretically, this finding conforms to Trade-off Theory principles, wherein debt employment within reasonable parameters contributes to valuation improvement despite inherent financial risks (Amro & Fadrijh, 2021). Particularly within the Consumer Cyclical sector's volatile 2021-2024 landscape, enterprises particularly in the volatile Consumer Cyclical sector landscape of 2021-2024, which burdens their projects with a large portion of debt, generally provides a positive signal to the market that the project has a profitable outlook and is capable of generating cash flow capable of meeting its debt obligations (Nurhidayah & Purwidiyanti, 2024). Empirical data shows that companies with high DER tend to use debt for operational purposes and demand recovery. Within the framework of trade-off theory, this explains that tax benefits and signals of management optimism outweigh the risk of bankruptcy. Therefore, the significant results are not merely statistical phenomena, but rather a reflection of investors' rational response to perceived productive and controlled debt use.

### The Effect of Investment Decisions on Firm Value

Contrary to theoretical expectations, investment decisions proxied by Price Earnings Ratio (PER) demonstrate statistically insignificant effects on corporate valuation, resulting in Hypothesis 2 rejection. This implies that investment initiatives alone insufficiently drive valuation improvements, corroborating (Putri & Budyastuti, 2021; Charisma & Ratih, 2022) regarding the limited direct role of investment in determining valuation. PER becomes insignificant because investor behavior in 2022–2023 was notably defensive, the apparent contradiction with signaling theory, which anticipates positive market reception to strategic investments, may be explained by Bon & Hartoko (2022), observation that investment's value-creation capacity is context-dependent. Market disturbances including investment yield uncertainties, macroeconomic volatility, and political instability likely suppressed investor responsiveness to investment signals sectoral fluctuations, thereby delaying the translation of investment activities into tangible valuation improvements. Therefore, in 2022–2023, investors are likely to be defensive due to the threat of economic, geopolitical, and earnings volatility, leading them to no longer use PER as a primary

indicator. Theoretically, this condition explains the failure of the signaling mechanism, as investment signals are not accompanied by certainty about future flows. Therefore, the insignificant relationship arises not because investment is unimportant, but because the market is unable to translate that investment into credible valuations under high conditions.

### **The Influence of Firm Size on Firm Value**

Empirical findings reveal that firm size, measured through total assets, does not significantly affect corporate valuation, leading to the rejection of Hypothesis 3. This outcome, while demonstrating a negative correlation, corresponds with previous research by (Bon & Hartoko, 2022; Margono & Gantino, 2021; Tubastuvi et al., 2023) company size becomes insignificant as the consumer cyclical sector during 2021-2024 shifts to asset-light operations. The results indicate that substantial asset bases do not inherently translate to superior profitability or enhanced market valuation. Although signaling theory suggests that organizational scale reflects managerial capability in opportunity identification and prospect development (Margono & Gantino, 2021), This research shows that these signals are not sufficient to influence investor valuations. Throughout the 2021-2024 period, the cyclical consumer sector prioritized not heavy assets, but light assets, and consumer sentiment and responsiveness to changes in consumer preferences. Data shows that firms with large assets do not always have a competitive advantage in responding to changing consumer preferences. In the context of signaling theory, firm size becomes a signal of quality failure because investors place more trust in actual performance indicators than asset size.

### **The Influence of Profitability in Moderating the Relationship Between Capital Structure and Firm Value**

Interaction analysis confirms that profitability significantly moderates the capital structure-valuation relationship with a negative coefficient, indicating its weakening effect on this association and supporting Hypothesis 4 acceptance. This phenomenon aligns with trade-off theory principles, which acknowledge debt's tax shield advantages while cautioning against financial risk escalation without proportional profit generation (Nurdin et al., 2023). Paradoxically, highly profitable enterprises appear to derive diminished marginal benefits from leverage increases, potentially reflecting investor perception that such firms possess weaker incentives for aggressive financial engineering. This finding receives empirical validation from Sari et al. (2020) and Deme et al. (2022), confirming profitability's moderating function in capital structure valuation mechanisms. Within the consumer cyclicals sector, particularly during volatility spikes, investors increasingly emphasize earnings capacity over leverage metrics, consequently reducing the valuation impact of capital structure decisions as profitability escalates. The weakening effect can be explained through the Pecking Order Theory, where highly profitable firms prefer internal financing and thus reduce reliance on debt. In this condition, leverage no longer provides incremental benefits, causing the relationship between capital structure and firm value to weaken as profitability rises. According to Pecking Order Theory, this condition reduces reliance on debt, so additional leverage no longer increases the company's perceived value. Theoretically and empirically, investors believe that highly profitable companies don't need aggressive financing strategies.

### **The Influence of Profitability in Moderating the Relationship Between Investment Decisions and Firm Value**

Empirical analysis establishes that profitability fails to significantly moderate the investment decisions-firm value relationship, resulting in Hypothesis 5 rejection. This finding corresponds with research by (Melina & Endri, 2025) and (Arifin & Munandar, 2024) which suggests that the combination of a high Price Earnings Ratio (PER) with strong profitability fundamentals cannot represent a corporation's positive growth prospects. Furthermore, (Melina & Endri, 2025) explain that although a high Return on Assets (ROA) reflects efficient asset management and can attract investor interest, this condition does not automatically strengthen the influence of investment decisions on company value. According to Signaling Theory, information conveyed by companies to external parties, especially investors, plays a crucial role in shaping market perceptions of company value. Investment decisions are often considered a positive signal

regarding the company's growth prospects and sustainability (Arifin & Munandar, 2024). Despite high profitability, investors remain skeptical about the ability of investments to generate sustainable growth in a sector that is highly sensitive to economic cycles. From a signaling theory perspective, the profit signal is not strong enough to reinforce the investment signal. As a result, profitability fails to bridge investment decisions with increased firm value.

### **The Influence of Profitability in Moderating the Relationship Between Firm Size and Firm Value**

Statistical testing confirms profitability's insignificant moderating role in the firm size-valuation relationship, leading to Hypothesis 6 rejection. This outcome aligns with (Alghifari et al., 2024) and (Tubastuvi et al., 2023), who similarly documented the limited efficacy of profitability in this contextual relationship. Although signaling theory posits that strong profitability should enhance corporate quality perceptions, its empirical impact remains insufficient to strengthen the size-valuation linkage. In the consumer cyclicals sector, investors are more concerned with efficiency, adaptability, and performance indicators than with scale. As a result, even highly profitable large firms do not experience stronger valuation effects, since size does not represent competitive advantage in an asset-light, demand-driven environment (Alghifari et al., 2024). According to Pecking Order Theory, this condition reduces reliance on debt, so additional leverage no longer increases the company's perceived value. Theoretically and empirically, investors perceive that highly profitable companies do not require aggressive financing strategies. Therefore, the relationship between capital structure and firm value weakens as profitability increases.

### **CONCLUSION**

This study confirms that capital structure is a key determinant of firm value in the consumer sector, in line with the Trade-Off Theory, which emphasizes the importance of balancing the benefits of debt use with financial risk. However, profitability is shown to act as a moderating variable, increasing the influence of capital structure on firm value. These findings suggest that leverage does not always work more effectively in companies with high profitability, thus providing new empirical evidence that complements previous research. Meanwhile, investment decisions and firm size do not significantly influence firm value. These results support the perspectives of Pecking Order Theory, which indicate that during the post-pandemic recovery period, the market tends to be more sensitive to the quality of the financing structure than to investment expansion or the scale of a company's operations. In terms of contribution, this study makes a theoretical contribution by validating the moderating dynamics of profitability in the relationship between capital structure and firm value, and enriches the financial literature with empirical evidence on capital market behavior in the cyclical consumer sector in the post-pandemic period. Empirically, these findings illustrate that financing decisions are a key factor investors consider when assessing companies in an unstable economic environment. Practically, the results of this study imply that companies need to carefully optimize their financing structures by considering the level of profitability and financial risks inherent in debt use. For investors, leverage can be a key indicator in investment decision-making, particularly in cyclical sectors. Furthermore, for regulators and capital market authorities, these conclusions emphasize the importance of policies that promote transparency and stability in corporate financing structures to maintain market confidence and minimize systemic risk.

This study has several limitations, including the limited scope of industries within the consumer sector, the relatively limited number of research variables, and the short observation period. These limitations open up opportunities for further research to develop broader and more in-depth studies. Based on these limitations, further research is recommended to expand the scope of industrial sectors to enhance the generalizability of the results. Furthermore, future research could include macroeconomic and financial risk variables, such as inflation, interest rates, market volatility, and liquidity risk, to capture the influence of external factors on company value.

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