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The Determinants of Capital Structure in Indonesian Hotel Operated Firms

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Capital Structure; Profitability; Growth Opportunities; Hotel Firms; Panel Data Regression.

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Abstract

Capital structure remains a critical issue in corporate finance, as the balance between debt and equity financing influences financial risk, firm value, and long-term financial sustainability. Although trade-off theory, pecking order theory, and agency theory provide established theoretical explanations for corporate financing decisions, sector-specific empirical evidence concerning Indonesia's capital-intensive hospitality industry during the post-pandemic recovery period remains limited. This study aimed to examine the effects of profitability, liquidity, growth opportunities, cash flow volatility, institutional ownership, and firm size on the capital structure of Indonesian hotel companies listed on the Indonesia Stock Exchange (IDX) from 2022 to 2025. A quantitative explanatory research design was employed using balanced panel data regression involving 21 hotel companies selected through purposive sampling, yielding 84 firm-year observations. Model selection using the Lagrange multiplier (LM) test supported the random-effects model (REM) as the preferred estimator, and diagnostic tests were conducted to assess normality, multicollinearity, autocorrelation, and heteroscedasticity. The regression results yielded an adjusted coefficient of determination (adjusted R^2) of 0.2279, indicating that the model explained approximately 22.79% of the variation in capital structure. The model was statistically significant overall ($p = 0.000193$). Among the six explanatory variables, only profitability and growth opportunities exhibited statistically significant relationships with capital structure. Profitability demonstrated a significant negative relationship, consistent with pecking order theory, whereas growth opportunities exhibited a significant positive relationship, consistent with trade-off theory. Conversely, liquidity, cash flow volatility, institutional ownership, and firm size did not demonstrate statistically significant relationships with capital structure. These findings suggested that industry-wide uncertainty and financial pressures during the post-pandemic recovery period may have influenced the relevance of conventional firm-specific determinants of capital structure. The results further indicated that Indonesian hotel companies tended to rely on internally generated funds while selectively utilizing debt financing to support growth opportunities. This study provides practical insights for corporate managers, investors, and policymakers regarding financing decisions and capital structure management in Indonesia's hospitality industry.

INTRODUCTION

Capital structure is a fundamental aspect of corporate finance, as the balance between debt and equity financing influences financial risk, firm value, and long-term financial sustainability. Although trade-off theory, pecking order theory, and agency theory provide established theoretical frameworks for explaining corporate financing decisions, empirical evidence suggests that capital structure is also influenced by industry-specific characteristics and corporate governance mechanisms (Bayuny & Haron, 2023; Bayuny et al., 2024; Cahyono & Chawla, 2019; Mahmoud et al., 2023; Panchal & Chand, 2024). Accordingly, this study focused on Indonesian hotel companies listed on the Indonesia Stock Exchange (IDX) during the post-pandemic recovery period from 2022 to 2025.

Publicly listed hotel companies are particularly relevant to capital structure research because of their capital-intensive operations, substantial exposure to fluctuations in tourism demand, and compliance with IDX financial disclosure requirements (Sainaghi et al., 2019; Vidali et al., 2024). Their financing decisions provide valuable insights into how profitability, liquidity, growth opportunities, cash flow volatility, institutional ownership, and firm size are associated with financial leverage. Capital structure is also closely related to long-term financial sustainability, as excessive reliance on debt financing may constrain financial flexibility and increase financial distress risk, whereas an appropriate balance between debt and equity can support strategic investments, including sustainability-oriented and environmentally responsible initiatives.

Previous studies have indicated that profitability and liquidity are generally negatively associated with corporate leverage, consistent with the predictions of pecking order theory (Febrianti et al., 2024; Simatupang et al., 2019; Wulandari & Wulandari, 2024). For example, Christina and Halim (2008) found that profitable Indonesian companies across various industries tended to prioritize internally generated funds over debt financing, while Sutrisno (2016) reported a statistically significant negative relationship between profitability and leverage among manufacturing companies. Similarly, Mardani et al. (2023) found that profitability negatively influenced capital structure among publicly listed Indonesian companies. However, empirical findings regarding firm size, growth opportunities, and corporate governance have remained inconsistent across industries and national contexts. Kamila and Gandakusuma (2021) identified a positive relationship between growth opportunities and financial leverage, consistent with trade-off theory, whereas Albart et al. (2020) reported significant relationships between ownership structure and capital structure that varied across industries. Hospitality companies may exhibit distinct financing patterns because of their substantial investments in fixed assets, seasonal fluctuations in demand, exposure to market volatility, and long-term capital expenditure requirements (Ainiyyah, 2017; Jati, 2017; Yanti et al., 2022b). Despite these theoretical and empirical contributions, research specifically examining the determinants of capital structure among Indonesian hotel companies during the post-pandemic recovery period remains limited. In particular, the combined relationships of profitability, liquidity, growth opportunities, cash flow volatility, institutional ownership, and firm size with financial leverage among IDX-listed hotel companies have not been sufficiently explored using panel data regression. Addressing this research gap is particularly important because the 2022–2025 period represented a critical phase of financial recovery and capital structure adjustment following the economic disruptions caused by the COVID-19 pandemic.

Understanding corporate financing decisions during this period could provide insights into financial resilience, capital allocation, and sustainable business recovery within Indonesia's hospitality industry. Accordingly, this study examined the relationships between these six determinants and capital structure using a random-effects panel regression model to account for unobserved firm-specific heterogeneity. By integrating firm-level financial characteristics and institutional ownership within a sector-specific analytical framework, the study sought to extend the empirical application of trade-off theory and pecking order theory to the hospitality industry in an emerging-market economy. The findings were expected to provide practical implications for corporate managers, investors, and regulators regarding financial stability, capital structure optimization, and sustainable financing decisions.

METHOD

Research Design

This study employed a quantitative explanatory research design to examine the determinants of capital structure (Y) among Indonesian hotel companies listed on the Indonesia Stock Exchange (IDX). The analysis focused on testing the relationships between firm-specific financial characteristics and capital structure within the theoretical frameworks of trade-off theory, pecking order theory, and agency theory (Mardani et al., 2023; Sutrisno, 2016). A balanced panel data approach was employed, combining cross-sectional observations of hotel companies with annual financial data covering four fiscal years (2022–2025). Panel data regression was used to examine variations across firms and over time while accounting for unobserved, time-invariant firm-specific heterogeneity (Baltagi, 2021; Wooldridge, 2010). This approach enabled an assessment of capital structure determinants during the post-pandemic recovery period in Indonesia's hospitality industry (Apriliana & Ulpah, 2021; Yanti et al., 2022a).

Data Collection Method

The dataset is compiled entirely from secondary documentation, with all financial, operational, and ownership metrics gathered from fully audited annual financial reports and corporate governance disclosures on the official IDX electronic registry (www.idx.co.id). Individual financial statement footnotes were manually examined using standardized spreadsheets to ensure data alignment and reliability (Brooks, 2019; Hair et al., 2019), and supplementary macroeconomic indicators were verified against Bank Indonesia (BI) and Badan Pusat Statistik (BPS) databases.

Population and Purposive Sampling Parameters

The population comprises all listed corporations under the tourism, hotel, and hospitality classifications on the IDX for 2022-2025. This study applies purposive sampling based on four filtration criteria: sector alignment (firms must be classified under hotel operations/resorts on the IDX, excluding aviation, travel agencies, property developers, or restaurant chains without lodging assets); temporal continuity (listed and actively traded throughout 2022-2025 without IPOs, delisting, mergers, or suspension); reporting transparency (fully audited annual statements consistently published in IDR); and data completeness (complete disclosure of institutional equity, cash flow, and accounting data required for the regression model).

Table 1. Sample Filtration

Criteria	Number of Entities
Listed on IDX under subindustry Hotel, Resort and Cruise Line (E512)	27
Listed continuously for the full period 2022-2025	26
Published fully audited financial statements for 2022-2025	21
Final sample used in this research	**21**

Applying these criteria to an initial population of 27 firms under subindustry E512 (Hotel, Resort and Cruise Line), 5 firms were excluded for incomplete financial reporting and 1 firm for listing after 2024, yielding a final sample of 21 companies and a balanced panel of 84 firm-year observations (21 companies × 4 years).

Operational Definition of Variables

The dependent variable, Capital Structure (Y), is measured using the Total Debt Ratio (Total Liabilities / Total Assets). The six independent variables are Profitability (X1), measured via Return on Assets (Profit or Loss / Total Assets); Liquidity (X2), measured via the Current Ratio (Current Assets / Current Liabilities); Growth Opportunities (X3), measured as the annual percentage change in total revenue; Cash-Flow Volatility (X4), measured as the standard deviation of operating cash flow relative to its mean over the four-year period; Institutional Ownership (X5), measured as the proportion of shares held by institutional entities to total outstanding shares; and Firm Size (X6), measured as the natural logarithm of total assets.

Data Analysis Techniques

Panel Data Regression Specification

Panel data regression requires evaluation across three competing frameworks - the Common Effect Model (CEM), Fixed Effects Model (FEM), and Random Effects Model (REM) (Baltagi, 2021; Wooldridge, 2010). However, because Cash-Flow Volatility (X4) and Institutional Ownership (X5) exhibit constant values for individual firms across the four-year period, the FEM's within-transformation reduces their variance to zero, causing perfect collinearity with firm-specific intercepts and making FEM mathematically invalid for this design. The evaluation is therefore limited to CEM (pooling all observations with uniform intercept and slopes) versus REM (treating firm differences as random draws captured in a composite error term uncorrelated with the independent variables, allowing estimation of time-invariant parameters).

Because FEM is excluded, the Chow and Hausman (1978) tests are inapplicable; model selection between CEM and REM instead relies exclusively on the Lagrange Multiplier (LM) Test developed by Breusch and Pagan (1980), which tests whether random individual variances are present in the residual pool. The resulting static panel regression equation is specified as: $Y = \beta0 + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4 + \beta5X5 + \beta6X6 + \varepsilon$, where Y is Capital Structure (TDR), X1-X6 are the six determinants described above, β0 is the constant intercept, β1...β6 are the regression coefficients, and ε is the idiosyncratic error term.

Classical Assumption Tests

To ensure the model yields Best Linear Unbiased Estimators (BLUE), four diagnostic tests are applied (Gujarati & Porter, 2009; Brooks, 2019): the Normality Test (Jarque-Bera statistic; Jarque & Bera, 1987), the Multicollinearity Test (correlation matrix among predictors,

with a threshold below 0.9), the Autocorrelation Test (Durbin-Watson or Breusch-Godfrey LM test; Breusch, 1978; Durbin & Watson, 1950), and the Heteroscedasticity Test (Breusch-Pagan-Godfrey or White test, with White's robust standard errors applied if heteroscedasticity is present; White, 1980).

Hypothesis Evaluation Testing

Once structural validity is confirmed, hypotheses H1 through H6 are tested using the Adjusted Coefficient of Determination (Adjusted R^2, measuring the proportion of variance in capital structure explained by the six predictors), the F-test (simultaneous significance of the full model), and the t-test (individual coefficient significance at the 5% level).

Required Materials and Equipment

The study was conducted using a standard business-tier workstation with cloud backup, EViews (Version 13) as the primary econometric software for panel regression and diagnostic testing, Microsoft Excel for data compilation and organization, and Turnitin for plagiarism screening prior to submission.

RESULTS AND DISCUSSION

Data Description and Sample Overview

The empirical analysis is based on a refined sample of 21 companies listed on the IDX under the "hotel, resort and cruise line" subindustry (E512), covering the four-year period 2022-2025 and yielding a balanced panel of 84 total observations. The sample includes well-known hospitality operators such as Jakarta International Hotels & Developments (JIHD, Hotel Borobudur Jakarta), Jakarta Setiabudi International (JSPT, Hyatt Regency Yogyakarta and Grand Hyatt Bali), MNC Land (KPIG, Park Hyatt Jakarta and Westin Resort Bali), and Bukit Uluwatu Villa (BUVA, Alila Villas Uluwatu), among others, ensuring sectoral homogeneity for the descriptive and econometric analyses that follow.

Descriptive Statistical Analysis

Table 2. Descriptive Statistical Analysis (N = 84)

	Y	X1	X2	X3	X4	X5	X6
Mean	0.3437	-0.0042	5.1838	0.1577	-0.0635	0.5594	27.2195
Median	0.3060	-0.0074	1.2032	0.1542	0.8302	0.5892	26.9081
Maximum	1.0863	0.1086	91.2455	0.8464	1.8560	0.9306	31.2144
Minimum	0.0026	-0.1263	0.0483	-0.6239	-15.5271	0.0000	25.0412
Std. Dev.	0.2636	0.0410	14.8462	0.2598	3.6062	0.2741	1.4704
Observations	**84**	**84**	**84**	**84**	**84**	**84**	**84**

Y = Capital Structure; X1 = Profitability; X2 = Liquidity; X3 = Growth; X4 = Cash-Flow Volatility; X5 = Institutional Ownership; X6 = Firm Size.

With a mean leverage ratio of approximately 34.37%, sampled firms funded roughly one-third of their assets through debt, with positive skewness (1.09) indicating concentration toward lower debt levels, though firms such as Hotel Sahid Jaya (SHID) and Pudjiadi & Sons (PNSE) carried higher-than-average debt ratios. The negative mean profitability (-0.42%) indicates that, on average, sampled hotel firms operated at a slight loss during the recovery period, reflecting broader sectoral strain. Liquidity (X2) showed substantial dispersion (std. dev. 14.85) with extreme kurtosis (21.29) and skewness (4.32), indicating outlier firms - such as Island Concepts Indonesia (ICON) and Planet Propertindo Jaya (PLAN) - that maintained

markedly higher liquidity buffers than others. Cash-Flow Volatility (X4) likewise showed substantial instability (std. dev. 3.61), reflecting the unpredictable post-pandemic recovery. Jarque-Bera probability values for Y, X2, X4, X5, and X6 fall below 0.05, rejecting normality and confirming heterogeneity across the sample - a structural characteristic that validates the study's reliance on the Random Effects Model (REM), which is well-suited to accommodate firm-specific idiosyncrasies rather than assuming sector-wide homogeneity.

Econometric Model Selection Diagnostics

Because the Fixed Effects framework was mathematically excluded due to time-invariant constraints in X4 and X5, model selection focused on comparing the Common Effect Model (CEM) against the Random Effects Model (REM) using the Lagrange Multiplier (LM) Test.

Table 3. Lagrange Multiplier Test

Statistic	Cross-section	Time	Both
Breusch-Pagan (χ^2)	82.1855 (p = 0.0000)	1.9604 (p = 0.1615)	84.1459 (p = 0.0000)

The LM test yielded a cross-sectional Breusch-Pagan chi-square statistic of 84.1459 (p = 0.0000), well below the 0.05 threshold, rejecting the null hypothesis that individual firm effects are nonexistent. This confirms the presence of significant random individual effects and validates the use of REM over a pooled approach, ensuring the subsequent regression results properly account for idiosyncratic firm-specific traits such as governance and operational variance (Baltagi, 2021; Gujarati & Porter, 2009).

Classical Assumption Test Results

The Jarque-Bera normality test indicates that some variables exhibit non-normal residual distributions, a pattern commonly observed in panel data affected by structural shocks such as the COVID-19 pandemic and subsequent recovery (Mardani et al., 2023; Sutrisno, 2016; Verma & Gustafsson, 2020; Yanti et al., 2022a). Consistent with Wooldridge (2010) and Baltagi (2021), REM remains robust to minor deviations from normality as sample size increases, so the observed non-normality is treated as an empirical reflection of industry instability rather than a modeling failure, and the regression results remain valid for hypothesis testing.

The multicollinearity test, assessed through the correlation matrix among the six independent variables, found all pairwise correlation coefficients well below the 0.9 threshold, with the highest observed coefficient at only 0.24 (between X1 and X4). This confirms that the independent variables are statistically independent and that the regression model is free from serious multicollinearity, ensuring that estimated coefficients robustly reflect each variable's unique contribution to capital structure.

Hypothesis Testing and Empirical Results

Using the REM framework, the regression analysis yields an Adjusted R-squared of 0.2279, indicating that approximately 22.79% of the variance in capital structure is explained by the six independent variables, with the remaining 77.21% attributable to factors outside the study's scope, such as macroeconomic fluctuations and firm-specific management decisions - a substantial figure given the sector's operational volatility during 2022-2025. The F-test yields a Prob(F-statistic) of 0.000193, well below 0.05, confirming that the six variables collectively exert a statistically significant simultaneous influence on capital structure.

Table 4. Hypothesis Testing Results (Random Effects Model)

Variable	Coefficient	Prob.	Result
C (constant)	0.274311	-	-
X1 - Profitability	-1.510664	0.0000	Significant
X2 - Liquidity	-0.003716	0.0785	Not significant
X3 - Growth Opportunities	0.080299	0.0299	Significant
X4 - Cash-Flow Volatility	0.008366	0.5533	Not significant
X5 - Institutional Ownership	-0.013104	0.9150	Not significant
X6 - Firm Size	0.002847	0.9270	Not significant

Based on these results, the estimated regression model is:

$Y = 0.274311 - 1.510664(X1) - 0.003716(X2) + 0.080299(X3) + 0.008366(X4) - 0.013104(X5) + 0.002847(X6)$

Only Profitability (X1) and Growth Opportunities (X3) are statistically significant at the 5% level, confirming a reliable negative effect of profitability and a positive effect of growth on capital structure, while Liquidity, Cash-Flow Volatility, Institutional Ownership, and Firm Size all produced p-values above 0.05 and therefore exert no statistically significant individual influence, as summarized in Table 5.

Table 5. Summary of Hypothesis Testing Results

Hypothesis	Relationship	Result
H1	Profitability (X1) → Capital Structure (Y)	Supported
H2	Liquidity (X2) → Capital Structure (Y)	Not Supported
H3	Growth (X3) → Capital Structure (Y)	Supported
H4	Volatility (X4) → Capital Structure (Y)	Not Supported
H5	Inst. Ownership (X5) → Capital Structure (Y)	Not Supported
H6	Firm Size (X6) → Capital Structure (Y)	Not Supported

The REM results indicate that during the post-pandemic recovery phase (2022-2025), the capital structure of IDX-listed hotel firms was predominantly anchored by internal profitability, while traditional determinants such as firm size, cash-flow volatility, and institutional ownership showed limited statistical influence, departing from established theoretical expectations.

The Primacy of Internal Funding (Pecking Order Theory)

The significant negative relationship between Profitability (X1) and leverage (coefficient -1.510664, $p < 0.01$) provides robust support for Pecking Order Theory, consistent with Christina and Halim (2008), Mardani et al. (2023), and Werdaningtyas et al. (2025), who similarly found that Indonesian firms sharply reduce debt as internal profits rise. This suggests that hotel operators prioritized retaining internal earnings to rebuild financial autonomy and avoid the information costs of external credit following the pandemic shock

Growth Opportunities and External Financing

The positive and significant coefficient for Growth Opportunities (0.080299, $p < 0.05$) supports Hypothesis H3 and aligns with Trade-Off Theory: as hotel firms pursued expansion during the recovery, internal cash flow alone was often insufficient to cover capital expenditure, compelling firms to leverage their high asset tangibility (particularly prime real estate) to secure external debt - consistent with Kamila and Gandakusuma (2021) and Mardani

et al. (2023). Notably, growth remained a resilient driver of leverage even as other traditional variables lost explanatory power during this volatile period.

Theoretical Deviations in the Post-Pandemic Context

The insignificance of Liquidity, Cash-Flow Volatility, Institutional Ownership, and Firm Size marks a notable departure from broader Indonesian corporate finance literature and can be attributed to four contextual factors. First, erosion of collateral and scale utility under Trade-Off Theory: the post-pandemic devaluation of hotel real estate likely neutralized the collateral advantage historically associated with firm size (contradicting Christina & Halim, 2008). Second, prioritization of survival over financial optimization: acute financial pressure during 2022-2025 likely pushed hotels into a persistent survival mode in which cash-flow volatility - found significant in manufacturing by Sutrisno (2016) - became insignificant background noise, as continuity concerns superseded the theoretical balancing of tax shields against distress costs. Third, governance neutrality under crisis: although Albart et al. (2020) documented significant ownership effects, this study finds none, suggesting that institutional monitoring was neutralized as owners and managers converged on immediate sectoral survival rather than long-term leverage optimization. Fourth, operational noise and empirical constraints: the extreme idiosyncratic variance evident in the descriptive statistics - unpredictable shifts in occupancy, interest rates, and policy - likely masked subtler, longer-term relationships predicted by financial theory.

Taken together, these findings indicate that the 2022-2025 period did not favor traditional "rule-bound" corporate financing models; instead, financing choices in the Indonesian hospitality industry relied heavily on internal profitability and growth, as intense post-pandemic financial strain limited the explanatory relevance of both Trade-Off Theory and Agency Theory.

CONCLUSION

This study examined the determinants of capital structure among 21 hotel companies listed on the Indonesia Stock Exchange (IDX) during the post-pandemic recovery period from 2022 to 2025 using a random-effects model (REM). The findings indicated that profitability and growth opportunities were the primary determinants of financial leverage. Profitability exhibited a statistically significant negative relationship with leverage, consistent with pecking order theory, suggesting that more profitable companies tended to prioritize internally generated funds and reduce their reliance on external debt financing. Conversely, growth opportunities demonstrated a statistically significant positive relationship with leverage, consistent with trade-off theory, indicating that companies with greater growth opportunities were more likely to utilize debt financing to support business expansion. Liquidity, cash flow volatility, institutional ownership, and firm size did not exhibit statistically significant relationships with leverage. These findings suggested that industry-wide uncertainty and financial pressures associated with the post-pandemic recovery may have influenced the relevance of conventional firm-specific determinants of capital structure. Overall, profitability and growth opportunities emerged as the most significant factors associated with capital structure decisions among Indonesian hotel companies during the recovery period.

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CONFLICT OF INTEREST

The authors declare that there are no personal, commercial, financial, or other conflicts of interest that could influence the objectivity or integrity of the research findings.

AUTHOR CONTRIBUTIONS

All authors contributed equally to all stages of the research process, including the development of the research ideas and concepts, data collection and analysis, as well as the preparation, revision, and finalization of the manuscript.

GENERATIVE AI STATEMENT

During the preparation of this manuscript, the authors used Artificial Intelligence (AI) tools in a limited capacity solely for grammar checking and language refinement. AI was not used for data collection, substantive data analysis, interpretation of findings, or the formulation of research conclusions. (Daraojimba et al., 2023)

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