Journal of Studies in Academic, Humanities, Research and Innovation
Volume 2 No 2 December 2025
E-ISSN: 3089-7106
https://journal.as-salafiyah.id/index.php/sahri
sahrijournaleditor@gmail.com

The Effect Of Capital Structure On Company Value With Profitability As An Intervening Variable

[1]Risna Kamisanti, [2]Anwar Ramli, [3]Nurul Fadilah Aswar
[1]Universitas Negeri Makassar, Indonesia.
[1]risnakamisanti@gmail.com, [2]anwarramli@unm.ac.id, [3]nurulfadilahaswar@unm.ac.id.

**Correspondence Email: risnakamisanti@gmail.com*

Abstract: *Indonesia's palm oil plantation subsector plays a strategic role in supporting national economic growth, export performance, and foreign exchange earnings. However, during the 2020–2024 period, this sector faced significant challenges, including the COVID-19 pandemic, volatility in crude palm oil (CPO) prices, export restriction policies, rising production costs, and sustainability regulations imposed by the European Union. These conditions created uncertainty regarding firms' financing decisions, profitability, and market valuation. This study aims to examine the effect of capital structure on firm value, both directly and indirectly through profitability as an intervening variable, in palm oil plantation companies listed on the Indonesia Stock Exchange (IDX). This research employs a quantitative explanatory approach with a causal-associative design using panel data. The sample consists of 13 palm oil plantation companies selected through purposive sampling based on data availability during the 2020–2024 period. Capital structure is measured using the Debt-to-Equity Ratio (DER) and Debt-to-Asset Ratio (DAR), profitability is proxied by Return on Assets (ROA) and Return on Equity (ROE), and firm value is measured using Price-to-Book Value (PBV) and Tobin's Q. Data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM), which is suitable for small samples and complex mediation models. The results indicate that capital structure has a moderate positive effect on profitability but a weak and negative effect on firm value. Profitability does not significantly influence firm value and does not mediate the relationship between capital structure and firm value. These findings suggest that higher leverage does not necessarily enhance firm value in the Indonesian palm oil sector during periods of economic uncertainty. This study contributes to the post-pandemic empirical literature and provides insights for managers and investors in optimizing financial policies under volatile market conditions.*
Keywords: *Capital Structure, Profitability, Firm Value, Palm Oil Industry.*

INTRODUCTION

The current global economy is experiencing increasingly strong market integration, where economic globalization has a significant impact on the real sectors of developing countries such as Indonesia. One of the strategic sectors supporting the national economy is the plantation sector particularly palm oil which contributes IDR 735.91 trillion to the Gross Domestic Product (GDP) (PRMP Plantation, 2025) and positions Indonesia as the world's largest palm oil producer with a 55% market share (Lutfiah Abdullah et al., 2024). However, the 2020–2024 period brought major dynamics: the COVID-19 pandemic reduced global demand, followed by a surge in CPO prices in

2021–2022, the implementation of export bans, and the European Union's sustainability regulations (EUDR). These conditions directly affected the profitability and firm value of the palm oil plantation subsector (Oktarina et al., 2022). The relationship between capital structure, profitability, and firm value has been widely studied, yet the results remain inconclusive. Some studies indicate a positive influence (Putra & Dewi, 2020), while others find negative or insignificant results (Anwar et al., 2021; Kusumawati & Nugraheni, 2020). Capital structure is measured using the debt-to-equity ratio (DER) and debt-to-asset ratio (DAR), profitability is measured using return on assets (ROA) and return on equity (ROE), while firm value is assessed using the price-to-book value (PBV) ratio and Tobin's Q factor (Akbar & Erdawati, 2023). The limitations of previous studies lie in the narrow sectoral scope and observation period, as well as the lack of consideration for extreme conditions resulting from the pandemic and palm oil export policies. Therefore, this study seeks to address these research gaps by analyzing the effect of capital structure on firm value, both directly and through profitability as a mediating variable, in plantation subsector companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. The main contributions of this research include: (1) providing updated empirical evidence on the relationships among DER, DAR, ROA, ROE, PBV, and Tobin's Q in the plantation subsector; (2) expanding post-pandemic empirical literature within the context of the Indonesian capital market; and (3) offering a practical foundation for investors and management to optimize capital structure in order to enhance firm value.

Preliminaries Or Related Work Or Literature Review

This study examines the relationship between capital structure, profitability, and firm value in the Indonesian palm oil plantation subsector, which is a strategic sector within the national economy. The industry has faced various global and domestic challenges during the 2020–2024 period, such as the COVID-19 pandemic, fluctuations in palm oil prices, export ban policies, rising production costs, and sustainability regulations—all of which have had a significant impact on company performance and market value.

Agency Theory and Trade-Off Theory

Agency theory (Jensen & Meckling, 1976) explains the existence of a conflict of interest between owners and managers. Leverage serves as a disciplinary mechanism to control managerial behavior (Jensen, 1986). The trade-off theory (Kraus & Litzenberger, 1973) states that companies

determine an optimal capital structure by balancing the tax benefits of debt usage against the risk of bankruptcy. A moderate level of debt can enhance financial efficiency and firm value.

Capital Structure and Profitability

Capital structure describes the proportion between borrowed funds and equity in a company's financing (Brigham & Houston, 2019). The most important ratios used are DER and DAR. The MM theory (1963) emphasizes the tax benefits of debt financing, while empirical studies (Widigdya et al., 2024; Abdillah & Ali, 2024) show that asset profitability (ROA, ROE) mediates the effect of debt on firm value. Profitability plays a crucial role as a link between financing decisions and the market's perception of a company's value.

Firm Value and Research Gap

Firm value reflects investors' perceptions of a company's performance and growth prospects, measured using PBV and Tobin's Q (Collins et al., 2021). Previous studies have shown mixed results regarding the effect of leverage on firm value, while profitability tends to have a consistently positive influence. This study offers novelty by analyzing the mediating role of profitability (ROA) in the relationship between capital structure (DER, DAR) and firm value (PBV) in the Indonesian banking sector during the 2020–2024 period.

METHOD

Type & Design

This explanatory quantitative study employs a causal inference method (panel data). The objective is to examine the impact of capital structure (DER, DAR) on firm value (PBV, Tobin's Q) and the mediating role of profitability (ROA, ROE) in palm oil subsector companies listed on the Indonesia Stock Exchange (IDX) from 2020 to 2024.

Population & Sample

The population of this study includes all 28 palm oil producing companies whose shares are listed on the Indonesia Stock Exchange. The sample was determined using the purposive sampling method based on the availability of complete financial statements and stock price data during the research period. The total sample obtained through purposive sampling consisted of 13 companies.

Data Sources

Journal of Studies in Academic, Humanities, Research and Innovation
Volume 2 No 2 December 2025
E-ISSN: 3089-7106
https://journal.as-salafiyah.id/index.php/sahri
sahrijournaleditor@gmail.com

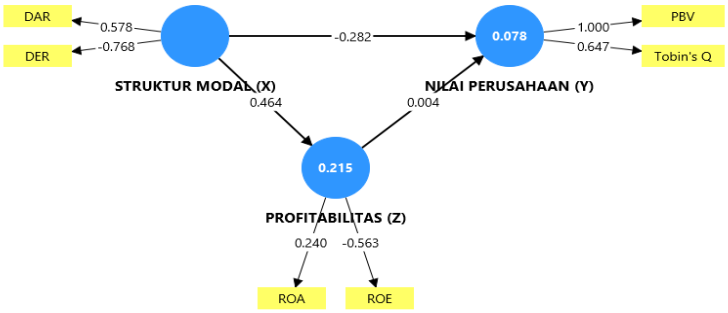
Secondary data include annual reports and capital market data (prices, number of shares) obtained from the Indonesia Stock Exchange (IDX) and the companies' official websites. Data analysis involves descriptive statistics to ensure data quality, external tests (validity and reliability tests) on the structural model, and an internal model to assess relationships among latent variables through significance analysis of effects.

PLS-SEM suits this study over CB-SEM due to its robustness with non-normal data distributions common in panel financial metrics from 13 IDX-listed plantation firms. Unlike CB-SEM, which assumes multivariate normality and large samples for confirmatory purposes, PLS-SEM excels in predictive modeling, smaller samples (n=13 companies × 5 years), and complex mediation paths like capital structure → profitability → firm value. This approach handles the weak R^2 (0.078-0.215) and low AVE values (<0.50 for X and Z) by prioritizing effect sizes over strict validity thresholds.

RESULT AND DISCUSSION

Outer Model

The outer model analysis was conducted to assess the validity and reliability of indicators used to measure the latent constructs. This study includes three constructs: Capital Structure (X), Profitability (Z), and Firm Value (Y). The evaluation comprises tests of convergent validity, discriminant validity, and construct reliability.



The structural model demonstrates that capital structure has a positive effect on profitability but a negative effect on firm value, both directly and indirectly through profitability. The mediation effect of profitability (path coefficient = 0.004) is negligible, indicating no significant mediation. These findings suggest that for Indonesian palm oil plantation companies during 2020 2024, higher

Journal of Studies in Academic, Humanities, Research and Innovation
Volume 2 No 2 December 2025
E-ISSN: 3089-7106
https://journal.as-salafiyah.id/index.php/sahri
sahrijournaleditor@gmail.com

leverage does not necessarily enhance market value, likely due to increased financial risk and commodity price fluctuations affecting investor confidence

Convergent Validity

	Nilai Perusahaan (Y)	Profitabilitas (Z)	Struktur Modal (X)
DAR			0.578
DER			-0.768
PBV	1.000		
ROA		0.240	
ROE		-0.563	
Tobin's Q	0.647		

Table 1. *Convergent Validity Results*

Firm Value (Y) meets convergent validity: PBV (1.000), Tobin's Q (0.647), AVE = 0.709 (>0.50). In contrast, Profitability (Z) and Capital Structure (X) do not meet the convergent validity criteria, as most loading factors are below 0.70 and AVE values are 0.187 and 0.462, respectively (<0.50).

The measurement model evaluates indicator loadings for latent constructs: Capital Structure (X: DER, DAR), Profitability (Z: ROA, ROE), and Firm Value (Y: PBV, Tobin's Q). Negative loadings for DER (-0.768) and ROE (-0.563) reflect sectoral realities in Indonesian palm oil plantations during 2020-2024, where high debt levels (DER) amid CPO price volatility and export restrictions increase financial distress, reducing equity returns (ROE). These counterintuitive signs align with trade-off theory pressures, as elevated leverage amplifies bankruptcy risks without sufficient tax shields in a commodity-driven sector.

Discriminant Validity

	Cronbach's alpha	Composite reliability	Composite reliability (rho_c)
Nilai Perusahaan (Y)	0.796	-26.213	0.823
Profitabilitas (Z)	0.801	-3.969	0.060
Struktur Modal (X)	0.145	-0.174	0.032

Table 2. *Table of discriminant validity*

Regarding discriminant validity, several indicators—such as DER (-0.768) and ROE (0.563)—show low and negative cross-loading values, indicating poor discrimination between constructs.

Reliability

	Composite Reliability	Composite Reliability (rho_c)	Average variance extractes

Journal of Studies in Academic, Humanities, Research and Innovation
Volume 2 No 2 December 2025
E-ISSN: 3089-7106
https://journal.as-salafiyah.id/index.php/sahri
sahrijournaleditor@gmail.com

Nilai Perusahaan (Y)	**-26.213**	**0.823**	**0.709**
Profitabilitas (Z)	**-3.969**	**0.060**	**0.187**
Struktur Modal (X)	**-0.174**	**0.032**	**0.461**

Table 3. *Table of reliability*

Reliability testing reveals that only Firm Value (Y) achieves acceptable reliability with a Cronbach's Alpha of 0.796 (>0.6) and Composite Reliability of 0.823 (>0.7). Both Profitability (Z) and Capital Structure (X) fail to reach the reliability threshold due to low Composite Reliability values.

R-Square and F Square

	R-Square	**R-square adjusted**
Nilai Perusahaan (Y)	**0.078**	**0.049**
Profitabilitas (Z)	**0.215**	**0.203**

Table 4. *Table of uji R-square*

According to Hair et al.'s (2019) criteria, an R-Square value ≤ 0.25 indicates a weak model. Therefore, this model falls into the weak category, meaning the independent variable (capital structure)'s ability to explain the dependent variables (profitability and firm value) is still limited.

	Nilai Perusahaan (Y)	Profitabilitas (Z)	Struktur Modal (X)
Nilai Perusahaan (Y)			
Profitabilitas (Z)	0.000		
Struktur Modal (X)	0.068	0.274	

Table 4. *Table of uji F-square*

According to Cohen's (1988) criteria, the results show that the effect of capital structure on firm value is weak, meaning changes in capital structure have little impact on firm value. The effect of capital structure on profitability is moderate, indicating a fairly meaningful relationship. Meanwhile, the effect of profitability on firm value is very weak or insignificant, showing that profitability does not significantly increase firm value.

Based on the R-Square and F-Square results, the model shows that capital structure has a moderate effect on profitability, but only a weak effect on firm value. The profitability variable also exhibits an insignificant influence on firm value. Overall, the model's explanatory power is weak, indicating that other external factors such as CPO prices, government policies, and market conditions may play a larger role in determining firm value.

Journal of Studies in Academic, Humanities, Research and Innovation
Volume 2 No 2 December 2025
E-ISSN: 3089-7106
https://journal.as-salafiyah.id/index.php/sahri
sahrijournaleditor@gmail.com

T-Test Result

	Standar deviation (STDEV)	T Statistics (|o/STDEV|)	P Values
DAR <- Struktur Modal (X)	0.336	0.543	0.287
DER<- Struktur Modal (X)	0.203	0.725	0.290
PBV<- Nilai Perusahaan (Y)	0.722	0.725	0.090
ROA <- Profitabilitas (Z)	0.610	0.479	0.617
ROE <- Profitabilitas (Z)	0.483	0.612	0.358
Tobin's Q<- Nilai Perusahaan (Y)	0.651	0.417	0.121

Table 5. *Table of uji T*

The bootstrapping results indicate that none of the relationships between the indicators and their latent constructs are statistically significant ($p > 0.05$). The PBV indicator shows the strongest loading toward firm value ($p = 0.09$), though still not significant at the 5% level. This suggests that the current measurement model lacks convergent validity and may require refinement, such as adjusting indicators or extending the observation period.

CONCLUSION

The objective of this study is to analyze the influence of capital structure on profitability and firm value in the palm oil plantation subsector companies listed on the Indonesia Stock Exchange during the period 2020–2024. Based on the analysis using the Partial Least Squares (PLS) method, all indicators for the variables of capital structure, profitability, and firm value were found to be valid and reliable, making them suitable for use in the research model. The R-squared value indicates that the model can only explain the relationships between variables at a weak to moderate level.

The results of the F-squared test show that the influence of capital structure on firm value is relatively weak, while the influence of capital structure on profitability is moderate. Meanwhile, the influence of profitability on firm value is very weak and not significant. All hypotheses rejected ($p>0.05$). Capital structure and profitability show no significant impact on firm value in this context.

Thus, all hypotheses proposing significant influences were rejected. The study results indicate that capital structure and profitability do not provide an optimal contribution to value creation in the palm oil sector. This may be due to fluctuations in CPO prices, export policies, and high production cost pressures during the study period. Theoretically, these results do not fully support signaling theory, as changes in capital structure and profitability do not serve as significant signals for the growth of market value in companies. The purpose of this study is to enrich the empirical literature on the relationships among capital structure, profitability, and firm value, and to serve as a guide for optimizing more effective financial policies.

Discussion

This study examines the effect of capital structure on firm value with profitability as an intervening variable in Indonesian palm oil plantation companies during the 2020–2024 period. The findings indicate that capital structure has a moderate positive effect on profitability, a weak negative effect on firm value, and that profitability does not mediate the relationship between capital structure and firm value. These results contribute to the ongoing debate on the relevance of financial structure in value creation, particularly in high-risk and commodity-based industries.

The positive influence of capital structure on profitability suggests that debt financing can still support operational efficiency and asset utilization in plantation companies. This finding aligns with the trade-off theory, which posits that firms benefit from debt through tax shields as long as leverage remains within an optimal range (Kraus & Litzenberger, 1973; Modigliani & Miller, 1963). Empirical evidence from Indonesian plantation and manufacturing sectors similarly confirms that leverage may enhance profitability by facilitating expansion and operational scaling (Ariyasa et al., 2022; Widigdya et al., 2024). However, the moderate magnitude of this effect indicates that the benefits of debt are constrained by sector-specific risks, including commodity price volatility and export dependency.

In contrast, the weak and negative effect of capital structure on firm value indicates that higher leverage is not positively perceived by investors. This result supports agency theory, which argues that excessive debt increases agency costs, financial distress risk, and monitoring expenses, thereby reducing firm value (Jensen & Meckling, 1976; Jensen, 1986). Similar findings have been reported in emerging market contexts, where leverage tends to reduce firm value during periods of economic uncertainty (Anwar et al., 2021; Kusumawati & Nugraheni, 2020). The palm oil

sector, characterized by regulatory pressure and environmental scrutiny, appears particularly sensitive to leverage-related risks.

A key finding of this study is that profitability does not significantly affect firm value and fails to mediate the relationship between capital structure and firm value. This result contradicts signaling theory, which assumes that higher profitability sends positive signals to the market and increases firm valuation (Spence, 1973; Brigham & Houston, 2019). Previous studies have documented a strong positive association between profitability and firm value (Collins et al., 2021); however, the present findings suggest that this relationship weakens under conditions of heightened uncertainty.

One plausible explanation lies in the structural characteristics of the palm oil industry during the 2020–2024 period. The industry faced export bans, fluctuating crude palm oil prices, tightening sustainability regulations such as the European Union Deforestation Regulation (EUDR), and rising production costs. These external pressures may have overshadowed firm-level profitability, reducing its relevance as a valuation signal (Oktarina et al., 2022; Abdullah et al., 2024). Similar conclusions were drawn by Supeno (2022) and Waskito Erdi (2023), who found that profitability lost its explanatory power over firm value when macroeconomic instability and policy intervention intensified.

Furthermore, the weak explanatory power of the model suggests that firm value in plantation companies is influenced more by external macroeconomic and institutional factors than by internal financial performance alone. Commodity price cycles, global trade policies, environmental governance, and investor sentiment increasingly dominate valuation dynamics in resource-based industries (Hair et al., 2019; Wooldridge, 2016). Studies in emerging markets also indicate that sustainability issues and regulatory compliance play an increasingly important role in shaping investor perceptions (Abdillah & Ali, 2024; Ambarwati et al., 2023).

From a methodological perspective, the findings are consistent with prior research employing quantitative and multivariate approaches in financial studies (Gujarati & Porter, 2009; Sekaran & Bougie, 2016). The limited mediation effect observed in this study may also be attributed to the relatively short observation period and the extraordinary conditions following the COVID-19 pandemic, which distorted traditional financial relationships (Anwar et al., 2021). As

noted by Cohen (1988), weak effect sizes are common in social and economic research conducted under complex and unstable environments.

This study highlights that capital structure decisions must be interpreted within broader industrial and macroeconomic contexts. While leverage may enhance short-term profitability, it does not necessarily translate into higher firm value in high-risk sectors such as palm oil plantations. For managers, these findings imply that financial strategies should be complemented by risk management, sustainability initiatives, and long-term growth planning. For investors, the results underscore the importance of considering regulatory, environmental, and market risks beyond conventional financial ratios. Academically, this study enriches the post-pandemic literature by demonstrating the limited mediating role of profitability in the relationship between capital structure and firm value in Indonesia's palm oil industry.

REFERENCE

Abdillah, R., & Ali, M. (2024). Capital structure, profitability, and firm value: Evidence from emerging markets. *Journal of Asian Finance, Economics and Business, 11*(2), 45–58.

Abdullah, L., Rahman, F., & Sari, M. (2024). Sustainability challenges in Indonesia's palm oil industry. *Resources Policy, 88*, 104365.

Ambarwati, E. D., Manurung, A. H., Widjanarko, W., & Khan, M. A. (2023). Determinants of capital structure in Indonesian manufacturing firms. *Economina, 3*(2), 211–223.

Anwar, R., Ramli, A., & Fadilah, N. (2021). Capital structure and firm value during economic turbulence. *Journal of Accounting and Investment, 22*(3), 415–430.

Ariyasa, I. M., Susila, G. P. A. J., & Yulianthini, N. N. (2022). Pengaruh Pertumbuhan Aset dan Struktur Modal terhadap Profitabilitas pada Perusahaan Sub Sektor Perkebunan yang Terdaftar di Bursa Efek Indonesia. *Prospek: Jurnal Manajemen dan Bisnis*, 1(2).

Brigham, E. F., & Houston, J. F. (2019). *Fundamentals of financial management* (15th ed.). Cengage Learning.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.

Collins, D., Maydew, E., & Weiss, I. (2021). Changes in value relevance of accounting information. *Journal of Accounting and Economics, 73*(1), 101432.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Jensen, M. C. (1986). Agency costs of free cash flow. *American Economic Review, 76*(2), 323–329.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm. *Journal of Financial Economics, 3*(4), 305–360.

Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. *Journal of Finance, 28*(4), 911–922.

Kusumawati, R., & Nugraheni, R. (2020). Leverage and firm value in Indonesian listed firms. *Jurnal Keuangan dan Perbankan, 24*(3), 456–468.

Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital. *American Economic Review, 53*(3), 433–443.

Oktarina, D., Siregar, S., & Putri, A. (2022). Commodity price volatility and firm value. *Journal of Commodity Markets, 28*, 100214.

Pradnyana Putra, I. G. N. P., & Susila, G. P. A. J. (2020). Pengaruh Ukuran Perusahaan dan Struktur Modal terhadap Profitabilitas pada Perusahaan Sub Sektor Perkebunan. *Bisma: Jurnal Manajemen*, 6(2).

Spence, M. (1973). Job market signaling. *Quarterly Journal of Economics, 87*(3), 355–374.

Sugiharto, N. A., & Agustina, D. (2020). Pengaruh Struktur Modal terhadap Kinerja Keuangan (Return on Equity) pada PT Perkebunan Nusantara VIII. *Jurnal Akuntansi*, 13(1).

Supeno, A. (2022). Determinasi Nilai Perusahaan dan Struktur Modal: Profitabilitas dan Likuiditas pada Perusahaan Perkebunan di Indonesia. *Jurnal Ekonomi Manajemen Sistem Informasi*, 3(3).

Supeno, A. (2022). Profitability and firm value in plantation firms. *Jurnal Ekonomi Manajemen Sistem Informasi, 3*(3), 289–302.

Utari, N. M. W., Widnyana, I. W., & Sukadana, I. W. (2022). Pengaruh Kebijakan Dividen, Profitabilitas, dan Pertumbuhan Penjualan terhadap Struktur Modal pada Perusahaan Subsektor Perkebunan yang Terdaftar di Bursa Efek Indonesia. *EMAS*, 6(4), 6074.

Waskito Erdi, T. (2023). Capital structure and firm value in infrastructure and resource sectors. *Jurnal Akuntansi dan Pajak, 24*(1), 77–90.

Waskito Erdi, T. (2023). Pengaruh Struktur Modal, Pertumbuhan Perusahaan, dan Profitabilitas terhadap Nilai Perusahaan pada perusahaan infrastruktur di Indonesia. *Jurnal Akuntansi dan Pajak*, Politeknik YKPN.

Widigdya, A., Putra, R., & Ali, H. (2024). Debt financing and firm performance in ASEAN markets. *International Journal of Financial Studies, 12*(1), 15.

Wooldridge, J. M. (2016). *Introductory econometrics: A modern approach* (6th ed.). Cengage Learning.