

THE EFFECT OF DERIVATIVE USAGE IN COMPANIES ON FIRM VALUE WITH CORPORATE GOVERNANCE AS A MODERATING VARIABLE

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Abstract. This study investigates the extent to which the use of derivative instruments shapes firm value among Indonesian manufacturing corporations, treating corporate governance quality as a conditional moderating mechanism. Employing a balanced panel of 34 publicly listed manufacturing firms observed across three fiscal years (2022–2024), yielding 102 firm-year observations, the analysis applies a Random Effects panel data regression framework. Empirical findings demonstrate that derivative utilization negatively influences firm value ($\beta = -0.142$; $p < 0.01$), whereas corporate governance quality positively influences firm value ($\beta = 0.038$; $p < 0.01$). Critically, the interaction term between derivative utilization and corporate governance quality is both positive and statistically significant ($\beta = 0.045$; $p < 0.01$), indicating that derivative instruments contribute positively to firm value exclusively when governance quality surpasses a threshold index of approximately 11.51. These results underscore corporate governance as an indispensable institutional prerequisite for derivatives to fulfill their intended value-enhancing function, offering substantive implications for policymakers, practitioners, and future scholarship.

Keywords: Financial Derivatives, Firm Value, Corporate Governance, Risk Hedging, Agency Theory.

1. Introduction

Manufacturing companies in open economies encounter various financial risks due to their reliance on imported raw materials, foreign-sourced capital equipment, and income from exports. This dependence makes them susceptible to fluctuations in exchange rates, interest rates, and commodity prices. If not managed effectively, these risks can lead to unstable earnings, disrupt operations, and erode shareholder value. According to corporate finance theory, derivatives are seen as logical tools for mitigating risk and enhancing value. Smith and Stulz (1985) highlight four ways that hedging can increase a firm's value: by reducing cash flow unpredictability, decreasing financial distress risk, alleviating underinvestment issues, and harmonizing the interests of creditors and shareholders. This view is based on the Modigliani and Miller (1958) framework, which posits that, outside perfectly competitive markets, risk management measures—including derivatives—can affect a firm's valuation.

However, research—particularly in manufacturing and emerging markets—casts doubt on this overly positive perspective. Evidence indicates that using derivatives does not consistently enhance value and can sometimes lead to negative market perceptions (Jin & Jorion, 2006; Nguyen & Faff, 2010). These results suggest that derivatives are not automatically beneficial; their effectiveness is influenced by the institutional context and management practices.

Agency theory critiques the unreserved optimism surrounding derivatives. Jensen and Meckling (1976) point out that the separation of ownership and control can lead to opportunities for managerial self-interest. In manufacturing companies with intricate operations and limited transparency, derivatives may be employed for speculation, earnings manipulation, or personal risk management by executives instead of legitimate hedging. Géczy, Minton, and Schrand (2007) warn that without adequate oversight, derivatives might represent corporate speculation rather than true risk management.

This concern is particularly pertinent in Indonesia, where ownership is often concentrated, family-run businesses prevail, and investor protections are weak, thereby heightening agency conflicts (Claessens et al., 2000). In such contexts, derivatives could be misused to shift financial risks or wealth from minority shareholders to controlling owners, especially when hedging information is scarce. Consequently,

investors frequently regard derivative use with skepticism, which can lead to lower firm valuations.

Thus, corporate governance becomes critical for ensuring that derivatives fulfill their intended role. Shleifer and Vishny (1997) argue that robust governance mitigates managerial self-interest and aligns decisions with shareholder objectives. Cross-national research, such as that conducted by Allayannis, Lel, and Miller (2012), suggests that the benefits of derivatives are most apparent in firms with high governance standards.

Much of the research on governance and derivatives has concentrated on developed nations and broad industries, potentially overlooking the manufacturing sector in Indonesia, which faces high operational risks and limited governance capacities. There is a significant gap in understanding whether corporate governance in Indonesia is sufficient to transform derivatives from potentially harmful practices into effective tools for risk management.

This study addresses this gap by shifting the focus from whether derivatives influence firm value to the governance conditions under which they do. By framing governance as a moderating factor, it provides insight into the inconsistencies observed in the findings regarding derivatives' impacts.

This research offers both theoretical and practical contributions. It demonstrates that the success of derivatives is contingent upon governance quality and the specific context. Practically, it cautions that broadening the use of derivatives in Indonesia's manufacturing sector without enhancing governance could elevate risks and diminish firm value, rather than yielding stability and benefits.

2. Literature Review

The relationship between the use of derivative instruments and firm value is a complex and debated area in corporate finance. This review brings together the main theoretical concepts and empirical research related to this topic, emphasizing the influence of corporate governance. It outlines the development of theoretical models, examines empirical findings that offer both support and contradiction, and identifies important governance factors that affect this relationship. Additionally, it points out ongoing gaps in the literature, especially in emerging markets like Indonesia, where inadequate institutional frameworks

might worsen agency issues while increasing the benefits of sound risk management practices..

Modigliani-Miller Irrelevance Theory

The foundational irrelevance theorem proposed by Modigliani and Miller (1958) posits that, in a hypothetical environment of perfectly competitive and frictionless capital markets, a company's choices regarding financing and risk management do not have a separate impact on its overall value. This theoretical perspective has significant normative implications by suggesting conditions under which derivatives gain economic significance. By systematically loosening the assumptions of an ideal market, a series of theoretical mechanisms emerge that illustrate how hedging can potentially increase a company's value. Smith and Stulz (1985) articulate this idea by pinpointing four main channels: (i) reducing cash flow volatility, which diminishes the likelihood of financial distress and its associated costs; (ii) alleviating the underinvestment problem, particularly for leveraged firms burdened by debt overhang; (iii) lowering expected tax obligations through income smoothing; and (iv) reconciling the differing incentives of debt-holders and equity-holders. Later theoretical and empirical research has broadened this framework by highlighting additional value-enhancing roles of derivatives, such as mitigating information asymmetry between company insiders and the capital markets, safeguarding internal liquidity from external financing issues, and improving resource allocation among investment possibilities. Despite these theoretical advancements, the empirical connection between derivatives and firm value continues to be debated, as actual outcomes depend on factors like market structure, regulatory context, and unique company characteristics..

The Importance of Derivatives in Increasing Firm Value

A significant amount of empirical evidence indicates a positive link between the use of derivatives and firm value, supporting the theoretical view that effective hedging can lead to a valuation advantage. The pioneering study by Allayannis and Weston (2001) estimates a hedging premium of about 4.87% in Tobin's Q for U.S. multinational companies that use foreign currency derivatives. Following studies have broadened these results across various sectors and regions: Carter, Rogers, and Simkins (2006) report a

hedging premium of 14% in the U.S. commercial airline sector, while Bartram, Brown, and Conrad (2011) link derivative use to reduced market risk and higher market valuations in different international contexts. Research examining specific types of derivatives generally supports the notion of value enhancement. For instance, Belghitar, Clark, and Judge (2008) find that foreign currency derivatives increase firm value by 14.7% and interest rate derivatives by 18.6% among UK companies. Additionally, findings from emerging markets, such as those in China highlighted by Luo and Wang (2018), indicate that these advantages are also present outside of advanced Western economies.

However, contrasting this positive perspective, some studies question the consistent benefits of derivatives. Nguyen and Faff (2010) report cases where the use of interest rate swaps is linked to poorer performance. Moreover, Belghitar, Clark, and Meftteh (2013) observe no significant connection between foreign currency derivative use and shareholder value among major French firms with considerable cross-border activity. Similarly, Jin and Jorion (2006) do not find a noteworthy value effect from hedging in the U.S. oil and gas industry. These discrepancies in the empirical evidence imply that the impact of derivatives on value is not straightforward but rather depends on specific characteristics of the firm and the institutional context in which it operates.

Empirical Evidence on Derivative Usage and Firm Value

A considerable amount of empirical research demonstrates a positive relationship between the use of derivatives and firm value, aligning with the theoretical notion that effective hedging can create a valuation advantage. The influential study by Allayannis and Weston (2001) identifies a hedging premium of roughly 4.87% in Tobin's Q for U.S. multinational corporations utilizing foreign currency derivatives. Ongoing research has expanded these findings across various sectors and regions: Carter, Rogers, and Simkins (2006) highlight a 14% hedging premium in the U.S. commercial airline sector, while Bartram, Brown, and Conrad (2011) link derivative usage to diminished market risk and increased market valuations across a range of institutional contexts. Additionally, studies focusing on particular classes of derivatives largely support the hypothesis that they can enhance firm value. For example, Belghitar,

Clark, and Judge (2008) report increases in firm value of 14.7% related to foreign currency derivatives and 18.6% related to interest rate derivatives among companies in the UK. Research from emerging markets, such as the work by Luo and Wang (2018) in China, indicates that these advantages extend beyond advanced Western economies.

On the other hand, there is a significant body of literature that challenges the notion that derivatives universally yield positive effects. Nguyen and Faff (2010) cite examples where the use of interest rate swaps correlates with declines in performance. Moreover, Belghitar, Clark, and Mefteh (2013) find no significant link between foreign currency derivative usage and shareholder value in major French firms with considerable international exposure. Similarly, Jin and Jorion (2006) do not uncover a substantial value impact of hedging practices in the U.S. oil and gas industry. These conflicting findings suggest that the value implications of derivatives are not straightforward and may vary based on firm-specific characteristics and the broader institutional context within which these firms operate.

Corporate Governance

Corporate governance represents a multi-faceted concept that includes the frameworks, processes, and structures by which companies are directed and overseen. Existing research identifies several governance dimensions that affect the likelihood of engaging in derivative activities and their valuation impacts.

With regard to ownership structure, institutional ownership tends to correlate with a higher propensity to hedge, as institutional investors typically seek to stabilize earnings volatility and safeguard their investments in concentrated holdings. In contrast, managerial ownership might reduce hedging activities, as well-diversified owners can more effectively manage idiosyncratic risk. Another important governance aspect is board composition; increased board independence and the separation of the CEO and chair roles tend to be associated with derivative use aimed at genuine risk management (Borokhovich et al., 2004). Yet, as noted by Fauver and Naranjo (2010), when agency costs are pronounced, additional derivative trading might receive a negative reaction from capital markets.

A significant contribution from Allayannis, Lel, and Miller (2012) categorizes corporate governance as a conditional moderator in the relationship between derivatives and their value. They find that the positive valuation associated with derivative use is primarily observed in firms with strong governance frameworks. In contexts where governance is lacking, derivatives may be exploited opportunistically by managers, leading to value erosion instead of enhancement. Géczy, Minton, and Schrand (2007) expand on this, arguing that inadequate oversight permits speculative practices disguised as hedging. Further research by Tashfeen, Butt, and Malik (2017) and Butt et al. (2021) reinforces the idea that governance quality—including factors like board diversity, monitoring capabilities, and ownership concentration—is vital in determining whether derivative strategies are beneficial for shareholders.

Hypothesis Development

Based on a theoretical framework that merges agency theory, risk management theory, and corporate governance theories, three hypotheses are proposed in light of the empirical gaps identified:

H1: The use of derivatives has a significant negative impact on firm value in Indonesian manufacturing firms.

H2: The quality of corporate governance has a significant positive influence on firm value.

H3: The quality of corporate governance positively moderates the effect of derivative usage on firm value, such that the adverse impact of derivatives on firm value is weakened at higher governance quality levels..

3. Research Method

Variable Operationalization and Measurement

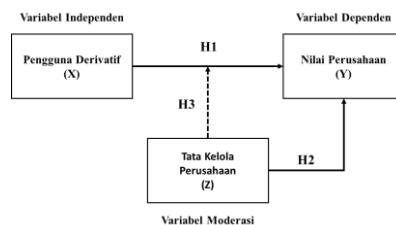


Figure 1. Conceptual Framework

Figure 1 presents the conceptual framework of this study, illustrating the proposed direct and moderated relationships among the key constructs.

Table 1 Operational Variable

Operational Variable	Formula
Dependent Variable	
Firm Value (FV)	Tobin's Q = (Market Value of Equity + Book Value of Total Debt) / (Book Value of Total Assets)
Control Variables	
Firm Size (SIZE)	SIZE = ln (Total Assets)
Firm Age (AGE)	AGE = Observation Year – Year of Establishment
Leverage (LEV)	Leverage = Book Value of Total Debt / Market Value of Equity
Liquidity (LIQUID)	Liquidity = Current Assets / Current Liabilities
Capital Expenditure / Growth Opportunities (CAPEX)	Capex Intensity Ratio = (Ending Fixed Assets – Beginning Fixed Assets + Depreciation Expense) / Total Assets × 100%

Sample and Data Collection

The research population comprises all manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the period 2022 to 2024. Following the application of purposive sampling criteria—including continuous listing throughout the observation window, availability of complete financial and governance disclosures, and non-financial sector classification—the final sample comprises 34 manufacturing firms observed across three consecutive fiscal years, generating a balanced panel of 102 firm-year observations.

Table 2 Number of Samples

Industrial Sector	Count	Percentage
Industry	5	15%
Primary Consumer Goods	19	56%
Non-Primary Consumer Goods	1	3%
Raw Materials	9	26%
Total	34	100%

Source: IDX

Data Analysis Technique

Panel data were processed using E-Views software (version 12). The choice among the Common Effect Model, Fixed Effects Model (FEM), and Random Effects Model (REM) was determined through sequential specification testing.

Prior to hypothesis testing, the following preliminary analyses were conducted: (1) descriptive statistical profiling for all variables; (2) independent-sample t-tests comparing derivative users and non-users across firm characteristics; (3) multicollinearity diagnostics employing Variance Inflation Factors (VIF), with acceptable thresholds set at VIF < 10; and (4) Pearson correlation analysis to establish bivariate associations among variables.

The primary econometric specifications are as follows:

Model 1 — Direct Effect of Derivative Utilization on Firm Value:

$$FV_{it} = \alpha + \beta_1 DR_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LEV_{it} + \beta_5 LIQUID_{it} + \beta_6 CAPEX_{it} + \beta_7 CF_{it} + Year + Ind + \epsilon_{it}$$

Model 2 — Direct Effect of Corporate Governance on Firm Value:

$$FV_{it} = \alpha + \beta_1 CG_Index_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LEV_{it} + \beta_5 LIQUID_{it} + \beta_6 CAPEX_{it} + \beta_7 CF_{it} + Year + Ind + \epsilon_{it}$$

Model 3 — Moderated Regression (Corporate Governance as Moderator):

$$FV_{it} = \alpha + \beta_1 DR_{it} + \beta_2 CG_Index_{it} + \beta_3 (DR_{it} \times CG_Index_{it}) + \beta_4 SIZE_{it} + \beta_5 AGE_{it} + \beta_6 LEV_{it} + \beta_7 LIQUID_{it} + \beta_8 CAPEX_{it} + \beta_9 CF_{it} + Year + Ind + \epsilon_{it}$$

Where i denotes the firm identifier, t denotes the fiscal year, Year represents year fixed effects, Ind denotes industry fixed effects, and ε is the idiosyncratic error term.

4. Hasil dan Pembahasan

Results and Discussion

Descriptive Statistics

Table 3 presents descriptive statistics characterizing all research variables across the 2022–2024 observation window for the sampled manufacturing firms.

Table 3: Descriptive Statistics

Variable	Average	Std. Dev.	Min	Max
Tobin's Q	9.85	12.45	1.04	40.47
SIZE	16.12	1.45	12.99	22.51
LEVERAGE	1.23	1.85	0.03	7.30
LIKUIDITAS	3.45	5.67	0.08	1116.43
CAPEX	0.45	0.38	0.002	1.85
CASH FLOW	0.28	0.45	-0.166	1.594
DR	0.35	0.48	0	1
CG Index	13.8	2.56	9	20

The analysis of firm valuation, operationalized through Tobin's Q, reveals a mean of 9.85 with a standard deviation of 12.45. The elevated mean relative to unity indicates that, on average, firms are valued significantly higher than their book values, reflecting investor expectations of sustained profitability. The high standard deviation suggests substantial variability in market valuations across firms, with minimum and maximum values of 1.04 and 40.47, respectively. The minimum value indicates near parity between market and book values, while the maximum reflects firms with substantial growth premiums. This heterogeneity emphasizes the necessity of accounting for firm-specific characteristics in subsequent multivariate analyses.

Firm size (SIZE) exhibits a mean of 16.12 with moderate dispersion, implying that most firms in the sample are medium to large within the manufacturing sector. Larger firms are generally associated with economies of scale, which enhance operational efficiencies and facilitate access to external financing, thereby supporting higher firm value. Leverage, with a mean of 1.23, indicates that debt financing exceeds equity financing on average, with considerable variation across firms, highlighting diverse capital structure strategies within the sample. Approximately 35% of firm-year observations involve derivatives usage, suggesting that hedging through derivatives is not prevalent in the Indonesian manufacturing sector. The governance index has a mean score of 13.8 out of 20, indicating above-average governance quality but not optimal. The variation in governance scores reflects differences in monitoring capacity and internal control mechanisms among firms, which are critical for assessing corporate oversight and decision-making processes.

Table 4: Comparison of Average Characteristics of User vs. Non-User Derivatives

Variable	Non-Derivatif	Derivatif	Differences	Prob.
Tobin's Q	14,02	5,94	-8,08	0
LEV	821,37	19.744,82	18.923,45	0,001
CG Index	15,61	16,19	0,58	0,118

Table 4 presents the results of mean comparison tests between derivative users and non-users. A statistically significant difference in Tobin's Q is observed at the 1% level, with derivative users exhibiting systematically lower valuations than their non-using counterparts. This preliminary result is theoretically consistent with the agency theory perspective: in institutional environments characterized by imperfect governance, market participants may interpret derivative activity as a signal of increased agency risk or covert speculative behavior, leading to downward price adjustments.

Derivatives-using firms also have significantly higher leverage ratios, consistent with the theoretical prediction that firms facing greater financial risk are more likely to use derivatives-based hedging. The lack of a statistically significant difference in governance index scores between the two groups suggests that derivatives use is not automatically associated with higher governance quality, reinforcing the need to examine governance quality as a conditional moderator rather than a direct correlate of hedging activity.

Classical Assumption Tests

Table 5: Results of Classical Assumption Tests for Panel Regression Model

Test	Statistic	Result
Normalitas (Jarque-Bera)	p = 0.312	Normally distributed residual
Heteroskedastisitas (Breusch-Pagan)	p = 0.189	No heteroscedasticity
Multikolinearitas (VIF rata-rata)	2.87	No multicollinearity
Autokorelasi (Durbin-Watson)	1.96	No autocorrelation

The statistical assumptions underpinning the estimation of panel regression models were rigorously assessed. The Jarque-Bera test produced a p-value of 0.312, supporting the normality of residuals at standard significance levels. The Breusch-Pagan test yielded a p-value of 0.189, indicating no evidence of heteroskedasticity in the residuals. The average Variance Inflation Factor was 2.87, well below the critical threshold of 10, confirming the absence of multicollinearity issues among independent variables. The Durbin-Watson statistic was 1.96, closely

approximating the ideal value of 2.0, thus suggesting no significant autocorrelation. Collectively, these diagnostic results affirm that the regression model satisfies the Gauss-Markov assumptions, ensuring the estimators are BLUE (Best Linear Unbiased Estimators). This validation supports the robustness of the inferential conclusions derived from the analysis, reinforcing the reliability of the model’s findings.

Panel Data Model Selection

Table 6: Results of Panel Data Model Selection Tests

Test	p-value	Decision
Chow Test	0.000	Reject Common Effect Model
Hausman Test	0.205	Accept Random Effects Model
LM Test	0.003	Reject Common Effect Model

Sequential model selection procedures identified the most suitable panel data estimator. The Chow test indicated a significant p-value of 0.000, leading to rejection of the pooled Common Effect Model and highlighting the necessity for a model that captures individual heterogeneity. The Hausman test produced a p-value of 0.205, suggesting no significant correlation between individual effects and regressors. Consequently, the Random Effects Model was chosen, as it efficiently accounts for both within- and between-entity variations, ensuring robust and reliable inference.

Main Regression Results

The Effect of Derivative Usage on Firm Value (Model 1)

Table 7: The Effect of Derivative Usage on Firm Value (Model 1)

Variable	Koefisien	p-value	Signifikan
DR	-0.142	0.008	Yes (1%)
SIZE	0.021	0.456	No
AGE	0.003	0.032	Yes (5%)
LEVERAGE	-0.098	0.004	Yes (1%)
LIKUIDITAS	0.012	0.041	Yes (5%)
CAPEX	0.245	0.003	Yes (1%)
CASH FLOW	0.178	0.001	Yes (1%)
R ²	0.305		

The analysis of Model 1 reveals that the use of derivatives has a statistically significant negative impact on firm value, with a coefficient of $\beta = -0.142$ ($p < 0.01$). This supports the hypothesis that

derivatives may be employed in ways that do not align with shareholder interests, particularly in environments with weak governance mechanisms. Such positions could serve managerial objectives, including speculation or personal risk mitigation, at the expense of shareholder wealth. The model's R² value of 0.305 indicates that approximately 30.5% of the variation in Tobin's Q across firms is explained by the included variables. Notably, firm age, liquidity, capital expenditure intensity, and operating cash flow are positively associated with firm value, while leverage exhibits a negative relationship, consistent with the costs associated with financial distress. In Model 2, findings demonstrate that higher corporate governance quality significantly enhances firm value, with a coefficient of $\beta = 0.038$ ($p < 0.01$). This supports the notion that effective governance mechanisms reduce agency conflicts, improve managerial accountability, and bolster investor confidence. The increase in R² further confirms that incorporating governance factors improves the model’s explanatory power.

The Moderating Effect of Corporate Governance (Model 3)

Table 9: The Moderating Effect of Corporate Governance (Model 3)

Variable	Koefisien	p-value	Signifikan
DR	-0.518	0.001	Ya (1%)
CG Index	0.031	0.012	Ya (5%)
DR × CG Index	0.045	0.003	Ya (1%)
R ²	0.328		

The study's primary finding indicates that corporate governance quality significantly moderates the relationship between derivative utilization and firm value. The interaction term (DR × CG Index) shows a positive and statistically significant coefficient ($\beta = 0.045$; $p < 0.01$), supporting the hypothesis that higher governance standards enhance the value-adding effects of derivatives. Conversely, the main effect of derivative utilization is notably negative ($\beta = -0.518$; $p < 0.01$), suggesting that at low governance levels, derivatives tend to harm firm value. The analysis identifies a governance index threshold of approximately 11.51 on a 20-point scale, above which derivative use shifts from destructive to value-enhancing, providing a practical benchmark for stakeholders.

Robustness Test

Table 8: Robustness Test - Alternative Estimation Methods

Model	DR (β)	CG Index (β)	Interaksi (β)	Consistent
REM (baseline)	-0.142	0.038	0.045	Yes
FE	-0.148	0.041	0.047	Yes
2SLS	-0.155	0.042	0.049	Yes

The robustness of the primary findings was evaluated through alternative estimation techniques, including the Fixed Effects estimator and the Two-Stage Least Squares (2SLS) method, which specifically addresses potential endogeneity issues related to reverse causality between firm value and derivative activity. Results across all specifications consistently demonstrated that derivative utilization is negatively associated with firm value, while governance quality and the interaction term exhibit positive relationships. The stability of these coefficients across different methodologies reinforces the robustness, reliability, and scientific validity of the original conclusions, confirming that the observed relationships are not artifacts of the estimation approach.

Discussion

The analysis evaluates the robustness of the primary findings through alternative estimation methodologies, specifically employing the Fixed Effects estimator and the Two-Stage Least Squares (2SLS) approach. The 2SLS method was selected to mitigate potential endogeneity issues stemming from reverse causality between firm value and derivative activities. Consistent results across all specifications demonstrate that the key coefficients—namely, the negative significance of derivative utilization, the positive significance of governance quality, and the positive significance of their interaction—remain stable. This consistency affirms the reliability and scientific validity of the core conclusions, indicating that the observed relationships are not artifacts of the estimation technique used.

The empirical findings provide a comprehensive and theoretically grounded understanding of the interactions among derivative utilization, corporate governance, and firm value within Indonesia's manufacturing sector. The negative direct effect of derivatives on firm value, as shown in Model 1, aligns with Jensen and Meckling's (1976) agency theory. It suggests that in contexts where governance mechanisms are underdeveloped, managerial

discretion in derivative activities may lead to value-destroying opportunism, which rational investors recognize and incorporate into valuation processes.

Furthermore, the positive influence of governance quality on firm value, observed in Model 2, corroborates the foundational work of Shleifer and Vishny (1997). It underscores governance as a critical institutional factor that independently enhances firm value, regardless of specific financial strategies. The significant positive moderation effect identified in Model 3 empirically supports the conditional governance hypothesis proposed by Allayannis, Lel, and Miller (2012). This indicates that the impact of derivatives on firm value is contingent upon the quality of governance infrastructure within which these financial instruments are employed.

A notable contribution of this research is the identification of a governance threshold at 11.51 out of 20 points. This benchmark offers a tangible, measurable criterion for assessing a firm's governance capacity to leverage derivatives as value-enhancing tools. It operationalizes the abstract concept of governance quality, enabling Indonesian manufacturing firms to evaluate their readiness for derivative deployment. This finding reinforces the broader theoretical premise that certain institutional prerequisites must be satisfied to realize the economic benefits associated with financial instruments.

Conclusion and Recommendations

This analysis advances the corporate finance literature by providing empirical evidence that the relationship between derivative instrument use and firm value is complex, contingent, and not uniformly positive. Based on a balanced panel of 34 Indonesian manufacturing firms observed over three fiscal years (2022–2024), three key findings are identified.

Firstly, derivative utilization has a statistically significant negative impact on firm value ($\beta = -0.142$; $p < 0.01$) when considered independently of governance quality. This aligns with Jensen and Meckling's (1976) agency theory, suggesting that in environments with weak governance, derivatives may facilitate managerial opportunism—through covert speculation or moral hazard—ultimately harming shareholder interests.

Secondly, the quality of corporate governance independently exerts a positive influence on firm value ($\beta = 0.038$; $p < 0.01$). This supports the premise that strong governance mechanisms mitigate agency conflicts, enhance managerial accountability, and

bolster investor confidence, thereby fostering value creation, as proposed by Shleifer and Vishny (1997).

Thirdly, a significant positive interaction exists between derivative use and governance quality ($\beta = 0.045$; $p < 0.01$), indicating governance as a necessary condition for derivatives to add value. Marginal effect analysis reveals a governance threshold of 11.51 on a 20-point scale; below this, derivatives tend to diminish value, while above it, they serve as effective hedging tools. This benchmark offers both a theoretical and practical target for firms aiming to optimize risk management outcomes.

Based on these insights, strategic recommendations include strengthening governance frameworks prior to expanding derivative activities. Specific measures involve enhancing transparency in hedging disclosures, establishing independent risk oversight committees, and improving board supervision of derivative transactions.

Regulatory implications suggest the need for more detailed, standardized disclosure requirements from authorities such as the Financial Services Authority (OJK) and the Indonesia Stock Exchange (IDX). These should encompass quantitative and qualitative aspects of hedging strategies and outcomes, integrated into comprehensive risk assessment frameworks. Stricter enforcement of governance codes, especially to protect minority shareholders in Indonesia's concentrated ownership environment, is also recommended.

Future research should broaden the sectoral and temporal scope to improve generalizability. Incorporating additional moderating factors—such as enterprise risk management quality or board characteristics like financial expertise—would deepen understanding of governance's role in derivative value creation. Qualitative case studies could further contextualize the quantitative findings, offering nuanced insights into decision-making and oversight processes at the firm level

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