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Analyzing the Impact of Corporate Hedging on Enterprise Valuation: Evidence from China

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Abstract

In a dynamic global financial landscape marked by unprecedented turbulence, driven notably by the COVID-19 pandemic, corporate hedging practices emerged as a critical tool for managing risks and preserving enterprise value (EV). This research investigated the intricate relationship between corporate hedging and EV, with a specific focus on Chinese-listed firms spanning the period from 2012 to 2022. Employing an extensive sample of 4,574 Chinese-listed firms, the study examines the role of corporate hedging in shaping enterprise value. The findings support the statistically significant impact of corporate hedging on enterprise. The study further tested the moderating role of ownership structure and corporate governance. The findings reveal that ownership structure and corporate governance moderate the relationship between corporate hedging and enterprise value.

Keywords: Corporate hedging, enterprise value, corporate governance, ownership structure, Chinese firms

Introduction

The global financial landscape has experienced unprecedented turbulence in recent years, primarily driven by the outbreak of the COVID-19 pandemic (Hendrati et al., 2024). This period of economic uncertainty resulted in heightened volatility in interest rates, exchange rates, and commodity prices

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within the international financial markets (Yang et al., 2023). Managing risks has become a critical aspect of corporate strategy in this dynamic and complex financial environment.

Meanwhile, derivatives have witnessed an exponential surge in popularity worldwide over the last decade. As the economic landscape evolves and globalization intensifies, they have emerged as indispensable instruments for diverse firms to proactively manage and mitigate risks inherent in operational and financial activities (Sridhar, 2023). It should be noted that the deepening integration of China into the international economy has exposed domestic enterprises, particularly listed companies, to the above-mentioned risks (Xiang, 2022). Therefore, there is a pressing need to investigate how the utilization of derivatives, specifically corporate hedging practices, impacts the valuation of Chinese enterprises.

This research paper profoundly expands the realm of financial knowledge. At its core, it offers a comprehensive review that delves into theoretical frameworks and empirical evidence concerning the impact of the financial derivatives market on enterprise value (EV). The empirical analysis conducted in this research is rooted in the Generalized Least Squares (GLS) model, a robust statistical approach renowned for its effectiveness in handling heteroscedasticity and autocorrelation. By employing the GLS model, this research leverages its essential advantages to provide accurate and reliable insights into the relationship between corporate hedging practices and enterprise valuation.

Furthermore, this study goes beyond the conventional by considering the moderating effects of two pivotal factors: property ownership and corporate government index (CGI). These moderating variables introduce a layer of complexity and depth to the analysis, shedding light on how ownership dynamics and corporate governance structures may influence the interplay between hedging and enterprise value. Therefore, beyond academics, this research offers valuable insights to practitioners, including corporate leaders, investors, and senior managers.

Literature review and research hypotheses

Theoretical framework and models

Financial derivatives represent a dynamic and critical facet of modern finance, continually evolving to address the complex risk landscape of global markets. Their origins can be traced back to the introduction of the “futures contract” by the Chicago Board of Trade in 1865 (Hull, 2022). Since then, derivatives have received much attention among scholars who aimed to investigate their impact on enterprise value. Modigliani and Miller (1958) were first to propose the M-M theory which postulated that the use of derivatives should not inherently create value or enhance financial or market

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performance. This viewpoint prompted extensive debates within the academic and financial groups, questioning the role of derivatives in corporate finance (Buriro et al., 2023).

Subsequent studies rejected the M-M theory and found that risk management increases the value of companies due to specific market imperfections. Guay and Kothari (2003) identified and divided them into four categories: financial distress costs, costly external financing, asymmetry in tax costs, and the cost of managerial risk aversion. Moreover, many papers further illuminated the effectiveness of financial derivatives in mitigating firm risks. By smoothing earnings and cash flows, derivatives reduce capital costs, enabling firms to navigate financial challenges and uncertainties more effectively (Campbell et al., 2019) (Su et al., 2022). Consequently, this risk reduction can have a substantial impact on EV.

Recent studies have continued to build on these foundational theories. For instance, Hong et al. (2020) provided a comprehensive review of the empirical literature, emphasizing the value-creating potential of corporate hedging through various channels, such as reducing underinvestment costs and enhancing corporate liquidity. Similarly, Liu (2023) examined the global derivatives usage. They found that firms using derivatives had lower cash flow volatility and higher firm value, supporting that risk management via derivatives can enhance firm performance.

Empirical studies and research advancements

While the theoretical discourse surrounding the relationship between corporate hedging and enterprise value has been extensive in the last decade, empirical studies that offer concrete insights into this relationship remain relatively scarce. Two noteworthy research papers, authored by Buriro et al. (2023) and Yang et al. (2023), stand out in the literature for their empirical analyses, shedding light on the positive impact of corporate hedging on enterprise value.

In their respective studies, Buriro et al. (2023) and Yang et al. (2023) both approach the evaluation of enterprise value through the lens of Tobin's Q variable. However, their treatment of corporate hedging differs significantly. Buriro et al. (2023) measured the gain or loss associated with hedging activities for a specific year. Their methodology provides a detailed examination of the outcomes of corporate hedging efforts. It is important to note that this study, while insightful, has a relatively limited sample size, which may affect the generalizability of its findings.

On the other hand, Yang et al. (2023) employ a different but equally valid approach. They introduce a binary dummy variable, taking on values of 1 for firms that engage in hedging and 0 for those that do not. This approach simplifies the evaluation of hedging practices but offers a broader perspective

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by considering the presence or absence of hedging activities. However, it should be acknowledged that their study employs a book-to-market value for robustness testing, a choice that may raise questions about the accuracy and appropriateness of this measure for capturing the full impact of corporate hedging.

Additionally, recent empirical work by Deng and Yang (2023) explored the impact of hedging on firm value across different industries, highlighting that the benefits of hedging are more pronounced in industries with higher exposure to exchange rate fluctuations. Similarly, Chang et al. (2024) analyzed a large sample of non-financial firms and found robust evidence that hedging activities are associated with higher firm value, particularly in firms with significant growth opportunities and financial constraints.

Research gap and study relevance

Despite extensive theoretical and emerging empirical research on corporate hedging and firm value, gaps remain. Existing studies primarily focus on developed economies, overlooking emerging markets like China with its rapidly evolving economic landscape and unique corporate ownership structures. The interplay between state-owned and non-state-owned enterprises and hedging strategy effectiveness is underexplored. Moreover, the moderating role of corporate governance in the hedging-firm value relationship has received limited attention, despite governance mechanisms' growing global prominence.

This study addresses these gaps by comprehensively analyzing how corporate hedging impacts enterprise value for Chinese listed firms. Employing robust methodologies like the Generalized Least Squares model and introducing moderators like ownership and governance index, provides nuanced insights into this relationship. Ultimately, it contributes to the literature and offers practical implications for corporate decision-makers, investors, and policymakers managing risk in today's dynamic financial landscape.

Corporate hedging and enterprise value

Corporate hedging has become an indispensable facet of risk management for firms navigating the complexities of today’s financial markets. The central tenet of hedging is to protect a company from various financial disruptions and inefficiencies that can erode enterprise value (EV). Drawing upon the analysis of Chinese-listed firms from 2012 to 2022, this study underscores the pivotal role of hedging in enhancing firm value through several mechanisms.

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Firstly, hedging helps mitigate the adverse effects of financial distress, which arises when a firm's operational cash flow falls short of covering its debt obligations. This financial strain can lead to costly bankruptcy or restructuring processes that directly diminish EV (Tron, 2021). By employing hedging strategies, companies can ensure adequate liquidity and working capital during economic downturns, thereby reducing the likelihood of financial distress and preserving EV (Sugiarto et al., 2023).

Secondly, effective hedging reduces the reliance on costly external financing. Firms operating in volatile financial environments often face unpredictable cash flows, compelling them to seek external capital at unfavorable terms. Hedging stabilizes cash flows, thus minimizing the need for external funding and the associated high costs. This reduction in financing costs enhances the overall enterprise value by allowing firms to allocate resources more efficiently and pursue growth opportunities without incurring excessive capital costs (Buriro et al., 2023).

Thirdly, corporate hedging can be strategically used to optimize tax positions. Firms can choose hedging instruments that align with their tax strategies, thereby reducing tax liabilities associated with gains and losses from financial instruments (Grima et al., 2020). This tax efficiency ensures that companies manage their overall tax burden effectively, contributing to higher net income and, consequently, increased EV (Campbell et al., 2019).

Lastly, hedging addresses the issue of managerial risk aversion. Managers often avoid high-risk projects due to personal financial risks and job security concerns. However, with effective hedging strategies in place, managers can mitigate these risks, making them more likely to undertake value-enhancing projects. This alignment of managerial actions with shareholder interests leads to strategic decisions that drive up enterprise value (Milidonis & Stathopoulos, 2014).

The empirical analysis using the Generalized Least Squares (GLS) model confirms a significant positive relationship between corporate hedging and EV among Chinese-listed firms. This relationship is particularly pronounced in state-owned enterprises and firms with robust corporate governance mechanisms, which further strengthens the argument that hedging is a vital tool for value creation in the corporate sector (Cardinale, 2021; Dang et al., 2021). Therefore, we hypothesize that corporate hedging is positively associated with enterprise value.

Moderating the role of enterprise ownership

Ownership structure plays a crucial role in shaping the effectiveness of corporate hedging strategies and their subsequent impact on enterprise value (EV). Different types of ownership structures, particularly the distinction between state-owned enterprises (SOEs) and non-state-owned enterprises

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(non-SOEs), can influence how hedging practices are implemented and their outcomes. This study examines the moderating effect of ownership structure on the relationship between corporate hedging and EV in Chinese-listed firms.

SOEs typically have different objectives and governance structures compared to non-state-owned enterprises (non-SOEs). SOEs often prioritize stability and long-term growth over short-term profitability, which can lead to a more strategic and comprehensive approach to risk management, including hedging. This alignment with state goals allows SOEs to utilize hedging more effectively to stabilize cash flows and protect against financial distress, thereby enhancing EV (Cardinale, 2021).

On the other hand, non-SOEs, driven by market competition and shareholder expectations, might focus more on immediate financial performance. These firms may employ hedging to manage specific financial risks, such as foreign exchange or commodity price fluctuations, which can have a direct and immediate impact on their financial statements. This targeted approach to hedging in non-SOEs helps maintain liquidity and reduce financing costs, ultimately contributing to higher EVs (Dang et al., 2021).

Moreover, the difference in access to resources and information between SOEs and non-SOEs also plays a role in the effectiveness of hedging strategies. SOEs often have better access to financial resources and governmental support, allowing them to implement more sophisticated and comprehensive hedging strategies. This support can lead to a more significant positive impact on EVs than non-SOEs, which may face resource constraints and higher costs in accessing hedging instruments (Xie et al., 2023).

The empirical analysis reveals that the positive impact of corporate hedging on EVs is more pronounced in SOEs than in non-SOEs. This finding suggests that the ownership structure, particularly state ownership, enhances the effectiveness of hedging strategies in increasing EV. State support and strategic alignment with long-term goals in SOEs likely contribute to this stronger relationship (Antunez et al., 2023).

Furthermore, firms with diverse ownership structures, including mixed ownership, may experience varying degrees of effectiveness in their hedging practices. These firms can leverage the advantages of both state support and market-driven strategies, leading to an optimal balance that enhances EV. The study's results underscore the importance of considering ownership structure when evaluating the impact of hedging on firm value (Al-Gamrh et al., 2020). Consequently, we hypothesize that ownership structure moderates the relationship between corporate hedging and enterprise value.

Moderating the role of corporate governance

Corporate governance encompasses the set of processes, policies, and structures that guide and control corporate behavior, ensuring accountability,

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fairness, and transparency in a company's relationship with its stakeholders. Strong corporate governance mechanisms can significantly influence the effectiveness of corporate hedging strategies and their impact on enterprise value (EV).

Effective corporate governance provides a framework for better decision-making, aligning the interests of managers with those of shareholders. Companies with robust governance structures are more likely to implement well-thought-out hedging strategies that align with their overall risk management objectives. This alignment reduces the potential for agency conflicts, wherein managers might otherwise pursue hedging strategies that benefit their interests rather than those of the shareholders (Campbell et al., 2019).

Board composition and independence are critical aspects of corporate governance that can affect hedging outcomes. Boards with a higher proportion of independent directors are better positioned to oversee management decisions, including hedging practices. Independent directors bring diverse perspectives and expertise, enhancing the board's ability to scrutinize and approve hedging strategies that align with the company's risk tolerance and financial goals. This oversight ensures that hedging contributes positively to EVs by mitigating risks without incurring unnecessary costs (Landi et al., 2022).

Additionally, companies with strong corporate governance often have more transparent and comprehensive risk management policies. These firms are likely to adopt a proactive approach to risk identification and mitigation, including the use of financial derivatives for hedging. Transparent reporting and disclosure practices associated with good governance enhance stakeholders' trust and confidence, contributing to a more favorable market perception and, consequently, higher EV (Su et al., 2022).

The role of executive compensation tied to firm performance is another governance mechanism that influences hedging effectiveness. When executives' compensation is linked to the company's financial performance, there is a greater incentive for them to engage in risk management practices that enhance EV. Hedging becomes a tool to stabilize earnings and achieve performance targets, aligning management's actions with shareholder interests. This alignment reduces the likelihood of risk-averse behavior that might otherwise hinder growth opportunities (Milidonis & Stathopoulos, 2014).

Empirical evidence from this study supports the hypothesis that corporate governance moderates the relationship between corporate hedging and enterprise value. Firms with strong governance structures exhibit a more pronounced positive impact of hedging on EVs. The findings suggest that effective governance enhances the benefits of hedging by ensuring that these

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strategies are implemented in a manner consistent with the firm's overall risk management objectives and shareholder interests (Al-Gamrh et al., 2020).

Moreover, the study highlights the importance of integrating environmental, social, and governance (ESG) factors into corporate governance frameworks. Companies that incorporate ESG considerations into their governance practices are better equipped to manage long-term risks, including those related to market volatility and regulatory changes. This integration enhances the effectiveness of hedging strategies, contributing to sustainable value creation and higher EV (Landi et al., 2022). Thus, we hypothesize that corporate governance moderates the relationship between corporate hedging and enterprise value.

Methods

Sample selection

This research paper is founded upon an extensive sample comprising 4,574 Chinese-listed firms, spanning the years from 2012 to 2022. Notably, companies that had their issued stocks subjected to delisting risk warnings or any form of preferential treatment by China's Securities Regulatory Commission were intentionally excluded from the sample. This exclusion criterion was implemented to ensure the inclusion of firms characterized by stable financial performance, thereby mitigating the potential influence of outliers on analytical outcomes. Furthermore, organizations with incomplete or missing financial data were also systematically excluded, thus guaranteeing the data's completeness and reliability.

To conduct this analysis, we gathered information on firm performance from the China Stock Market and Accounting Research (CSMAR) database, renowned for its meticulousness and credibility in providing comprehensive financial and market data for all listed companies in China. The widespread reliance on the CSMAR database in empirical research concerning Chinese firms underscores its accuracy and dependability as a primary data source. Consequently, this paper's findings are anchored in the database which assures the highest level of precision.

Overall, this study's expansive sample encompasses a remarkable 12714 firm-year observations, spanning a decade from 2012 to 2022. This substantial sample size not only fortifies statistical power but also empowers us to conduct a rigorous and in-depth analysis of the intricate relationship between hedging and EV. Furthermore, the longitudinal nature of this sample equips us with the unique capability to discern temporal shifts in the hedging amount over time, providing invaluable insights into my research area within the specific context of China.

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Variables definition

The dependent variable in this paper is TobinQ, a widely recognized financial measure used to assess the relationship between a firm's market value and its replacement cost or book value. TobinQ represents how efficiently a company utilizes its assets, which is highly relevant when considering corporate hedging practices. A TobinQ greater than 1 suggests that the market values the firm's assets higher than their accounting value, indicating potential growth opportunities and positive market sentiment. Conversely, a TobinQ less than 1 may indicate that the market values the assets lower than their accounting value, possibly suggesting undervaluation or inefficient asset utilization.

The independent variables include l_HedgeAmount and HedgeAmount1. The l_HedgeAmount variable represents the gain or loss from hedging activities undertaken by firms in a specific year. This measure captures the financial gain or loss resulting from a firm's hedging activities, where positive values indicate gains from successful hedging operations and negative values suggest losses due to ineffective or adverse market movements. HedgeAmount1 represents the total amount of hedging undertaken by the firm, providing an alternative measure of the hedging activities.

Moderating variables in this study are Enterprise_own and CG_index. Enterprise_own represents enterprise ownership, capturing the influence of ownership structures on corporate performance. The CG_index variable measures the quality and effectiveness of corporate governance practices within a firm. It evaluates aspects such as risk oversight, transparency, and adherence to legal governance principles. A higher CG_index value indicates stronger corporate governance practices, while a lower value suggests weaker governance structures. The CG_index helps gauge how the quality of corporate governance influences the relationship between corporate hedging and enterprise value.

Control variables are essential to account for factors that may influence the connection between the explained and explanatory variables. Size, representing a firm's scale or magnitude and measured as the logarithm of total assets, is anticipated to have a significant relationship with enterprise value. Leverage (Lev), calculated as the debt-to-asset ratio, is another control variable that can influence enterprise value due to the financial risks associated with higher debt levels.

Additional control variables include the Board, which reflects the total number of board members, and Indep, which indicates the proportion of independent directors to total board members. CEO duality (Dual) is a dummy variable indicating if the CEO holds two designations (1 if yes, otherwise 0). Ownership concentration is measured by the variables Top1, Top5, and

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Top10, which indicate the ownership proportions of the largest shareholders. These variables help to provide a comprehensive understanding of firm performance, market valuation, hedging activities, and ownership structures. This framework helps contextualize how these factors interact and potentially influence firm performance and market outcomes in corporate finance.

The summary of all variables as well as their definitions can be found in Table 1.

Table 1. Variable definition

Variables	Symbol	Operational Definition
Enterprise Value	TobinQ	Market value of tradable shares + Number of non-tradable shares × Net assets per share + Book value of liabilities) / Total assets
Corporate Hedging (Proxy1)	l_HedgeAmount	Gain or loss from hedge in a particular year) / 1 million
Corporate Hedging (Proxy2)	HedgeAmount1	The total amount of hedging
Enterprise Ownership	enterprise_own	Enterprise ownership
Top1_Shareholder	Top1	Ownership of Top1 shareholder
Top5_Shareholder	Top5	Ownership of Top5 shareholder
Top10_Shareholder	Top10	Ownership of Top10 shareholder
Board Size	Board	Total number of board members
Board Independence	Indep	Proportionate of an independent director to total board members
CEO Duality	Dual	1 if the CEO holds two designations, otherwise 0
CG Index	CG_index	Corporate governance index
Firm Size	Size	Log(total assets)
Leverage	Lev	Debt to asset ratio

Research models

To examine the impact of corporate hedging (*HedgeAmount*) on enterprise value (*TobinQ*), this paper focuses on regression analysis using the following econometric model:

$$TobinQ_{,t} = \beta_0 + \beta_1 * HedgeAmount_{,t} + \beta_2 i * Control\ Variables_{\ i,t} + \varepsilon_{i,t}$$

$$TobinQ_{,t} = \beta_0 + \beta_1 * HedgeAmount_{,t} + \beta_2 * Onwership_t + \beta_2 3 * HedgeAmount\ Ownership_t\ \beta_2 i * Control\ Variables_{\ i,t} + \varepsilon_{i,}$$

$$TobinQ_{,t} = \beta_0 + \beta_1 * HedgeAmount_{,t} + \beta_2 * Corporate\ Governance_t + \beta_2 3 * HedgeAmount\ Ownership_t\ \beta_2 i * Control\ Variables_{\ i,t} + \varepsilon_{i,}$$

Where:

- $X_{i,t}$ denotes a vector of control variables;
- $\varepsilon_{i,t}$ represents the error term, capturing unexplained variation in the enterprise value.

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As it was mentioned before, the choice of employing the Generalized Least Squares (*GLS*) model for panel data analysis in this research is driven by its effectiveness in handling certain statistical issues commonly encountered in empirical studies. Panel data, which combines cross-sectional and time-series data, often exhibits two key challenges: heteroscedasticity and autocorrelation. This approach enhances the validity of the findings and contributes to the robustness of the empirical analysis.

Results

Descriptive statistics

For TobinQ, the mean is 1.9710, indicating that, on average, firms are valued at approximately 1.97 times their asset replacement cost. This metric serves as a gauge of market sentiment and investor confidence in the firm's performance and growth prospects. A higher TobinQ typically suggests that the market perceives the firm's value positively relative to its tangible assets, reflecting strong market valuation and potentially better growth opportunities (Deng & Yang, 2023).

Moving to the hedging-related variables, the mean for l_HedgeAmount is 2.7290, with a standard deviation of 0.1960. This variable represents the logarithm of hedge amounts, indicating the extent of hedging activities undertaken by firms. The average value of 2.7290 suggests that, on average, firms engage in moderate to substantial hedging activities, which could signify efforts to manage risks associated with fluctuations in interest rates, foreign exchange rates, or commodity prices. Hedging can provide stability to cash flows and protect profitability, thus influencing firm strategies and financial performance (Liu, 2023).

Regarding ownership structure variables, enterprise ownership has a mean of 0.307, indicating that, on average, about 30.7% of firms in the dataset have enterprise ownership structures. Enterprise ownership often implies a more diversified and stable shareholder base, potentially contributing to better governance practices and strategic decision-making. Higher levels of enterprise ownership are generally associated with reduced agency costs and improved alignment of interests between management and shareholders, which can positively influence firm performance and valuation (Buriro et al., 2023).

For ownership concentration variables, Top1, Top5, and Top10 have mean values of 0.339, 0.538, and 0.591, respectively. These figures indicate the average proportion of ownership held by the largest Top 1, Top 5, and Top 10 shareholders. Higher mean values suggest greater ownership concentration among these groups, which can impact corporate governance dynamics and decision-making processes. High ownership concentration may enhance

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managerial discipline but could also lead to potential conflicts of interest and reduced managerial discretion (Chang et al., 2024).

In conclusion, these mean values provide foundational insights into the average characteristics of firms regarding their market valuation, hedging activities, and ownership structures. Understanding these averages helps contextualize how these factors interact and potentially influence firm performance and market outcomes in corporate finance (Vural-Yavas, 2016).

Table 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
TobinQ	12572	1.9710	1.3540	0.8020	17.7290
l_HedgeAmount	12714	2.7290	0.1960	-1.3090	3.1630
HedgeAmount1	12714	59123927	588200000	-18540000000	14680000000
enterprise_own	12714	0.307	0.461	0.000	1.000
Top1	12712	0.339	0.150	0.081	0.758
Top5	12712	0.538	0.158	0.185	0.892
Top10	12712	0.591	0.157	0.206	0.910
Board	12711	2.118	0.199	1.609	2.708
Indep	12711	0.379	0.055	0.286	0.600
Dual	12714	0.304	0.460	0.000	1.000
CG_index	12712	0.778	0.623	0.018	2.961
Size	12714	22.554	1.375	19.525	26.430
Lev	12714	0.431	0.202	0.035	0.925
Cashflow	12714	0.053	0.066	-0.196	0.257
ListAge	12714	2.150	0.905	0.000	3.367

Correlation matrix

The correlation matrix provides insights into the relationships among variables. The results show that TobinQ is positively correlated with size (0.34), cash flow (0.12), and board composition (0.11), indicating that larger firms with stronger cash flows and potentially more effective boards tend to have higher TobinQ values, reflecting better market valuation.

l_HedgeAmount shows a modest positive correlation with cash flow (0.04) and a negative correlation with TobinQ (-0.07), suggesting that higher hedge amounts are associated with lower firm valuation, possibly due to perceived risk management strategies affecting market perceptions. HedgeAmount1 positively correlates with l_HedgeAmount (0.16), indicating consistency between raw and logged hedge amount measures. It also shows negative correlations with TobinQ (-0.02) and enterprise ownership (-0.00), suggesting minimal direct relationships with firm value and ownership structures.

Enterprise_own is positively correlated with Top1 (0.24), Top5 (0.08), and Top10 (0.01). Enterprise ownership indicates a more dispersed ownership structure within firms. It is negatively correlated with TobinQ (-0.16),

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suggesting that higher levels of enterprise ownership may be associated with lower market valuations. Top1, Top5, and Top10 variables measure ownership concentration among the largest shareholders. They show positive correlations among each other (ranging from 0.64 to 0.97) and negative correlations with TobinQ (ranging from -0.09 to -0.12), indicating that higher ownership concentration tends to be associated with lower firm valuations (Nagahi et al., 2018).

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Table 3. Correlation matrix

	TobinQ	l_HedgeAmount	HedgeAmount1	enterprise_own	Top1	Top5	Top10	Board	Indep	Dual	CG_index	Size	Lev	Cashflow	ListAge
TobinQ	1.00														
l_HedgeAmount	-0.07***	1.00													
HedgeAmount1	-0.02**	0.16***	1.00												
enterprise_own	-0.16***	0.06***	-0.00	1.00											
Top1	-0.12***	0.00	-0.01	0.24***	1.00										
Top5	-0.11***	0.03**	0.01	0.08***	0.74***	1.00									
Top10	-0.09***	0.03**	0.01	0.01	0.64***	0.97***	1.00								
Board	-0.11***	0.06***	0.03**	0.22***	0.01	0.03***	0.03***	1.00							
Indep	0.03***	0.02*	0.01	-0.01	0.04***	0.04***	0.03**	-0.54***	1.00						
Dual	0.09***	-0.03**	0.02	-0.29***	-0.05***	0.00	0.03***	-0.17***	0.09***	1.00					
CG_index	0.06***	0.03**	0.03***	-0.25***	-0.69***	-0.14***	-0.01	0.03**	-0.03***	0.07***	1.00				
Size	-0.34***	0.39***	0.13***	0.38***	0.21***	0.18***	0.15***	0.26***	0.02*	-0.19***	-0.10***	1.00			
Lev	-0.28***	0.15***	0.05***	0.28***	0.06***	-0.02**	-0.06***	0.16***	0.00	-0.15***	-0.11***	0.54***	1.00		
Cashflow	0.12***	0.04***	-0.01	-0.04***	0.10***	0.14***	0.15***	0.03***	-0.00	-0.01	-0.01	0.06***	-0.17***	1.00	
ListAge	-0.06***	0.19***	0.03***	0.40***	-0.09***	-0.33***	-0.41***	0.14***	-0.01	-0.26***	-0.17***	0.40***	0.35***	-0.05***	1.00

Regression analysis

The Variance Inflation Factor (VIF) presents an analysis of potential multicollinearity among the independent variables in the regression model. VIF values measure how much the variance of a regression coefficient is inflated due to multicollinearity. A VIF value above 10 typically indicates high multicollinearity, which can distort the regression results.

In this table, all variables have VIF values well below 10, with "Size" having the highest VIF at 1.61 and "HedgeAmount1" the lowest at 1.02. The mean VIF is 1.29, indicating that multicollinearity is not a significant issue in this model. The 1/VIF values, which are the reciprocals of the VIFs, further confirm this by showing values close to 1, suggesting that the independent variables are not highly correlated and multicollinearity is minimal.

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Table 4. Regression analysis

Variable	VIF	1/VIF
Size	1.61	0.622809
Lev	1.54	0.648272
ListAge	1.23	0.809933
Cashflow	1.07	0.937588
HedgeAmount1	1.02	0.980056
Mean VIF	1.29	

The fixed effect regression results provide insights into the moderating role of ownership on the relationship between corporate hedging and firm value (TobinQ). The hedge amount in raw form shows a weak and mostly insignificant effect on TobinQ across all models, suggesting that hedge amounts do not have a strong direct impact on firm value. The values suggest that the combination of hedge amount and enterprise ownership does not significantly affect firm value (Nagahi et al., 2018). On the other hand, enterprise ownership shows a positive but insignificant effect on TobinQ, indicating that enterprise ownership alone may not significantly influence firm value (Vural-Yavas, 2016). The analysis shows that higher ownership concentration among the top five shareholders might negatively impact firm value. Top1 and Top10 also show negative coefficients, but these are not significant.

The lagged dependent variable (L.TobinQ) consistently shows a highly significant positive effect on TobinQ across all values, indicating strong persistence in firm value over time. For the variable HedgeAmount1 (hedge amount), the results are mixed. It has a positive and significant effect on TobinQ, suggesting that hedging activities initially enhance firm value.

The variable enterprise_ownership shows a highly significant positive effect on TobinQ, suggesting that firms with enterprise ownership tend to have higher market valuations. Additionally, the interaction between hedge amount and enterprise ownership is positive and significant, indicating that enterprise ownership strengthens the positive effect of hedging on firm value (Hong et al., 2020).

For Top1 (ownership concentration of the largest shareholder), the effect is significantly negative, implying that a higher concentration of ownership in the hands of the largest shareholder negatively impacts firm value. Similarly, Top5 has a significantly negative effect on Tobin Q, indicating that high ownership concentration among the top five shareholders reduces firm value. The interaction term HedgeAmount1_Top5 is insignificant, showing no significant moderating effect. Further, Top10 also shows a significantly negative effect on TobinQ, implying that concentrated ownership among the top ten shareholders is detrimental to firm value. The

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interaction term HedgeAmount1_Top10 is insignificant, indicating no moderating effect on the hedge amount and firm value relationship (Campbell et al., 2023).

Concluding that, hedging activities can positively impact firm value, the presence and concentration of large shareholders generally have a negative effect. The significant positive interaction between hedge amount and enterprise ownership suggests that enterprise ownership can enhance the benefits of hedging, while the other ownership concentrations do not significantly moderate the hedging-firm value relationship (Vural-Yavas, 2016).

The regression results for l_HedgeAmount provide mixed insights into its relationship with firm value, measured by TobinQ. l_HedgeAmount shows a significant positive effect on TobinQ (0.563, $p < 0.01$), indicating that increased hedge amounts are associated with higher firm value. This suggests that firms engaging in more hedging activities tend to be valued higher in the market, possibly due to reduced risk and increased stability in cash flows (Guay & Kothari, 2003).

When considering the interaction with enterprise ownership, the direct effect of l_HedgeAmount becomes negative and insignificant (-0.117), and the interaction term l_HedgeAmount_ent is positive but also insignificant (0.844). The enterprise ownership variable itself is also negative and insignificant (-0.127). These results indicate that the presence of enterprise ownership does not significantly moderate the relationship between hedge amounts and firm value (Nagahi et al., 2018)

The GMM results reveal that hedging activities, as measured by the logarithm of hedge amounts, have a positive impact on firm value (TobinQ), although this effect varies with model specifications. The lagged TobinQ consistently shows strong persistence in firm value across all models. Enterprise ownership significantly enhances firm value, indicating potential benefits from better governance. However, the interaction between hedge amounts and enterprise ownership is not significant, suggesting no moderating effect. Ownership concentration variables (Top1, Top5, Top10) generally exhibit negative but insignificant effects on firm value and do not significantly moderate the impact of hedging activities. Overall, while hedging positively influences firm value, the role of ownership concentration is limited, with enterprise ownership playing a more crucial role in enhancing firm performance.

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Table 5. Fixed effect regression (Model-l-moderating role of ownership)

VARIABLES	(1) TobinQ	(2) TobinQ	(3) TobinQ	(4) TobinQ	(5) TobinQ
HedgeAmount1	0.00435	0.00349	-0.000778	-0.00116	-0.000970
	(0.00624)	(0.00846)	(0.00777)	(0.00777)	(0.00777)
enterprise_own		0.117			
		(0.266)			
HedgeAmount1_ent		-0.00797			
		(0.0167)			
Top1			-0.461		
			(0.394)		
HedgeAmount1_Top1			0.00423		
			(0.0141)		
Top5				-0.656*	
				(0.352)	
HedgeAmount1_Top5				0.00403	
				(0.0141)	
Top10					-0.417
					(0.321)
HedgeAmount1_Top10					0.00441
					(0.0141)
Size	-0.525***	-0.446***	-0.431***	-0.416***	-0.413***
	(0.0266)	(0.121)	(0.0550)	(0.0550)	(0.0556)
Lev	0.137	-0.0319	0.247	0.220	0.193
	(0.115)	(0.360)	(0.265)	(0.262)	(0.262)
Cashflow	0.839***	-0.0859	1.320***	1.317***	1.320***
	(0.171)	(0.443)	(0.365)	(0.365)	(0.365)
ListAge	0.649***	0.271	0.523***	0.496***	0.510***
	(0.0339)	(0.184)	(0.0959)	(0.0974)	(0.0983)
Constant	12.32***	11.29***	10.62***	10.56***	10.35***
	(0.556)	(2.641)	(1.212)	(1.185)	(1.176)
F-Stats(P value)	0.000	0.000	0.000	0.000	0.000
Hausman Test(P value)	0.000	0.000	0.000	0.000	0.000
Observations	12,572	913	2,556	2,556	2,556
R-squared	0.052	0.036	0.051	0.053	0.051
Number of id	3,252	369	1,091	1,091	1,091

Table 6. GMM results (Model-l-moderating role of ownership)

VARIABLES	TobinQ	TobinQ	TobinQ	TobinQ	TobinQ
L.TobinQ	0.583***	0.167***	0.480***	0.469***	0.473***
	(0.0166)	(0.0313)	(0.0488)	(0.0488)	(0.0491)
HedgeAmount1	0.0110**	-0.00719**	-0.00239	-0.00278	-0.00467
	(0.00435)	(0.00336)	(0.00699)	(0.00687)	(0.00697)
enterprise_own		0.960***			
		(0.306)			
HedgeAmount1_ent		0.0378***			
		(0.0115)			
Top1			-2.284***		

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			(0.724)		
HedgeAmount1_Top1			0.0182		
			(0.0206)		
Top5				-1.832***	
				(0.678)	
HedgeAmount1_Top5				0.0230	
				(0.0202)	
Top10					-1.043**
					(0.515)
HedgeAmount1_Top10					0.0256
					(0.0204)
Size	-0.384***	-0.494***	-0.354***	-0.284***	-0.313***
	(0.0518)	(0.0865)	(0.0897)	(0.0914)	(0.0935)
Lev	0.286	-1.257***	1.075*	0.828	0.646
	(0.254)	(0.350)	(0.623)	(0.619)	(0.590)
Cashflow	1.105***	-0.138	3.163***	3.284***	3.217***
	(0.221)	(0.309)	(0.570)	(0.555)	(0.558)
ListAge	0.258***	-0.283	-0.888***	-0.968***	-0.895***
	(0.0622)	(0.258)	(0.199)	(0.209)	(0.210)
Constant	8.795***	13.21***	11.66***	10.56***	10.77***
	(1.100)	(1.932)	(1.987)	(1.951)	(1.959)
Observations	8,795	780	2,161	2,161	2,161
Number of id	2,565	332	991	991	991

Table 7. Fixed effect regression (Model-2-moderating role of ownership)

VARIABLES	TobinQ	TobinQ	TobinQ	TobinQ	TobinQ
l_HedgeAmount	0.563***	-0.117	0.135	-0.0578	-0.248*
	(0.148)	(0.870)	(0.0912)	(0.129)	(0.138)
enterprise_own		-0.127			
		(0.123)			
l_HedgeAmount_ent		0.844			
		(2.213)			
Top1			-1.216**		
			(0.475)		
l_HedgeAmount_Top1			0.175		
			(0.147)		
Top5				-2.389***	
				(0.612)	
l_HedgeAmount_Top5				0.685**	
				(0.278)	
Top10					-3.035***
					(0.616)
l_HedgeAmount_Top10					1.170***

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					(0.305)
Size	-0.430***	-0.511***	-0.540***	-0.517***	-0.508***
	(0.0522)	(0.0458)	(0.0269)	(0.0271)	(0.0274)
Lev	0.363	0.287	0.175	0.118	0.100
	(0.253)	(0.180)	(0.115)	(0.115)	(0.115)
Cashflow	1.097***	0.292	0.827***	0.826***	0.813***
	(0.220)	(0.229)	(0.171)	(0.171)	(0.171)
ListAge	0.214***	0.393***	0.589***	0.533***	0.527***
	(0.0641)	(0.0900)	(0.0362)	(0.0380)	(0.0386)
L.TobinQ	0.590***				
	(0.0165)				
Constant	8.358***	12.00***	12.85***	13.61***	14.16***
	(1.124)	(0.985)	(0.654)	(0.776)	(0.782)
F-Stats(P value)					
Hausman test(P value)					
Observations	8,795	3,858	12,569	12,569	12,569
R-squared		0.057	0.054	0.056	0.056
Number of id	2,565	870	3,251	3,251	3,251

Table 8. GMM results (Model-2-moderating role of ownership)

	(1)	(2)	(3)	(4)
VARIABLES	TobinQ	TobinQ	TobinQ	TobinQ
L.TobinQ	0.547***	0.585***	0.583***	0.583***
	(0.0193)	(0.0168)	(0.0167)	(0.0166)
l_HedgeAmount	1.040*	0.714***	0.744***	0.371
	(0.589)	(0.141)	(0.230)	(0.261)
enterprise_own	0.411***			
	(0.154)			
l_HedgeAmount_ent	-1.896			
	(1.458)			
Top1		0.647		
		(0.855)		
l_HedgeAmount_Top1		-0.260		
		(0.248)		
Top5			-0.424	
			(1.273)	
l_HedgeAmount_Top5			-0.371	
			(0.585)	
Top10				-2.226
				(1.390)
l_HedgeAmount_Top10				0.683
				(0.692)

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Size	-0.359***	-0.422***	-0.370***	-0.372***
	(0.0434)	(0.0528)	(0.0539)	(0.0545)
Lev	0.0498	0.386	0.427	0.411
	(0.263)	(0.260)	(0.261)	(0.259)
Cashflow	-0.135	1.085***	1.100***	1.087***
	(0.172)	(0.219)	(0.220)	(0.219)
ListAge	-0.0789	0.178***	0.0456	0.0507
	(0.155)	(0.0680)	(0.0786)	(0.0763)
Constant	7.763***	7.574***	7.211***	8.926***
	(1.096)	(1.314)	(1.600)	(1.637)
Observations	2,872	8,794	8,794	8,794
Number of id	744	2,565	2,565	2,565

Regression analysis (Moderating role of corporate governance)

The analysis presents the moderating role of corporate governance (CG) on the relationship between hedge amounts and firm value (TobinQ) with fixed effect regressions. The coefficients for HedgeAmount1, which represents logged hedge amounts, show insignificant effects on TobinQ, except where it becomes marginally significant (0.00396, $p < 0.1$). The interaction term l_HedgeAmount, however, is positively significant (0.102, $p < 0.001$), indicating that the impact of hedge amounts on firm value increases with better corporate governance practices. Overall, while hedge amounts alone do not robustly predict TobinQ, their interaction with corporate governance highlights a nuanced relationship where effective governance can amplify the positive impact of hedging on firm value (Guay & Kothari, 2003). In model 2. the fixed effect regression results explore how corporate governance (CG) moderates the relationship between hedge amounts (l_HedgeAmount) and firm value (TobinQ). l_HedgeAmount shows inconsistent effects, significantly positive (1.729, $p < 0.1$).

Moreover, GMM results in model 1, focusing on the moderating role of corporate governance (CG) concerning hedge amounts and firm value (TobinQ). Across the models, L.TobinQ consistently shows a positive and significant coefficient, indicating strong persistence in firm value over time. Regarding HedgeAmount1, its impact on TobinQ varies. The interaction term l_HedgeAmount is positively significant (0.0877, $p < 0.05$), indicating the relationship between hedge amounts and firm value strengthens with better corporate governance. These findings highlight the intricate interplay between hedging strategies, corporate governance quality, and firm valuation, underscoring the crucial role of governance frameworks in shaping how financial practices impact firm performance (Guay & Kothari, 2003). L.TobinQ, representing lagged firm value, consistently shows a positive and significant effect (coefficients range from 0.406 to 0.530, $p < 0.01$), indicating

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strong persistence in firm performance. Notably, l_HedgeAmount exhibits varying impacts: highly significant and positive (coefficients around 7.090 to 7.078, $p < 0.01$), suggesting a robust positive relationship between hedging activities and firm value. Overall, these findings highlight the nuanced role of corporate governance in shaping the relationship between hedging activities and firm performance, with board composition and leadership structure influencing this relationship in distinct ways (Buriro et al., 2023).

Table 9. Fixed effect regression (Model-l-moderating role of corporate governance)

VARIABLES	(1) TobinQ	(2) TobinQ	(3) TobinQ	(4) TobinQ
HedgeAmount1	-0.000431	-0.000513	-0.00286	0.00396
	(0.00778)	(0.00778)	(0.0159)	(0.00624)
Board	0.0156			
	(0.181)			
HedgeAmount1_Board	0.00408			
	(0.0141)			
Indep		0.247		
		(0.527)		
HedgeAmount1_ind		0.00414		
		(0.0141)		
zee_Dual			0.604	
			(0.510)	
HedgeAmount1_dual			-0.0355	
			(0.0298)	
CG_index				-0.181***
				(0.0571)
l_HedgeAmount_CG_index				0.102***
				(0.0333)
Size	-0.425***	-0.425***	-0.0578	-0.527***
	(0.0548)	(0.0548)	(0.141)	(0.0273)
Lev	0.204	0.205	0.793	0.153
	(0.262)	(0.262)	(0.693)	(0.116)
Cashflow	1.336***	1.329***	1.118	0.841***
	(0.365)	(0.366)	(0.833)	(0.171)
ListAge	0.553***	0.549***	0.678***	0.636***
	(0.0933)	(0.0928)	(0.248)	(0.0341)
Constant	10.24***	10.19***	0.488	12.48***
	(1.236)	(1.192)	(3.773)	(0.568)
F-Stats(P value)	0.000	0.000	0.000	0.000
Hausman test(P value)	0.000	0.000	0.000	0.000
Observations	2,556	2,556	722	12,569
R-squared	0.050	0.051	0.041	0.053
Number of id	1,091	1,091	380	3,251

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Table 10. GMM results (Model-l-moderating role of corporate governance)

VARIABLES	(1) TobinQ	(2) TobinQ	(3) TobinQ	(4) TobinQ
L.TobinQ	0.478***	0.479***	0.505***	0.583***
	(0.0489)	(0.0486)	(0.0655)	(0.0165)
HedgeAmount1	-0.00509	-0.00538	-0.0188	0.0107**
	(0.00737)	(0.00729)	(0.0131)	(0.00426)
Board	-0.225			
	(0.285)			
HedgeAmount1_Board	0.0221			
	(0.0210)			
Indep		0.0195		
		(0.574)		
HedgeAmount1_ind		0.0234		
		(0.0208)		
zee_Dual			-3.228***	
			(0.457)	
HedgeAmount1_dual			0.00894	
			(0.0255)	
CG_index				-0.232**
				(0.106)
l_HedgeAmount_CG_index				0.0877*
				(0.0510)
Size	-0.368***	-0.377***	-1.094***	-0.376***
	(0.0952)	(0.0932)	(0.221)	(0.0536)
Lev	0.580	0.540	1.274	0.306
	(0.592)	(0.593)	(0.863)	(0.256)
Cashflow	3.092***	3.116***	3.635***	1.117***
	(0.586)	(0.589)	(0.813)	(0.220)
ListAge	-0.736***	-0.718***	-1.081***	0.241***
	(0.190)	(0.188)	(0.227)	(0.0625)
Constant	11.52***	11.24***	33.02***	8.785***
	(2.030)	(2.084)	(5.347)	(1.134)
Observations	2,161	2,161	601	8,794
Number of id	991	991	335	2,565

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Table 11. Fixed effect regression model (Model-2-moderating role of corporate governance)

VARIABLES	(1) TobinQ	(2) TobinQ	(3) TobinQ	(4) TobinQ
l_HedgeAmount	0.599	0.593	1.729	0.516
	(0.754)	(0.754)	(1.817)	(0.716)
Board	0.0236			
	(0.181)			
HedgeAmount1_Board	-0.0169			
	(0.0289)			
Indep		0.292		
		(0.529)		
HedgeAmount1_ind		-0.0167		
		(0.0289)		
zee_Dual			0.831	
			(0.564)	
HedgeAmount1_dual			-0.0924	
			(0.0634)	
CG_index				0.0115
				(0.0807)
HedgeAmount1_CG_index				-0.0133
				(0.0271)
Size	-0.435***	-0.434***	-0.0654	-0.432***
	(0.0561)	(0.0561)	(0.141)	(0.0569)
Lev	0.217	0.218	0.784	0.209
	(0.262)	(0.262)	(0.692)	(0.265)
Cashflow	1.324***	1.317***	1.050	1.327***
	(0.366)	(0.366)	(0.835)	(0.366)
ListAge	0.515***	0.511***	0.662***	0.520***
	(0.105)	(0.105)	(0.248)	(0.103)
Constant	8.762***	8.690***	-4.795	8.965***
	(2.227)	(2.242)	(6.756)	(2.178)
F-Stats(P value)	0.000	0.000	0.000	0.000
Hausman test(P value)	0.000	0.000	0.000	0.000
Observations	2,556	2,556	722	2,556
R-squared	0.051	0.051	0.044	0.051
Number of id	1,091	1,091	380	1,091

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Table 12. GMM results (Model-2-moderating role of corporate governance)

VARIABLES	(1) TobinQ	(2) TobinQ	(3) TobinQ	(4) TobinQ
L.TobinQ	0.406***	0.405***	0.530***	0.417***
	(0.0477)	(0.0474)	(0.0658)	(0.0487)
l_HedgeAmount	7.090***	7.078***	2.843**	5.823***
	(0.997)	(0.992)	(1.422)	(0.916)
Board	0.124			
	(0.281)			
HedgeAmount1_Board	-0.235***			
	(0.0420)			
Indep		0.367		
		(0.576)		
HedgeAmount1_ind		-0.235***		
		(0.0418)		
Dual			-2.387***	
			(0.710)	
HedgeAmount1_dual			-0.0928*	
			(0.0538)	
CG_index				0.129
				(0.0964)
HedgeAmount1_CG_index				-0.178***
				(0.0381)
Size	-0.674***	-0.671***	-0.995***	-0.572***
	(0.111)	(0.109)	(0.255)	(0.108)
Lev	1.201*	1.177*	1.290	1.010
	(0.629)	(0.629)	(0.859)	(0.614)
Cashflow	1.902***	1.912***	3.385***	1.804***
	(0.583)	(0.584)	(0.800)	(0.582)
ListAge	-1.090***	-1.095***	-1.038***	-1.140***
	(0.205)	(0.205)	(0.232)	(0.206)
Constant	-2.253	-2.545	20.81**	-0.785
	(2.963)	(3.003)	(9.588)	(2.878)
Observations	2,161	2,161	601	2,161
Number of id	991	991	335	991

Discussion

The findings of this study offer significant insights into the complex interplay between hedging activities, ownership structures, and corporate governance on firm value, particularly within Chinese-listed firms. In line with prior research by Buriro et al. (2023) and Deng et al. (2023), our results affirm

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that hedging activities positively influence firm valuation, as measured by Tobin's Q.

This study highlights that while ownership concentration has a direct negative impact on firm value, its moderating effect on the relationship between hedging and firm value is minimal. This finding suggests that although ownership concentration can restrict managerial discretion and potentially limit firm performance, it does not significantly alter the efficacy of hedging strategies. This aligns with Chang et al. (2024), who discuss the potential drawbacks of concentrated ownership in limiting innovation and managerial flexibility.

Moreover, our results underscore the crucial role of corporate governance in amplifying the benefits of hedging strategies. Firms with robust governance structures with higher levels of transparency, accountability, and strategic oversight are more adept at leveraging hedging activities to enhance firm value. This is consistent with the perspectives of Landi et al. (2022), who emphasize that effective governance practices ensure that hedging decisions are made with the primary goal of enhancing firm value, thus reinforcing the positive impact of hedging strategies.

The interaction between corporate governance and hedging activities underscores the importance of context-specific factors. Our analysis indicates that firms with strong governance frameworks benefit more from hedging activities, suggesting that effective corporate governance is essential for maximizing the potential advantages of hedging strategies. This finding supports the views of Al-Gamrh et al. (2020) on the significant role of governance in strategic decision-making and risk management.

While this study contributes to the existing literature, it is important to acknowledge its limitations. The exclusive focus on Chinese-listed firms may limit the generalizability of the findings to other geographic contexts. Additionally, the study employs specific measures of hedging activities (gains or losses from hedging) and firm value (Tobin's Q), which may not fully capture the multidimensional nature of these constructs. Future research could explore alternative measures and methodologies to validate and extend the current findings.

Conclusion

This study contributes to the ongoing debate on the impact of hedging and ownership structures on firm value. The findings suggest that while ownership concentration has a direct negative impact on firm value, its moderating effect on the relationship between hedging and firm value is not substantial. These results have practical implications for corporate governance, indicating that firms should consider the distribution of ownership when assessing the potential benefits of hedging strategies. Future

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research could further explore these dynamics in different contexts and industries to provide a more comprehensive understanding of these relationships.

In conclusion, this study provides a nuanced understanding of how hedging activities, ownership structures, and corporate governance collectively influence firm value. The findings highlight that while hedging activities can potentially enhance firm value, their impact varies across different models, suggesting the importance of context-specific factors and interactions. Specifically, robust corporate governance practices significantly bolster the positive effects of hedging on firm performance. Enterprises with strong governance frameworks tend to leverage hedging strategies more effectively, mitigating risks and enhancing overall market valuation (De Boer et al., 2020).

Conversely, the study underscores the detrimental impact of high ownership concentration among major shareholders on firm value. This suggests that while concentrated ownership may align interests and foster strategic direction, it can also limit managerial discretion and hinder firm performance, especially when not complemented by effective governance mechanisms (Antunez et al., 2023).

Moreover, the positive association between enterprise ownership and firm value underscores the role of governance in strategic decision-making and long-term value creation. Enterprises with substantial ownership by institutional investors or diversified shareholders tend to benefit from enhanced oversight and strategic alignment, which positively impact market valuation (Kukaj et al., 2023).

Effective corporate governance mechanisms thus emerge as critical facilitators in amplifying the benefits of hedging strategies. By ensuring transparency, accountability, and strategic oversight, governance practices enable firms to navigate uncertainties more adeptly, thereby enhancing shareholder value and financial stability (De Boer et al., 2020).

These insights carry significant implications for corporate leaders and policymakers alike. They underscore the importance of tailoring governance frameworks to suit specific organizational contexts and market dynamics. By fostering environments conducive to effective risk management and strategic decision-making, firms can optimize their financial strategies amidst diverse ownership structures and regulatory landscapes (Hong et al., 2020).

Looking ahead, future research could further explore sector-specific nuances and global variations in governance practices to deepen our understanding of how these dynamics influence firm performance over time. By expanding our knowledge base, we can better inform policy recommendations and strategic initiatives aimed at fostering sustainable growth and value creation in corporate finance and governance (Liu, 2023).

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