

CORPORATE GOVERNANCE AND FINANCIAL DERIVATIVES USAGE: EVIDENCE FROM NON-FINANCIAL FIRMS ON THE PAKISTAN STOCK EXCHANGE

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Abstract

This paper focuses on the correlation between the corporate governance practices and non-financial business companies that use financial derivatives to trade on the Pakistan Stock Exchange (PSX). By relying on the agency theory and risk management theory, the study examines how board structure, CEO duality, and audit committee independence impact firms to use derivatives and any other firm specific variables include size, leverage, liquidity, and profitability. An analysis of a balanced panel dataset of 400 firms was done with the use of logistic and linear regression models in SPSS in the year 2010-24. The results also show that independent boards, as well as effective audit committees, largely increase the likelihood of using derivatives in hedging but do not increase the chances of adoption by the CEO duality. Leveraged and bigger firms as well as those, which are more profitable, are more likely to engage in derivatives though liquidity seems to be less significant. Moreover, the correlation between governance systems and the use of derivatives can be enhanced through the exchange rate and interest rate volatility which highlights the significance of the macroeconomic setup in determining risk management activities. These findings generalize corporate governance and risk management theories to an environment that is an emerging economy and has significant implications to regulators, policymakers, managers and investors in Pakistan.

INTRODUCTION

The global financial markets have rendered the firms more vulnerable to the exchange rates, interest rates and the fluctuation of commodity prices. To attempt these uncertainties, the financial derivatives have become an instrument that cannot be eliminated in minimizing risk and financial stability (Hull, 2018). Derivatives usage by companies have been widely researched in the developed economies and the findings have shown that derivatives are increasingly used in the hedging operations thereby enhancing financial sustainability (Bartram, Brown, and Fehle, 2009; Bodnar et al., 2022).

But the picture at the developing markets is less apparent. A particular issue to risk management practices of firms is the institutional flaws, inefficient application of corporate governance codes, and concentrated ownership ownership (Claessens and Yurtoglu, 2013). A case in point is Pakistan. The PSX companies have been facing long term macroeconomic factors including inflation, exchange rates, and fluctuating interest rates. The sensitivity of corporate governance in such environment is further compounded by the fact that the decision on whether to apply derivatives by firms in hedging and not speculation is arrived at.

Although the problem is extremely topical, there is minimal empirical evidence on the matter of governance-derivatives nexus of Pakistan, particularly the one that deals with non-financial corporations. Most of the past studies are founded on financial institutions or on the character of governance performance interrelations, but not on the specific effect of governance on using derivatives. It is therefore a big gap that the research fills because it integrates corporate governance frameworks, firm-specific, and macroeconomic volatility into one of the derivative adoption models.

2. Literature Review

2.1 Corporate Governance and Agency Theory

The agency theory implies that managers can be driven to act in their own interest at the expense of the shareholders unless proper monitoring of the managers is implemented (Jensen and Meckling, 1976). Good governance arrangements like independent board and audit committees minimize agency costs and push managers to practice risk management that are in line with the interests of the shareholders (Shleifer and Vishny, 1997). On the other hand, CEO duality, which involves the presence of one person in the CEO and chairperson positions, undermines control and enhances the chances of self-interest decision making (Jensen, 1993).

2.2 Governance Systems and Derivative application.

Stronger monitoring and prudent use of derivatives are connected with the independent directors (Allayannis and Weston, 2001). This association is corroborated by recent evidence: Sikarwar et al. (2022) indicate that more board-independent and large firms address the exchange rate risk by using derivatives better. The audit committees still play the key role of identifying the information asymmetry and transparency (Klein, 2002; McMullen and Raghunandan, 1996) and their effectiveness has been demonstrated to moderate the effect of derivatives on firm value in emerging markets (Corporate Derivatives Use and Firm Value, 2023). Huge boards can offer various experience but too big boards could decrease the efficiency of the decisions making (Coles, Daniel, and Naveen, 2008). The adoption of derivatives is usually reduced in the presence of CEO duality as it reduces checks and balances (Wang, Xie, and Zhu, 2006).

2.3 Company-Specific Characteristics.

Earlier research reveals that bigger corporations (those with greater exposure and resources) have more chances of utilizing derivatives (Bodnar, Hayt, and Marston, 1998; Bartram et al., 2009). The use of leverage and profitability also are found to have positive effects on derivative adoption in that the companies with greater financial responsibility and higher earnings have more incentive and ability to hedge risk (Jin and Jorion, 2006). Liquidity has however been seen to have mixed impacts with some companies using cash reserves in place of derivatives as a risk.

2.4 Emerging Market Context

Studies in Pakistan have identified some of these issues as the focused family ownership and poor governance codes implementation, which limit the efforts of firms to adopt effective risk management practices (Cheema, Bari, and Saddique, 2003; Javid and Iqbal, 2008). Despite the reforms by the Securities and Exchange Commission of Pakistan (SECP, 2019) that tried to improve governance, recent research indicates that the difference between regulation and practice remains (Corporate Governance in Pakistan: Practices and Challenges, 2025). This loophole highlights the need and relevance of using empirical research to determine the role played by governance in the adoption of derivatives.

3. Methodology

3.1 Data and Sample

The research is based on secondary data of 400 non-financial companies that were listed on PSX during the years 2010-2024 and their annual reports. The financial institutions were not included as they have different regulatory and reporting requirements.

3.2 Variables

Derivative usage will be the dependent variable in the form of a binary variable (1 user 0 non-user). The independent variables are the board size, board independence, CEO duality and audit committee independence. The control variables are the size of the firm (log of assets), leverage (debt ratio), liquidity (current ratio) and profitability (ROA). Moderating variables are exchange rate and interest rate volatility which were accessed in the reports of the State Bank of Pakistan.

3.3 Analytical Techniques

The probability of derivative adoption was analyzed by means of logistic regression and the level of usage was measured by means of linear regression. Moderating effect tests were done by including interaction terms. All the analyses were done in SPSS, and strong standard errors were put to deal with the heteroskedasticity.

4. Results

4.1 Descriptive Statistics

The descriptive statistics are shown in Table 1. About 42 percent of the companies used the derivatives in the course of the research. The average size of boards of firms was eight and 36 percent of independence and CEO duality in 28 percent of firms.

Table 1 Descriptive Statistics of the Variables (2010–2024, N = 400 Firms)

Variable	Mean	Std. Dev.	Min	Max
Derivative Usage (Dummy)	0.42	0.49	0	1
Board Size	7.80	2.05	4	15
Board Independence (%)	36.40	12.20	10	70
CEO Duality (Dummy)	0.28	0.45	0	1
Audit Committee Independence (%)	52.00	14.20	20	90
Firm Size (Ln Assets)	15.80	1.40	12.30	19.20
Leverage (%)	54.60	18.30	15	95
Liquidity (CR)	1.80	0.65	0.80	3.50
Profitability (ROA %)	6.20	4.10	-5.00	18.00
Exchange Rate Volatility (%)	7.50	2.40	2.10	12.80
Interest Rate Volatility (%)	5.90	1.95	1.20	10.10

4.2 Correlation Analysis

The correlation coefficient (Table 2) shows that the derivatives usage is positively correlated with the board independence, firm size, leverage, and profitability, and the correlation between CEO duality and derivative usage is negative.

Table 2 Correlation Matrix

Variable	Derivatives	Board Indep.	CEO Duality	Firm Size	Leverage	Profitability
Derivatives	1	0.32**	-0.18*	0.41**	0.29**	0.25**
Board Independence	0.32**	1	-0.24**	0.21**	0.15*	0.12*
CEO Duality	-0.18*	-0.24**	1	-0.10	-0.05	-0.08
Firm Size	0.41**	0.21**	-0.10	1	0.34**	0.27**

*Note. ** $p < .01$; $p < .05$.

4.3 Regression Results

According to the findings of the logistic regression presented in Table 3, board independence, audit committee independence, firm size, leverage, and

profitability increase greatly the probability of derivatives utilization. CEO duality has a negative effect on adoption, whereas the liquidity does not matter.

Table 3 Logistic Regression Results (Dependent Variable: Derivative Usage)

Variable	β	SE	Exp(β)	p-value
Board Independence (%)	0.225	0.065	1.25	0.001**
CEO Duality (Dummy)	-0.315	0.105	0.73	0.004**

Audit Committee Indep. (%)	0.182	0.054	1.20	0.002**
Firm Size (Ln Assets)	0.340	0.072	1.40	0.000**
Leverage (%)	0.196	0.082	1.21	0.015*
Profitability (ROA %)	0.210	0.090	1.23	0.018*
Liquidity (CR)	0.052	0.065	1.05	0.420

4.4 Moderation Analysis

The fact that the independence of the audit committee has a positive and significant impact of derivative usage can be reasonably explained by the logic according to which better governance decreases the information asymmetry and helps to manage risks. Such results are also indicated in Toerien (2023), where the authors demonstrate that derivative disclosure on emerging markets has a positive effect

on the valuation of the firm through the increase of transparency. Having the evidence that substantive governance and not symbolic compliance is what helps firms to strategically use derivatives to achieve resilience is justified in the case of Pakistan, where the practice of governance is often less rules than a regulatory code (Corporate Governance in Pakistan: Practices and Challenges, 2025).

Table 4 Moderation Effects of Macroeconomic Volatility

Interaction Term	β	SE	p-value
Board Independence $\times$ Exchange Rate Volatility	0.312	0.092	0.001**
Audit Committee $\times$ Interest Rate Volatility	0.287	0.084	0.002**

5. Discussion

The findings of the study are highly supportive of the agency theory as they indicate that the independent boards and audit committees encourage the use of derivatives based on the hedging purpose. This result corresponds with the previous research in developed markets (Allayannis and Weston, 2001; Bartram et al., 2009) and the strength of governance in the environment with less institutional framework.

The adverse impact of CEO duality is another strong point that can confirm that the concentration of decision-making authority is detrimental to monitoring and the chances to effectively manage risks are less probable (Jensen, 1993). The adoption is

positively affected by firm size, leverage, and profitability, as it is also supported by the international evidence (Bodnar et al., 1998; Jin and Jorion, 2006).

Significantly, macroeconomic volatility enhances the governance-derivatives association that indicates that Pakistani firms use well-developed governance system to deal with risks during the volatile times. This offers some new information about the relationship between firm-level governance and external shocks

and expands the risk management theory to an emerging market-based context (Raza & Saeed, 2023).

6. Final thoughts and conclusions.

The research paper gives empirical support that the corporate governance mechanisms play a significant role in determining the derivative practice of non-financial firms in Pakistan. Board independence and strong audit committees encourage adoption of derivatives whereas CEO duality discourages the same. Greater, levered and profitable companies are more inclined to use derivatives and the effects of governance are enhanced by macroeconomic volatility.

6.1 Theoretical Implications

The results generalize the theory of agency and risk management to an emerging economy, and go ahead to establish that governance arrangements determine the management of risk in a volatile macroeconomic environment.

6.2 Methodological Contributions.

The research methodologically enriches the 15 years old panel sample of 400 PSX companies by virtue of

employing SPSS-based logistic and linear regression models and moderation analysis.

6.3 Practical and Policy Implications.

Among the managers, the findings are important to underscore the significance of reforms in governance to aid in risk management. To regulators, especially SECP, the evidence underscores the importance of tightening of governance codes to bring about financial resilience. To the investors, the results provide indicators on the effects of the quality of governance on the exposure of firms to financial risks. In addition to adoption of derivatives, recent research has noted that the overall risk of financial distress among firms can be mitigated by having a stronger governance. As an example, a 2023 study on corporate governance and default probability revealed that good governance reduces the chances of default, and this situation supports the role of governance in risk management in emerging markets on a large scale (Corporate Governance and Default Probability, 2023).

7. Limitations and Future Research.

The study concentrates on non-financial companies and secondary data. Future research may build upon the analysis of the financial institutions, use primary survey data, and examine other indicators of governance including the ESG indicators. More sophisticated econometric methods as generalized method of moments (GMM) and structural equation modeling (SEM) can also be used to clean up the causal inferences.

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