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The Nexus Between Corporate Governance Improvements, Corporate Investment and Value Creation: Evidence from Shariah-Compliant Companies

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Abstract: This paper investigates the effects of corporate governance improvements on value creation's sensitivity to corporate investment for non-financial firms listed on the Saudi Stock Exchange, covering 100 Shariah-compliant companies from 2020-2023. The author uses multivariate regression analyses to verify the proposed hypotheses. The study finds that corporate governance improvements—such as higher ownership concentration, larger boards, CEO duality, and independent boards—significantly impact investment-driven value creation. This highlights the importance of strong corporate governance in managing investments to create value through effective, focused decision-making. This research suggests some implications and recommendations for companies, investors, and other stakeholders to make appropriate behavioral decisions related to the ownership structures and board characteristics to ensure a high level of Value Creation.

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1. Introduction

The determinants of value creation are of central interest to finance, strategy, and organizations scholars. Formal theorizing and empirical studies within this research stream focus on contracting efficiency and the resulting value creation. The effects of corporate governance improvements on the sensitivity of value creation to corporate investment are profound and multi-faceted.

Good corporate governance is crucial as it helps improve companies' performance and enhance shareholders' value (Zahada & Fadhilah, 2024; Alodat et al., 2022). Good corporate governance mechanisms strengthen the alignment of management and shareholders, resulting in better investment decisions and increased value creation. Companies must take strong governance practices to align the interests of management with those of shareholders and other stakeholders and reduce the divergence of interests between managers and shareholders. This alignment increases the likelihood that investments will focus on long-term value creation rather than short-term gains and minimize overinvestment (empire building) and underinvestment (risk aversion). Strong governance ensures that only value-enhancing projects are pursued, increasing the marginal return on investment and improving the project selection.

Effective boards, audit committees, and external governance mechanisms enhance oversight, ensuring investments align with strategic objectives. Better corporate governance enhances risk assessment and management processes. This allows companies to make more informed investment decisions, potentially increasing the positive impact of investments on value creation. Good corporate governance ensures increased sensitivity to Value Creation. Governance mechanisms like performance-based pay link management decisions to shareholder value, making investments more responsive to profitability and market conditions.

Transparency and robust reporting reduce uncertainty and information asymmetry, thus enabling shareholders and other stakeholders to evaluate better the consequences of investment choices

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on firm value. This is because improved governance systems also help decisions to enhance transparency and accountability in corporate decision-making. In an analysis of connection with corporations with the firm aim of their corporate decision governance, making the process therein. Good corporate governance makes investment decisions more closely tied to value-creation objectives.

Strong corporate governance improves the organization's focus from the mere pursuit of short-term profits to the quest for sustainable values. This approach may lead to investments that can significantly and positively impact the company's value over a more extended period. Institutional investors are attracted by good governance practices that compel organizations to be accountable, enhancing the emphasis on value-adding investments. Such practices include proper governance, which sends a message to investors that the firm is serious about creating value for its shareholders, which leads to high stock prices. Improved governance requires an understanding of the needs and wants of all the stakeholders. Such an approach can help identify the investments that will generate value for shareholders and other stakeholders, employees, and customers, and, in turn, society may lead to the generation of sustainable value in the long run. It also enables the company to have better capital allocation processes.

This ensures that investments are made in areas with the highest potential for value creation, increasing the overall sensitivity of value creation to corporate investment. Good governance practices improve access to capital. Governance improvements lower the firm's cost of capital, enabling previously unfeasible investments and expanding value-creation opportunities. Governance frameworks that balance short-term performance pressures with long-term growth encourage sustainable investment strategies.

Corporate governance improvements can significantly enhance the relationship between corporate investment and value creation by promoting better decision-making, aligning interests, managing risks, and focusing on long-term sustainable growth.

Prior research on value creation indicates that managerial decisions about investment and corporate governance mechanisms strongly influence value creation for stockholders (e.g., Mitton, 2004; Fan & Wong, 2002; Claessens et al., 2002; Lemmon & Lins, 2003; Joh, 2003; Hamdouni, 2014). Little evidence is available on whether firms' investment policies in the Islamic market are related to their governance structures. Prior research has focused on traditional companies, and to our knowledge, only the study of Hamdouni (2014) has been conducted in the context of Sharia-compliant companies. Based on the extant research, there is an argument in favor of more research that examines the impact of corporate governance improvements on value creation's sensitivity to corporate investment using data from Saudi Arabia and the Islamic framework.

This research issue will cover the topic of value creation in Shariah-compliant firms and non-Shariah-compliant firms. This study presents data and methods to examine the effect of corporate governance improvements on value creation's sensitivity to corporate investment of listed firms in Saudi Arabia. Section 2 introduces the hypothesis development and its theoretical underpinnings. Section 3 explains the research methodology. Section 4 presents the results and discussion. Finally, in section 5, the study is concluded, and potential future research directions are described.

2. Literature Review

2.1. Theoretical Framework

The importance of corporate mechanisms and their implications for the company has been widely studied in finance theory. According to Ross (1973), agency theory is one of the main theories that formally study this relationship and establishes the existence of interest conflict between owners and managers (principal and agent problem). Agency Theory provides a foundation for understanding the potential conflicts of interest between managers and shareholders. An agency relationship is defined by Ross (1973) as a link between two or more parts, one designated as the "agent," acting as the representative of the other, named the "principal." However, monitoring and controlling the agent is expensive as the agent can engage in decision-making and behaviors that may be inconsistent with maximizing shareholder wealth (Daily et al., 2003).

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According to the agency theory, effective corporate governance structures are vital in enhancing the management's incentives to shareholders' interests, thus reducing the costs of agency problems and enhancing the firm's value. The theory assumes that managers working in their self-interest may make investment decisions that may not be in the best interest of the shareholders but in the managers' gain. Good corporate governance acts as a mechanism to mitigate this conflict. The quality of corporate governance is supposed to contribute to the overall value-creation process (Schleifer & Vishny, 1997).

Stewardship Theory offers a contrasting perspective, suggesting that managers are inherently motivated to act in the firm's best interests. It argues that good corporate governance can foster a stewardship orientation among managers, enhancing their commitment to firm success.

This differs from agency theory, in which the assumption is made that conflict exists. Stewardship theory postulates that an effective governance system can enable managers to make proper investment decisions, thus enhancing the firm's performance (Azizi et al., 2022; Dallas & Lubrano, 2022).

Resource Dependency Theory focuses on the necessity of resources for organizational achievement. It asserts that proper governance measures help enhance firms' capability to obtain and govern the resources essential for the organization. Effective governance makes external stakeholders believe in the firm's credibility, hence creating an environment of low information asymmetry, and hence, cheap capital can be raised. This improved resource access can be translated into more efficient investment strategies (Alhassan et al., 2021).

Stakeholder Theory is an approach to corporate governance that focuses on considering the needs of all stakeholders, not only shareholders. It postulates that organizational governance should be changed to encompass the interests of all stakeholders, such as employees, customers, suppliers, and the community. This broader view can, therefore, result in the formulation of better and more sustainable investment decisions that create both financial and social returns (Valentinov & Roth, 2023).

2.2. Ownership Structure

According to agency theory, differences in ownership structure result in varying levels of management motivation and, therefore, influence productivity and organizational performance (Agrawal & Knoeber, 1996). Here, firms with strong governance have governance mechanisms that place the management and shareholders' interests in concert and are intended to mitigate agency costs between the management and the shareholders. These governance characteristics are ownership concentration and managerial ownership (Jensen & Meckling, 1976). It has been established that the level of ownership concentration and the types of owners (institutional investors, family owners, managers) affect firm value (Yoon et al., 2018). Ownership concentration can have positive and negative consequences (Wahyudi & Chairunesia, 2019). First, concentrated ownership helps in effective decision-making and minimizes agency costs because the interests of the dominant owner align with the firm's interests (Kabir et al., 2019). Conversely, it can also result in opportunistic behavior that may extract value from minority shareholders and increase managerial entrenchment, which may be detrimental to the firm's value.

The controlling owner also matters (Wahyudi & Chairunesia, 2019). For example, firms controlled by families may have different governance mechanisms and performance records than those controlled by institutional investors or owners. Institutional investors' professional expertise and monitoring capabilities are often associated with improved corporate governance and higher firm value.

2.3. Board Structure and Composition

Numerous studies have examined the impact of board structure and composition on firm value. Research has investigated the role of board size, board independence (the proportion of independent

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directors), the presence of women on boards (gender diversity), and the expertise of board members (board expertise).

2.3.1. Board Size

Board size depends on the complexity of the business and the availability of relevant experience and skill set. A board with few members may not be equipped to deliver the expected governance roles. Large boards may also, at times, be non-functional and may not help in mitigating agency conflicts between managers and shareholders. Agency models suggest that large boards may destroy corporate value. Kiel and Nicholson (2003) find evidence that contradicts theoretical prediction as board size is found to have a positive impact on market-based firm performance. Their finding, however, may be explained by the size of the board of the studied firms, which is approaching the normative best practice guidelines. Lipton and Lorsch (1992) recommend an average of 8 members on the board for board effectiveness.

2.3.2. Chairman-CEO Duality

One of the key monitoring mechanisms advocated by the agency perspective is the separation of the roles of CEO from chairperson. If the two roles are not separated, the CEO also chairs the group of people monitoring and evaluating the CEO's performance; hence, duality exists. This situation also gives rise to possible conflict of interest and may impair the independence of the monitoring group. This is because, in such a situation, the ability of the CEO/Chairperson to exercise independent self-evaluation is questionable (Rechner & Dalton, 1989). Fosberg and Nelson (1999) discovered that firms that switched to the dual leadership structure (separated roles between the CEO and the chairman) to control agency problems experienced a significant performance improvement measured by the operating income before depreciation, interest, and taxes to total assets ratio. On the contrary, Rechner and Dalton (1989) found no significant difference between shareholders' returns of companies with CEO duality and those that separate the two roles. Dahya et al. (1996) argue that giving too much power to one person is undesirable as it can create problems controlling the decision-making process.

2.3.3. Board Independence

An independent non-executive director is an independent director without affiliation with the firm except for their directorship (Clifford & Evans, 1997). As indicated by Belden et al. (2005), it is believed that the outside directors on the company board tend to reduce the agency cost in the firm. They also noted that the outside directors represent the shareholders effectively and ensure their rights in the company. Furthermore, Bathala and Rao (1995) cited that a firm with a high debt ratio indicated high risk, which led to an agency problem. To avoid this problem, the board should include non-executive directors to protect shareholders' rights. External board membership ensures proper management supervision and limits managerial opportunism (Munter & Kren, 1995). The argument for the need for independent non-executive directors on the board is substantiated by the agency theory, which states that due to the separation between ownership and control, managers (given the opportunity) would tend to pursue their own goals at the expense of the shareholders (Jensen & Meckling, 1976). Empirical studies have found that increased outsiders on the board are likely to promote decisions in the interests of external shareholders (Al-Matari, 2022). The stock market reacts favorably to the appointment of additional outside directors (Rosenstein & Wyatt, 1990). Managerial hegemony theory has challenged this positive role, which views directors as passive instruments (Hamdouni, 2010; Coles et al., 2008). However, Agrawal and Knoeber (1996) discovered a significant negative relationship between board outsiders and firm performance. This is also supported by the findings of Bhagat and Black (1999), who established that firms with most outside directors perform worse than others. These studies show that independent non-executive directors do not necessarily positively impact firm performance, implying that, in these cases, independent non-executive directors may not play their roles effectively.

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2.4. Corporate Governance and Investment Decisions

The relationship between corporate investment and value creation is a complex and multifaceted topic that has been the subject of extensive research and debate among academics and practitioners alike. Effective investment is a crucial driver of value creation for companies, as it allows them to identify and capitalize on new profit opportunities, improve cash flow, and ultimately enhance their long-term growth and development. (Hu et al., 2022) (Galvão et al., 2020)

One key factor in driving value creation through corporate investment is investment efficiency. Effective investment behavior and high investment efficiency can help companies grow, as they are the primary source of value creation and an important condition for the growth and development of modern companies. (Hu et al., 2022) The variables most relevant to value creation are the operating profit margin ratio, invested capital turnover, and the cost of equity rate. (Galvão et al., 2020)

Companies that can achieve higher investment efficiency and maximize value creation are more likely to be successful in the long run. They are better positioned to adapt to changing market conditions, identify new opportunities, and maintain a competitive advantage.

Empirical studies show that investment has a positive impact on economic growth, on firm value (Lev & Sougiannis, 1996; Chan et al., 2001; Johnson & Pazderka, 1993; Cho, 1998), and firm performance (Hill & Snell, 1988; Lau, 1998). Most prior research focuses on the performance consequences of investment policy or governance structure. Empirical studies generally find that investment intensity has a significantly positive effect on the performance of firms.

Sustainable Corporate Investment and Shariah Governance

Sustainable Corporate Investment and Shariah governance share a significant alignment as both prioritize ethical, responsible, and long-term value creation while minimizing harm to society and the environment. This synergy arises from the principles of Shariah, which inherently promote social justice, environmental stewardship, and equitable economic practices. The first principle of Shariah Governance supporting Sustainability is the prohibition of Harm (Garar) (Hamdouni, 2014). Investments must avoid activities that cause harm to society, the environment, or individuals, such as pollution or unethical labor practices. The second principle is the promotion of Social Justice by encouraging investments that benefit communities, reduce inequality, and support economic development. Risk sharing (Musharakah) is the third principle, which promotes equitable financial structures that discourage speculative behavior, supporting stability and sustainable growth (Khaldi & Hamdouni, 2018). The last is ethical prohibition, which Excludes investments in unethical activities (e.g., alcohol, gambling, and non-halal products).

Sustainable Corporate Investment within a Shariah governance framework focuses on integrating Islamic ethical principles with modern sustainability goals like Green Investments, Socially Responsible Investments, and Governance Improvements. Strong governance structures ensure transparency, fairness, and accountability, which are critical for Sustainable Corporate Investment. Shariah governance encourages the efficient use of resources and waste reduction, supporting environmental stewardship (Chen & Yu, 2023).

2.5. The Impact of Corporate Governance Improvements on Value Creation Sensitivity to Corporate Investment

Various studies have evidenced that corporate governance improvements significantly affect value creation sensitivity to corporate investment. Strong corporate governance enhances investments' responsiveness to cash flows and investment opportunities, leading to better capital allocation and firm performance (Bhabra et al., 2018).

Strong governance firms exhibit a high sensitivity of investments to internal cash flows, while weak governance firms show negligible sensitivity, indicating that governance quality influences investment decisions significantly (Bhabra et al., 2018). Also, improved governance mitigates excessive risk aversion among managers, allowing for more effective capital allocation (Bhabra et al., 2018).

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According to Bøhren et al. (2007), enhanced governance correlates with increased investment levels and responsiveness to opportunities, suggesting that better governance drives managers to pursue productive investments.

Post-reform studies indicate that improved board governance leads to a notable increase in investment-Q sensitivity, aligning investment decisions with growth opportunities (Driss, 2022).

According to Hamdouni (2014), for Shariah-compliant firms, corporate governance improvements through ownership concentration affect value creation through investment. However, for Non-Shariah-compliant firms, corporate governance improvements through ownership concentration do not affect value creation through investment. Corporate governance improvements through the number of members, the separation in the functions of chairman and CEO, and the independent members that compose the board affect value creation through investment (Hamdouni, 2014).

While improved corporate governance generally enhances investment sensitivity and value creation, it is crucial to consider the potential costs associated with overly stringent governance measures, which may limit managerial flexibility. Based on the empirical findings from previous research, the following hypotheses are formulated:

H1: Ownership concentration improvements on value creation sensitivity to corporate investment are significant.

H2: Managerial ownership improvements on value creation sensitivity to corporate investment are significant.

H3: Board Size improvements on value creation sensitivity to corporate investment are significant.

H4: Chairman-CEO duality improvements on value creation sensitivity to corporate investment are significant.

H5: Board Independence improvements on value creation sensitivity to corporate investment are significant.

3. Methodology

3.1. Sample Selection and Data

The population of this study is the non-financial companies listed on the Saudi Stock Exchange. Data are hand-collected from the financial reports of listed companies available on "tadawul.com." The analysis is about the period from 2020 to 2023. Our initial sample consisted of 224 firms listed on the Saudi Stock Exchange. In the first step, we exclude all firms categorized as “Financials” and focus exclusively on non-financial firms because banks and insurance are subject to specific rules and regulations, and their leverage is severely affected by exogenous factors (Following Rajan and Zingales, 1995). In the second step, we limited our sample to companies for which annual reports were available. In the third step, we relied on the classification provided on the “Argaam” website to classify companies into Shariah-compliant and non-Shariah-compliant companies.

The final sample consisted of 100 firms with 400 firm-year observations. The dataset contains data from 2020 to 2023, with 100 yearly observations, showing a balanced panel dataset across these four years.

The research questions we investigate are: How do corporate governance and investment affect value creation in the Islamic framework? What is the relation between ownership structure (ownership concentration and managerial ownership), board structure (board size, Board independence, and Chairman-CEO duality), and corporate investment and their impact on value creation? How do corporate governance improvements affect the value creation’s sensitivity to investment?

3.2. Variables Definition and Measurements

This study investigates whether a company’s ownership structure and board of directors’ characteristics improvements affect value creation’s sensitivity to corporate investment. It comprises one dependent variable (TBQ), five corporate governance independent variables (MOWN, CONC, BS,

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DUAL, INDEP), and one corporate investment dependent variable (INV). We also add firm size (SIZE), firm growth (GROWTH), and fixed assets (TANG) as a control variable.

All measurements of variables in this study were detailed and summarized in Table 1 as follows:

Table 1. Measurements of study variables.

Value Creation Variable		
Value creation	**Tobin's q ratio TBQ**	$\text{TBQ} = \frac{\text{Market value of equity} + \text{Debt}}{\text{Total assets}}$ (Hamdouni, 2014)
Corporate Governance Variables		
Ownership structure	**Managerial ownership MOWN**	The percentage of the total number of shares management holds (Hamdouni, 2014)
	Ownership concentration CONC	The percentage of shares owned by a firm's most significant five shareholders. (Hamdouni, 2014)
Board structure	**Board size BS**	The number of members that integrate the board. (Hamdouni, 2014)
	CEO duality DUAL	A dummy variable takes a value of 1 if one person holds both the CEO and chairperson positions and 0 otherwise. (Hamdouni, 2014)
	Board independent INDEP	The proportion of independent directors on the board. (Hamdouni, 2014)
Corporate Investment Variable		
Investment	**INV**	$\text{INV} = \ln \frac{TOTAL\ ASSETS_t}{TOTAL\ ASSETS_{t-1}}$ (Hamdouni, 2014))
Control variables		
Firm size	**SIZE**	The logarithm of total assets.
Growth opportunities	**GROWTH**	$\text{GROWTH} = \frac{\text{TOTAL ASSETS}_t - \text{TOTAL ASSETS}_{t-1}}{\text{TOTAL ASSETS}_{t-1}}$
Fixed Assets	**TANG**	$\text{TANG} = \frac{\text{FIXED ASSETS}}{\text{TOTAL ASSETS}}$ (Hamdouni, 2014)

3.3. Regression Model

In this research, we will use two models developed by Hamdouni (2014). Model 1 focuses solely on corporate governance and investment's impact on value creation. To determine how corporate governance improvements affect value creation's sensitivity to corporate investment, Model 2 focuses on the interaction between different dimensions of corporate structure and board characteristics with corporate investment and the sensitivity of value creation.

Model 1: The impact of corporate governance and corporate investment on value creation

$$\begin{aligned} TBQ_{it} = {} & \beta_0 + \beta_1 CONC_{it} + \beta_2 MOWN_{it} + \beta_3 BS_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP_{it} + \beta_6 INV_{it} \\ & + \beta_7 GROWTH_{it} + \beta_8 SIZE_{it} + \beta_9 TANG_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

Model 2: The effects of corporate governance improvements on value creation's sensitivity to corporate investment

$$\begin{aligned} TBQ_{it} = {} & \beta_0 + \beta_1 CONC * INV_{it} + \beta_2 MOWN * INV_{it} + \beta_3 BS * INV_{it} + \beta_4 DUAL * INV_{it} \\ & + \beta_5 INDEP * INV_{it} + \beta_6 GROWTH_{it} + \beta_7 SIZE_{it} + \beta_8 TANG_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

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4. Results

4.1. Descriptive Statistics

Table 2 presents descriptive statistics for various variables, potentially representing governance indicators, financial metrics, or corporate characteristics. It is mainly about the average values, the standard deviation, the minimal and maximal values, skewness, and Kurtosis.

Table 2. Descriptive Data.

Panel A: Descriptive Data for Continuous Variables.

	Mean	Median	Maxi-mum	Mini-mum	Std. Dev.	Skew-ness	Kurto-sis
TBQ	3.33	1.66	11.25	0.66	2.29	2.14	9.38
CONC	0.44	0.32	0.85	0.00	0.19	0.17	2.03
MOWN	0.21	0.12	0.77	0.00	0.29	2.42	9.96
BS	8.04	7.00	12.00	4.00	1.88	0.27	2.68
INDEP	0.54	0.23	1.00	0.00	0.20	0.84	5.42
INV	0.66	0.51	3.17	-0.76	0.77	0.37	2.91
GROWTH	0.18	0.08	12.64	-0.62	0.73	13.06	212.32
SIZE	7.25	5.67	8.44	5.21	0.65	0.70	3.59
TANG	0.56	0.47	0.89	0.00	0.33	0.04	2.14

Panel B: Descriptive Data for Dummy Variables.

Variables	No. Of firms coded "1."	No. Of firms coded "0."
DUAL	54	46

Tobin's Q, which measures the Value Creation of the listed firms of the sample data, ranges from the lowest value of 0.66 to the highest value of 11.25, with a median of 1.66. A mean value of 3.33 indicates moderate value creation relative to assets and indicates that, in most years, the firms' market values are slightly higher than their book values. The mean and median values of Tobin's Q are slightly higher than one, which means the market value is higher than the book value.

The mean for ownership concentration (CONC) is 0.44, indicating relatively dispersed ownership. The mean of Managerial Ownership (MOWN) is 0.21, showing low average managerial ownership.

Concerning the members' number that composes the board (BS), we can affirm that even though an ideal number does not exist, the average is within the expected values. In detail, our sample presents an average of 8.04 members on the board, which is within the size recommended by Lipton and Lorsch (1992) for board effectiveness, with a maximum that reaches 12 members and a minimum of 4 members for all. The variable that measures the percentage of non-executive and independent members (INDEP) indicates that, for all firms, independent directors comprise around 54% of the board on average. Additionally, in most firms (54%), the functions of chairman and CEO (DUAL) were separated. Investment (INV) shows high variability ranging from -0.76 to 3.17. The mean, minimum, and maximum sizes (SIZE) measured by the natural log of the total value of assets are 7.25, 5.21, and 8.44, respectively. The minimum value in the growth ratio (GROWTH) is -0.62, the maximum is 16.62, and the average value is 0.18. A higher growth ratio value shows the company's ability to measure the general economy, which impacts investors or other parties. The variable fixed assets (TANG) show an average value of 0.52.

Skewness measures the asymmetry of the distribution of values in a dataset. Variables like GROWTH, MOWN, and TBQ have extreme values (high skewness and kurtosis), indicating variability in performance and governance practices. Moderate to high kurtosis in most variables reflects the presence of outliers, which could significantly affect analysis. Relatively low means for MOWN and

DEBT suggest that firms in this dataset typically have low managerial ownership and leverage. Governance variables like INDEP, BS, and MEET reflect relatively standard practices but with room for improvement in independence.

Kurtosis is a statistical measure that describes the shape of a distribution's tails compared to a normal distribution. It measures the "tailedness" or the propensity of data to produce extreme outliers. Many variables (like GROWTH and MOWN) exhibit high kurtosis, meaning they are leptokurtic. This suggests the data has extreme values (outliers) and heavy tails, which could impact analysis.

4.2. Correlation Analysis

Table 3 presents the correlation matrix. Multicollinearity occurs when two or more explanatory/independent variables in multiple regression models are highly correlated. It can be detected by analyzing the Pearson correlation matrix. If the Pearson correlation coefficient exceeds 0.7 (the limit fixed by Kervin (1992)), we conclude the presence of multicollinearity. Results indicate that all Pearson correlation coefficients are less than 0.7.

This correlation matrix provides insights into the relationships between the variables. The correlation of 0.93 between TBQ (Tobin's Q) and investment (INV) is a Strong Positive Correlation, highly significant, and suggests a robust link. Investment decisions are highly associated with firm value creation (as measured by Tobin's Q).

TBQ (Tobin's Q) is also positively correlated with concentration (CONC) (0.19), indicating that higher ownership concentration is modestly linked to better firm performance. Table 3 results indicate that all Pearson correlation coefficients between independent and control variables are less than 0.7. Many correlations (e.g., TBQ-INDEP, GROWTH-TBQ) are weak and statistically insignificant, implying limited practical relationships.

These correlations, however, have not created any serious multicollinearity problems, as regression diagnostics for the primary analysis do not indicate such problems. Thus, we conclude the absence of a multicollinearity problem.

Table 3. The correlation matrix.

	TBQ	CONC	MOWN	BS	DUAL	INDEP	INV	GROWTH	SIZE	TANG
TBQ	1.00									
CONC	0.21***	1.00								
MOWN	-0.06	0.16***	1.00							
BS	0.11	0.27***	-0.14	1.00						
DUAL	0.01	-0.25	-0.06	0.21***	1.00					
INDEP	0.12	-0.19	0.15	-0.12	0.00	1.00				
INV	0.95***	0.34***	-0.22	0.05	0.28	0.25	1.00			
GROWTH	-0.07	0.08	0.06	-0.17	0.09	-0.33	-0.22	1.00		
SIZE	-0.22***	0.46***	0.20	0.30**	0.08	-0.07	-0.33***	0.30	1.00	
TANG	0.10**	0.20***	0.07	0.44**	-0.13	0.11	0.32***	-0.17	0.26**	1.00

Note: *, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels.

4.3. Slope Heterogeneity Test

The Pesaran-Yamagata test results in Table 4 indicate a very high Delta-hat statistic and a p-value of 0.0000, leading to the rejection of the null hypothesis. This suggests strong evidence of slope heterogeneity across groups.

Table 4. Slope Heterogeneity Test.

Pesaran, Yamagata Test		
Delta	**p-Value**	**Conclusion**
407.3186	0.0000***	Reject H0: There is evidence of slope heterogeneity

4.4. Selection of the Best Model

The next step is selecting the best model between pooled least squares (PLS), fixed effect model (FEM) and random effect model (REM). Table 5 presents the best model test results. In the Chow Test, PLS is the most appropriate model result by showing a probability value greater than 0.05 and FEM if vice versa.). In the Hausman Test, random is the most appropriate model result by showing a probability value greater than 0.05 and FEM if vice versa. The probability value of the results of the Chow test and Hausman test shows good results with a probability value of less than 0.05, which means the FEM model is the best model between PLS and REM.

Table 5. Best Model Test Results.

	Chow Test	Hausman Test	Conclusion
Model	p-Value	p-Value	
1	0.0000***	0.0000***	Fixed Effect Model (FEM)
2	0.0000***	0.0094***	Fixed Effect Model (FEM)

4.5. Hypothesis Testing Result

4.5.1. Effects of Corporate Governance and Corporate Investment on Value Creation

Table 6 reports the regression coefficients estimated from the first model. R-squared is 0.966. The model (1) explains 96.6% of the variation in the dependent variable (value creation), indicating a perfect fit. After adjusting for the number of predictors, 95.4% of the variation is still explained, suggesting strong explanatory power for model 1. The high and statistically significant F-statistic value confirms that the overall model is significant.

Table 6. Effects of Corporate Governance and Corporate Investment on Value Creation.

	Model 1
Variables	Coeff
CONC	5.615
MOWN	-4.983
BS	-0.016
DUAL	0.245**
INDEP	-0.112
INV	2.513***
GROWTH	0.028
SIZE	-1.134***
TANG	0.027
C	6.171**
R-squared	0.966
Adjusted R-squared	0.954
F-statistic	74.795
Prob(F-statistic)	0

Note: *, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels.

The results of the effect of Corporate Governance on value creation indicate that Governance Effects Vary. In model 1, CEO duality positively impacts value creation, but other governance factors (e.g., board size, independence, ownership structure, concentration) show limited or no significant effects in this sample. In model 1, this sample shows limited or no significant effects in all governance factors (e.g., board size, independence, ownership structure, ownership concentration). For ownership structure and ownership concentration, our results do not agree with previous studies by Yoon et al. (2018), Wahyudi & Chairunesia (2019), and Kabir et al. (2019). Regarding the characteristics of the board of directors, the results contradict the findings of previous studies that concluded the positive and significant impact (Kiel and Nicholson (2003); Lipton and Lorsch (1992); Rechner and Dalton (1989); Fosberg and Nelson (1999); Dahya et al. (1996); Clifford & Evans (1997); Belden et al. (2005); Bathala and Rao (1995); Al-Matari, (2022); Rosenstein and Wyatt, (1990); Coles et al., 2008); Agrawal and Knoeber (1996)). The results also do not support agency theory.

Corporate Investment is Crucial. The coefficient is positive (2.513***), and the significance level of investment highlights its strong and consistent role in driving value creation. Our findings are compatible with Hu et al. (2022), Galvão et al. (2020) and Hamdouni (2014).

Based on Table (6), only the size of the firm (SIZE) as a control variable shows results of significance.

4.5.2. Effects of Corporate Governance Improvements on Value Creation' sensitivity to Corporate Investment

Table 7 highlights the interaction effects of corporate governance variables with corporate investment on value creation. The results are about the effect of corporate governance improvements on value creation's sensitivity to corporate investment of Saudi Arabian firms.

Table 7. Effects of Corporate Governance Improvements on value creation' sensitivity to corporate investment.

	Model 2
Variables	**Coeff**
CONC*INV	0.647*
MOWN*INV	-0.741
BS*INV	0.274***
DUAL*INV	0.324**
INDEP*INV	0.487*
GROWTH	0.003
SIZE	-1.033***
TANG	0.301
C	6.649***
R-squared	0.973
Adjusted R-squared	0.962
F-statistic	91.153
Prob(F-statistic)	0

Model 2 exhibits high explanatory power (R-squared > 0.96). The highest R-squared and F-statistic suggest that governance improvements and investment interact more predictably in these firms.

The interaction of investment with the five measures of corporate governance improvements shows mitigated results. Corporate governance improvements through board size, CEO Duality, and Board Independence affect value creation through investment. The coefficients are positive and significant, indicating that investment effectiveness improves with larger board sizes, and unified leadership appears to enhance investment's impact on value creation. Independent boards also appear crucial for maximizing investment-driven value creation. This may stem from broader expertise, better oversight, and diverse perspectives that larger boards bring to investment decisions. Larger boards enhance the impact of investment on value creation in Shariah-compliant firms. The board's larger size likely brings in a greater diversity of skills, ideas, and expertise, all of which contribute positively when combined with investments. In the context of Shariah-compliant firms, this could also relate to the board's ability to ensure that investments are aligned with ethical and religious values, which could affect financial and non-financial performance.

Independent boards also enhance the effectiveness of investment in Shariah-compliant firms, although the significance is weaker compared to other governance variables. A more independent board may reduce the potential for agency problems, ensuring that investments are made with the long-term interests of shareholders in mind and adhering to the ethical guidelines of Shariah law.

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Independent boards play a pivotal role in enhancing the impact of investment on value creation. Their objectivity ensures that investments align with long-term shareholder interests and reduce agency conflicts.

CEO duality, where the CEO also holds the position of Chairman of the Board, strengthens the positive relationship between investment and value creation. This suggests that unified leadership in Shariah-compliant firms facilitates more effective decision-making and swift execution of strategic investments. This could be particularly beneficial in Shariah-compliant firms, where regulatory constraints and ethical guidelines must be balanced with business goals. These results confirm Hypotheses H3, H4, and H5.

Corporate governance improvements through ownership concentration affect value creation through investment. When combined with investment in these subgroups, the positive and significant coefficient (0.647**) highlights a more substantial effect of ownership concentration on value creation. Ownership concentration amplifies the effectiveness of investment in creating value. This result suggests that when ownership is concentrated in the hands of a few, these owners are more likely to influence firm strategy and investments strongly. The alignment between owners and managers could make investments more efficient, primarily when they are highly motivated by personal financial stakes. Regarding the results in Table 7 for model 2, we confirm Hypotheses H1.

Our findings support previous studies by Bøhren et al. (2007), Bhabra et al. (2018) and Hamdouni (2014).

Based on Table (7), only the size of the firm (SIZE) as a control variable shows significant results in both models (2-1), (2-2), and (2-3).

5. Conclusions and Recommendations

This paper examines the intricate relationship between corporate governance improvements, corporate investment decisions, and the resulting impact on firm value creation of non-financial companies listed on the Saudi Stock Exchange during the 2020-2023 period. We will explore how enhanced governance mechanisms influence the sensitivity of value creation to investment choices. Poor governance can lead to misallocation of resources, hindering value creation even with substantial investment. Conversely, strong governance can optimize investment decisions, maximizing returns and boosting firm value. This study aims to delve into the nuances of this relationship, exploring the various channels through which governance impacts investment efficiency and, ultimately, shareholder value.

According to this research, the author concludes that for Shariah-Compliant Firms, a higher concentration of ownership can drive greater investment efficiency in Shariah-compliant firms. This finding aligns with the notion that concentrated ownership creates more vigilant oversight, especially in firms with strong religious and ethical oversight requirements. Larger boards and CEO duality strengthen the relationship between investment and value creation. In Shariah-compliant firms, the strategic guidance provided by larger boards and unified leadership may help ensure that investments align with ethical guidelines while boosting financial returns. Although the coefficient for board independence is positive, it is weaker than other factors. However, this still highlights the importance of ensuring that boards remain independent, particularly in Shariah-compliant firms with more pronounced ethical concerns and regulatory requirements.

Implications for Shariah-Compliant Firms: The empirical evidence of this study supports the view that Shariah-compliant firms may benefit from fostering ownership structures that allow key stakeholders to take an active role in investment decision-making. This could enhance both financial performance and ethical alignment with Shariah principles. While larger boards are beneficial, Shariah-compliant firms should ensure they maintain effective governance by aligning board members' values with the firm's Shariah guidelines. CEO duality could be an effective strategy if the CEO is highly committed to business and ethical goals. Strengthen board independence to reduce potential conflicts of interest, allowing for a more effective monitoring of investments and greater alignment with Shariah-compliant practice. Integrating sustainable corporate investment and Shariah governance offers a robust framework for achieving ethical and long-term economic growth. Both focus on responsible stewardship, social justice, and minimizing harm, complementing them highly. This combination also allows firms to attract ESG-focused and Shariah-compliant investors while addressing global sustainability challenges.

The present study's limitation lies in its limited coverage of its variables. The study did not examine other related characteristics of the board of directors and audit committees, such as the number of meetings and women on board. In most cases, manual time and effort would be required to collect such information. Given this study's limitations, future research using larger samples and a more extended time series should be conducted.

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Abbreviations

The following abbreviations are used in this manuscript:

TBQ	Tobin's q ratio
CONC	Ownership concentration
MOWN	Managerial ownership
BS	Board size
DUAL	CEO duality
INDEP	Board independent
INV	Investment
GROWTH	Growth opportunities
SIZE	Firm size
TANG	Fixed Assets

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