



“Board characteristics and firm value: The moderating role of capital adequacy”

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BOARD CHARACTERISTICS AND FIRM VALUE: THE MODERATING ROLE OF CAPITAL ADEQUACY

Abstract

The global financial crisis increased corporate world uncertainties. Therefore, to meet these challenges, firms take a more proactive approach to tackling various corporate governance and firm value initiatives and policies. This study aims to explore the moderating effect of capital adequacy on the relationship between board characteristics and the firm value of listed banks in Pakistan. To obtain a more robust empirical model and results, this study incorporates moderator and control variables. This study is based on half-yearly secondary data of 560 sample observations from 2009 to 2021. Multiple regression and panel data estimation techniques were employed for the analysis. The study used firm value as a dependent variable, proxied by Tobin's Q, along with five independent variables, one moderating variable, and two control variables. The results of this study indicate that a higher capital adequacy ratio (CAR) increases firm value and has a moderating effect on board characteristics and firm value. Low proportions of women and independent directors on board affect firm value. The presence of risk management and audit committees in listed Pakistani banks, on the other hand, increases firm value. The banks in Pakistan have no problem with CEO duality. The study also found that bank size has a positive relationship with firm value, while bank age has a negative relationship with firm value.

Keywords

firm value, capital adequacy ratio, female directors, independent directors, CEO duality, risk committee, audit committee

JEL Classification

M21, G32, O16

INTRODUCTION

Market capitalization is an important tool to represent firm value through the market price of equity shares (Kirkpatrick & Radicic, 2020). The firm value became increasingly significant during the global financial crisis of 2007–2008 because different companies' share prices were negatively affected and exposed to a decline in market capitalization (Liu et al., 2012). Enhancing the market value of shares, which could boost shareholders' wealth, is an essential step to enhancing firm value (Khan & Hussanie, 2018). After the global financial crisis, considering board characteristics has become a crucial responsibility for the banking industry (Ramly et al., 2017). Corporate governance guidelines around the world also advocate for independent directors to be represented on the board. Independent directors on the board might have an impact and prevent senior management from misusing their authority. Independent directors are crucial in ensuring accurate and trustworthy financial reporting, which helps the executives stay focused on increasing corporate value (Ramly et al., 2017; Jagirani, Chee & Kosim, 2023).

The presence of a dual CEO might weaken board control and reduce the value of a firm. Additionally, the presence of CEO duality exposes a conflict of interest between shareholders and the CEO,

which might harm shareholders' interests and lead to agency problems; hence, it could weaken board control and diminish firm value (Gupta & Mahakud, 2020). The board of directors also establishes risk committees to carry out a variety of tasks, including assessing risks, quantifying risks, and evaluating risks, as well as deciding the firm's risk appetite and tolerance. According to the regulator's guidelines, banks in Pakistan need to maintain a minimum capital requirement of 10% in the form of a capital adequacy ratio (CAR) (Ayub & Javeed, 2016). The minimum capital requirement is intended to safeguard banks from any financial risk. By preserving a capital reserve against anticipated losses, CAR has the benefit of reducing the risk of future losses (Rafique et al., 2020; Jagirani, Chee & Kosim, 2023).

The previous studies by Isidro and Sobral (2015), Agyemang-Mintah and Schadewitz (2018), Vo and Bui (2017), Fallatah and Dickins (2012), Bhuiyan et al. (2020), Vintila et al. (2015), and Mishra and Kapil (2018) were constrained and inconclusive. The focus of prior studies was not on the connection between board characteristics and firm value, but rather primarily on financial hazards. These studies also could not examine the effect of the moderator on dependent and independent variables. The dominance of Pakistan's banking industry in economic expansion has therefore been disregarded. Additionally, the key challenges faced by the banking sector of Pakistan are firm value and problems in the corporate board, both of which were overlooked in earlier research.

The focus of earlier studies was on non-financial enterprises. The previous research was limited by disregarding board dynamics and firm value while focusing solely on specific financial hazards. Thus, to explore the moderating impact of board characteristics and firm value, this study includes CAR as a new moderating variable. Further, this study has also considered two control variables to observe the control effect. This study uses the most recent dataset, which spans 2009 to 2021. Since there have been relatively few studies that have examined the association between board characteristics and firm value with the moderating influence of CAR and the control effect, this study is being conducted to address that gap.

1. LITERATURE REVIEW

This study focuses on agency theory because it is widely used in corporate governance. A more balanced board is created when the board is made up of both male and female directors. Therefore, agency theory supports the claim that independent female directors on the board enhance firm value. Agency theory supports the idea that having independent members on the board gives a firm a useful monitoring tool and adds value. A separate risk and audit committee gives businesses the ability to efficiently manage their whole risk profile, which can improve corporate governance and save agency costs (Bhuiyan et al., 2020; Agyemang-Mintah & Schadewitz, 2018).

The board of directors can be significantly affected by the right balance of diversity, including racial and gender diversity. The presence of women in corporate governance is one of its most significant mechanisms. The importance of gender diver-

sity in board composition has grown over the last few years. It has been noted that gender diversity is associated with firm value (Agyemang-Mintah & Schadewitz, 2019). Countries across the world are giving more importance to the nomination of women directors. In Europe, firms promote gender diversity on their boards by enforcing mandatory quotas. The earlier studies suggest that introducing a mandatory quota of female directors increases gender equality within firms, which could affect firm value (Isidro & Sobral, 2015; Vo & Bui, 2017).

The presence of independent directors brings fairness to decision making which could help enhance firm value. When a firm makes decisions to maximize shareholder wealth, the role of independent directors becomes more important. It is essential for the firm to include independent directors with relevant expertise during the formation of the corporate board to add value. Therefore, independent directors have a positive association with firm value (Thenmozhi & Sasidharan, 2020). The nomina-

tion of independent directors is also very important because a board with independent directors takes impartial decisions for the benefit of shareholders and the organization. Independent directors are chosen for their skill set and expertise to bring transparency and fairness to the firm. Independent directors are usually not regular employees of a firm. Hence, they are appointed to remain impartial for the effectiveness of the firm. Therefore, the presence of independent directors on the board influences firm value (Vintila & Gherghina, 2013; Fallatah & Dickins, 2012).

The risk committee is a separate committee of the board of directors whose sole and exclusive duty is to supervise the risk management procedures and policies. When the policies and procedures are not properly monitored, it may create a risk that could affect the firm value. It implies that the risk committee has a negative relationship with firm value (Vintila et al., 2015). The formation of a risk committee is important for all financial institutions, including banks and insurance companies. A risk committee improves the monitoring process and is anticipated to raise the bar for risk monitoring. The role of the risk committee is to assist the board of directors in carrying out their duties to the investing public and shareholders. The formation of a risk committee within the firm affects firm value (Bhuiyan et al., 2020).

Over the past few years, the audit committee's role in governance has become more significant. The board of directors must therefore create an audit committee to boost investors' and shareholders' confidence in the corporate world. The major responsibilities of audit committees are to monitor the overall internal control system and oversee the accounting reporting mechanism. Therefore, the role of the audit committee is considered very essential in the corporate world (Ghafran & O'Sullivan, 2013). Mixed results were found in the earlier empirical studies such as Agyemang-Mintah et al. (2018), Kadarningsih et al. (2020), which found a positive relationship between the audit committee and firm value, and Vintila et al. (2015), which found a negative relationship.

When a CEO also becomes the chairperson of the board, this is called CEO duality. Shareholders and other stakeholders always want effective firm governance. Therefore, they

want separate duties and responsibilities for the CEO and the firm's chairperson. When a person holds both positions of CEO and Chairperson of the Board, this might lead to biased financial decisions, which might lower the bank's worth and could affect firm value (Mansoor et al., 2017). Mishra and Kapil (2018), Vintila et al. (2015), and Yammeesri and Herath (2010) found a negative relationship between CEO duality and firm value.

The financial sector in Pakistan is intricate and diverse. Its regulation is overseen by the country's central bank. However, to manage any risk, banks must maintain a specific level of capital. Capital is crucial because it gives banks the funds they need to draw in customers. Additionally, it is essential as it increases firm value by preventing bank failure and absorbing financial losses. A bank's adequate capital in relation to its assets demonstrates its capacity to fulfil its obligations (Mishkin, 1999). The findings of some earlier studies such as Wahab et al. (2017) and Abou-El-Sood (2016) revealed a positive relationship between bank capital and board characteristics, since sufficient capital serves to give banks an additional cushion.

Listed banks in Pakistan are based on different sizes and bank ages. Therefore, this study controls the effects of size and age to assess the relationship between the independent and dependent variables. Earlier studies, such as Vintila et al. (2015), Mishra and Kapil (2018), and Khaoula and Moez (2019), found a negative relationship between firm size and firm value. Mishra and Kapil (2018), as well as Ahn and Shrestha (2013), discovered a negative relationship between firm age and firm value. However, this study expects a positive association of bank size and bank age with firm value. Based on the literature, the following hypotheses are formulated:

- H_1 : *Presence of women directors on board have a positive relationship with firm value.*
- H_2 : *Higher proportion of independent directors on board affects firm value.*
- H_3 : *The formation of a risk committee has a positive relationship with firm value.*

- H_4 : The formation of an audit committee has a positive relationship with firm value.
- H_5 : CEO duality has a negative relationship with firm value.
- H_{6A} : The impact of board gender diversity is stronger when CAR is higher.
- H_{6B} : The impact of board independence is stronger when CAR is higher.
- H_{6C} : The impact of an audit committee is stronger when CAR is higher.
- H_{6D} : The impact of a risk committee is stronger when CAR is higher.
- H_{6E} : The impact CEO Duality is lower when CAR is higher.
- H_7 : Bank size has a positive relationship with firm value.
- H_8 : Bank age has a positive relationship with firm value.

2. METHODOLOGY

The sample of this study considered Pakistani listed banks. This study has taken half year secondary data with 560 observations from 2009 to 2021. The data is extracted from the annual financial reports of listed banks in Pakistan to examine the relationship among the variables in the research framework.

Table 1. Half-yearly observations of listed banks of Pakistan

Source: State Bank of Pakistan, www.sbp.org.pk

Year	Year-Wise Total Listed Banks	Half-Yearly Observations
2009	25	50
2010	24	48
2011	23	46
2012	22	44
2013	22	44
2014	22	44
2015	21	42
2016	21	42
2017	20	40
2018	20	40
2019	20	40
2020	20	40
2021	20	40
Total Observations		560

The research framework is presented in Figure 1.

This study used a multiple regression model to examine the hypotheses and the effect of board characteristics on firm value. Next, the model will examine the moderating impact of the capital adequacy ratio on board characteristics and firm value. This study uses panel data estimation techniques for analysis.

$$\begin{aligned}
 \text{Tobin's } Q_{jt} = & \beta_0 + \beta_1 \text{FirmValue}_{jt} + \\
 & + \beta_2 \text{BGD}_{jt} + \beta_3 \text{BIND}_{jt} + \beta_4 \text{RCOM}_{jt} + \quad (1) \\
 & + \beta_5 \text{ACOM}_{jt} + \beta_6 \text{CEOD}_{jt} + \beta_7 \text{BS}_{jt} + \\
 & + \beta_8 \text{BA}_{jt} + \varepsilon_{jt},
 \end{aligned}$$

where FirmValue_{jt} – Firm Value of j th bank at time t , jt – j th bank at time t , BGD_{jt} – Board Gender Diversity of j th bank at time t , BIND_{jt}

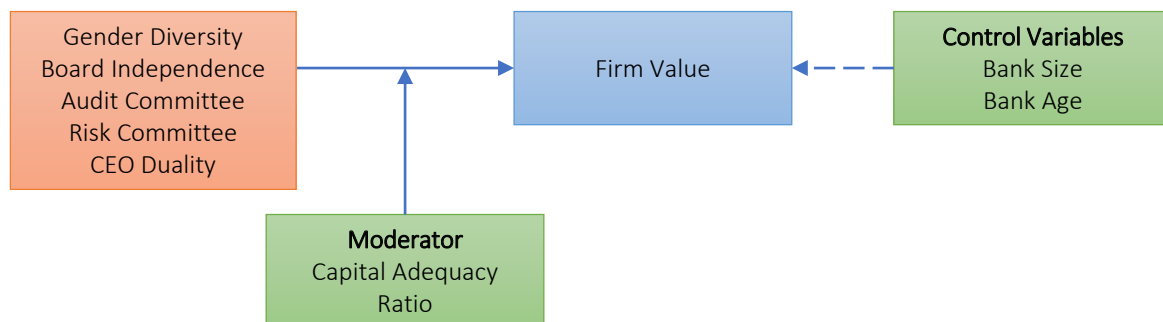


Figure 1. Logical relationship between variables

Table 2. Summary of variables and measurements

Variables	Code	Measurements	Sources
Tobin's Q	Tobin's Q	Equity + Book value / Book value of total assets	Isidro & Sobral (2015)
Board Gender Diversity	BGD	% women directors on board	Isidro & Sobral (2015); Vo & Bui (2017)
Board Independence	BIND	% of independent directors on board	Thenmozhi & Sasidharan (2020); Vintila & Gherghina (2013); Fallatah & Dickins (2012)
Risk Committee	RCOM	"A dummy variable with the value of 1 if the company's board of directors has a risk committee and 0 otherwise".	Bhuiyan et al. (2020); Vintila et al. (2015)
Audit Committee	ACOM	"A dummy variable with the value of 1 if the company's board of directors has an audit committee and 0 otherwise".	Agyemang-Mintah et al. (2018); Vintila et al. (2015)
CEO Duality	CEOD	"A dummy variable with the value of 1 if the CEO simultaneously serves as chairman and CEO and 0 in all other cases".	Mishra & Kapil (2018); Yammeesri & Herath (2010); Vintila et al. (2015)
Bank Size	BS	The natural logarithm of total assets	Vintila et al. (2015); Mishra & Kapil (2018); Khaoula & Moez (2019)
Bank Age	BA	Number of years since the establishment	Nazir & Afza (2018); Ahn & Shrestha (2013)
Capital Adequacy Ratio	CAR	Total capital / risk weighted assets	Laeven & Levine (2009)

– Board Independence of j th bank at time t , $RCOM_{jt}$ – Risk Committee of j th bank at time t , $ACOM_{jt}$ – Audit Committee of j th bank at time t , $CEOD_{jt}$ – CEO Duality of j th bank at time t , BS_{jt} – Bank Size of j th bank at time t , BA_{jt} – Bank Age of j th bank at time t , ε_{jt} – error term of j th bank at time t .

$$\begin{aligned}
 \text{Tobin's } Q = & \beta_0 + \beta_2 GD_{jt} + \beta_3 BIND_{jt} + \\
 & + \beta_4 RCOM_{jt} + \beta_5 ACOM_{jt} + \beta_6 CEOD_{jt} + \\
 & + \beta_7 CAR_{jt} + \beta_8 BGD \cdot CAR_{jt} + \\
 & + \beta_9 BIND \cdot CAR_{jt} + \beta_{10} RCOM \cdot CAR_{jt} + \\
 & + \beta_{10} RCOM \cdot CAR_{jt} + \beta_{11} ACOM \cdot CAR_{jt} + \\
 & + \beta_{12} ACEOD \cdot CAR_{jt} + \varepsilon_{jt},
 \end{aligned} \quad (2)$$

where BGD – Board Gender Diversity, $BIND$ – Board Independence, $RCOM$ – Risk Committee, $ACOM$ – Audit Committee, $CEOD$ – CEO Duality, $\{BGD \cdot CAR, BIND \cdot CAR, RCOM \cdot CAR, ACOM \cdot CAR, CEOD \cdot CAR\}$ – Interaction Terms.

Table 2 demonstrates the measurement of variables.

3. EMPIRICAL RESULTS

The descriptive statistics in Table 3 reveal that the lower mean of Tobin's Q of 0.142 indicates that listed banks in Pakistan are undervalued. This shows that Tobin's Q is steadily declining, causing the stock's value to fluctuate between being overpriced and being undervalued. The average CAR

of Pakistan's listed banks is 12.22 percent above the requirements of the regulator.

The average number of women directors on the boards of listed banks in Pakistan is 3.75, or 4%, which is a relatively low percentage. This suggests that banks do not support the selection of women on boards. There are only 21.96 percent of independent directors in listed banks in Pakistan. The results of the RC showed a mean value of 0.934, indicating that 93% of the listed banks in Pakistan have risk committees. On average, 84% of listed banks in Pakistan have audit committees. Furthermore, only 15% of listed banks have a CEO duality issue; the remaining 85% have separate CEO and chairman boards. The descriptive statistic results also reveal that the average total assets of listed banks in Pakistan are Rs. 19.8 billion and USD 86 million. However, the average age of each listed bank in Pakistan is 37 years.

The model fitness test, often known as the goodness of fit test, is shown in Table 4. With an R-square of 0.776, the regression model successfully explained the variability seen in the target variable. In addition, 77 percent of R-square results show that the data fits the regression model.

Table 5 reveals the relationship between dependent and independent variables. Four out of the eight variables are statistically significant. However, BGD, BIND, CEOD, and BA are statistically insignificant. This means variables such as RCOM, ACOM, CAR, and BS influence the firm value of

Table 3. Descriptive statistics

	TOBIN'S Q	BGD	BIND	RCOM	ACOM	CEOD	CAR	BS	BA
Mean	0.142	3.750	21.96	0.934	0.841	0.155	12.22	19.84	37.42
Median	0.031	0.000	25.00	1.000	1.000	0.000	11.00	20.00	25.00
Maximum	1.700	25.00	71.00	1.000	1.000	1.000	57.04	27.00	158.0
Minimum	0.000	0.000	0.000	0.000	1.000	0.000	0.080	16.00	2.000
Std. Dev	0.179	6.033	17.90	0.248	0.190	0.190	6.526	1.535	32.54

Table 4. Goodness of fit test

Model	R	R-Squared	Adjusted R-Squared	Std. Error of the Estimate
1	0.881a	0.776	0.675	87.23

Note: a. Dependent Variable: Tobin's Q Note: $p < 0.05$.

Table 5. Regression results of financial risks and firm value

Variables	Coefficient	t-statistics	p-values
BGD	-0.222	-2.812	0.671
BIND	0.049	1.842	0.350
RCOM	0.106	5.709	0.000
ACOM	0.200	5.444	0.000
CEOD	-0.018	-0.523	0.400
CAR	0.120	6.727	0.008
BS	-0.002	-0.887	0.001
BA	0.000	1.532	0.126

Note: a. Dependent Variable: Tobin's Q Note: $p < 0.05$.

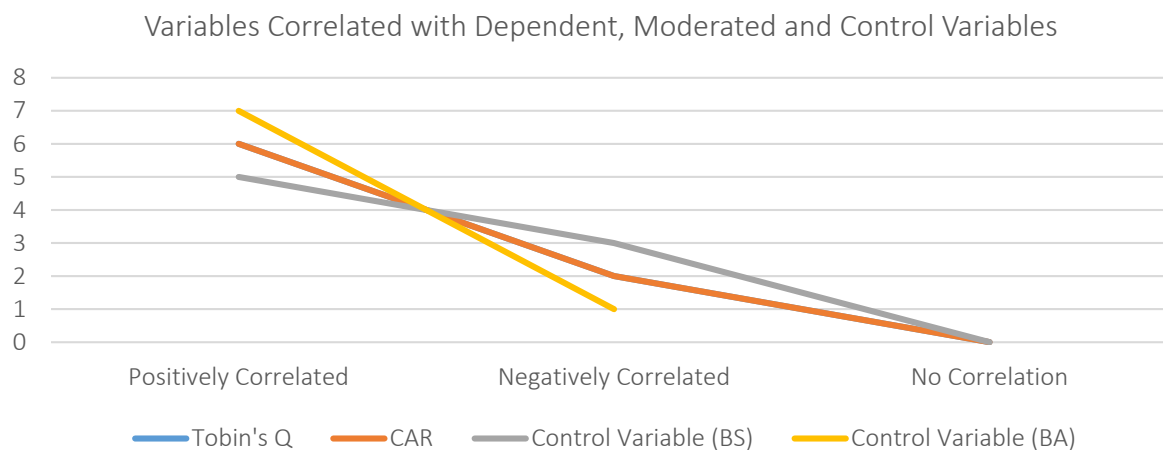
Table 6. Pearson correlation

Variables	Tobin's Q	BGD	BIND	RCOM	ACOM	CEOD	CAR	BS	BA
Tobin's Q	1	-0.170	0.140	0.210	0.170	-0.270	0.520	0.440	0.460
BGD	-0.170	1	-0.260	-0.220	-0.260	0.310	-0.370	-0.210	-0.250
BIND	0.140	-0.260	1	0.570	0.530	-0.440	0.620	0.570	0.590
RCOM	0.210	-0.220	0.57	1	0.290	-0.310	0.520	0.310	0.470
ACOM	0.170	-0.260	0.530	0.290	1	-0.340	0.440	0.250	0.440
CEOD	-0.270	0.310	-0.440	-0.310	-0.340	1	-0.490	-0.480	0.320
CAR	0.520	-0.370	0.620	0.520	0.440	-0.490	1	0.360	0.320
BS	-0.440	-0.210	0.570	0.310	0.220	-0.480	0.360	1	0.340
BA	0.460	-0.250	0.590	0.470	0.250	0.320	0.320	0.340	1

Table 7. Moderating effects of CAR on board characteristics and Tobin's Q

Variables	Model 1		Model 2		Model 3	
	β	p-value	β	p-value	β	p-value
CAR			0.116	0.008	0.189	0.034
BGD	-0.039	0.013	-0.038	0.014	-0.157	0.036
BIND	-0.026	0.535	-0.026	0.541	-0.727	0.053
RCOM	0.035	0.412	0.042	0.327	0.179	0.178
ACOM	-0.033	0.024	-0.042	0.001	-0.078	0.014
CEOD	0.030	0.001	0.061	0.000	0.017	0.002
BGD*CAR					-0.264	0.033
BIND*CAR					-0.159	0.000
RCOM*CAR					0.137	0.013
ACOM*CAR					-0.877	0.044
CEOD*CAR					-0.200	0.079

Note: Financial Risks = $RNPL$, $MBETA$, $RLATA$, CR , $RNIM$; Moderating variable = CAR ; Interaction terms = $RNPL*CAR$, $MBETA*CAR$, $RLATA*CAR$, $CR*CAR$, $RNIM*CAR$. $p < 0.05$.



Note: *P < 0.05.

Figure 2. Graphical representation of correlated variables

listed banks in Pakistan.

Table 6 reveals the association between dependent and independent variables.

Table 6 reveals that Tobin's Q has a negative relationship with BGD, CEOD, and BS, which means that the lower proportion of women directors on boards and CEO duality affect the firm value of listed banks in Pakistan. Further, board size is also negatively associated with firm value. However, all other variables, such as BIND, RCOM, ACOM, CEOD, CAR, BS, and BA, have positive associations with firm value. Further, a high CAR increases firm value, whereas BGD and CEOD affect CAR in listed banks of Pakistan.

Table 7 shows the moderating effects of CAR.

Table 7 shows that all interaction terms (BGD*CAR,

BIND*CAR, RCOM*CAR, and ACOM) are found to be significant to Tobin's Q except CEOD*CAR, indicating the moderating effects of CAR on the relationships of board characteristics and firm value.

4. DISCUSSION

This study proposed ten hypotheses to examine the relationship between board characteristics and firm value. The findings indicate that banks in Pakistan are maintaining minimum capital adequacy requirements, which affects firm value. Besides, the results also examined the moderating effect of CAR on the relationship between board characteristics and firm value of listed banks in Pakistan. Firm value in listed banks declines due to frequent variations in the share price of equity stock. The proportion of female and independent directors on the board is very low, affecting the value of a firm. The

Table 8. Hypotheses testing results

Hypotheses	Tobin's Q
H1: Market risk significantly influences the firm value of listed banks in Pakistan.	Hypothesis not Supported
H2: Credit risk has a negative relationship with the firm value of listed banks in Pakistan.	Hypothesis Supported
H3: Liquidity risk has a negative association with firm value in listed banks of Pakistan.	Hypothesis not Supported
H4: Operational risk has a negative relationship with firm value of listed bank of Pakistan.	Hypothesis Supported
H5: Interest rate risk significantly influences firm value of listed bank in Pakistan.	Hypothesis Supported
H6A: The impact of market risk is lower when CAR is higher.	Hypothesis Supported
H6B: The impact of credit risk is lower when CAR is higher.	Hypothesis Supported
H6C: The impact of liquidity risk is lower when CAR is higher.	Hypothesis Supported
H6D: The impact of operational risk is lower when CAR is higher.	Hypothesis Supported
H6E: The impact of interest rate risk is lower when CAR is higher.	Hypothesis Supported
H7: Bank size has a positive relationship with firm value.	Hypothesis not Supported
H8: Bank age has a positive relationship with firm value.	Hypothesis Supported

ratio of risk and audit committees is decent in listed banks, which enhances firm value. The majority of the banks in Pakistan have separate CEOs and chairman boards, so there is no problem of CEO duality. Further, bank size has a negative relationship with firm value, while bank age has a positive relationship with firm value. Moreover, the findings of this study support the agency theory, which advocates that board characteristics affect firm value (Jensen, 1976). The findings of this study are consistent with Isidro and Sobral (2015), Bhuiyan et al. (2020), Kadarningsih et al. (2020), Yammeesri and Herath (2010), and Wahab et al. (2017), but inconsistent with Mishra and Kapil (2018) and Khaoula and Moez (2019).

The world faced several difficulties because of the global financial crisis in 2006–2007, including Pakistan. Consequently, increasing firm value is of greater importance to shareholders. Thus, Pakistan's banking industry must develop and put into practice good risk management strategies, with an emphasis on raising firm value. The results of this study provide concrete evidence that increasing capital adequacy increases firm value of banks. The value of a firm is also affected by poor corporate governance policies within the banks.

CONCLUSION

This study aims to investigate the moderating effect of capital adequacy on the relationship between board characteristics and the firm value of listed banks in Pakistan. To obtain a more robust empirical model and results, this study incorporates moderator and control variables. The results of this study examined the moderating effect of capital adequacy on firm value. Low proportions of women and independent directors on board cause firm value to decrease. The presence of risk and audit committees in listed Pakistani banks, on the other hand, increases firm value. The study also found that banks in Pakistan have no problem with CEO duality. Based on the empirical results of this study, it is concluded that corporate governance issues in Pakistani banks have a negative impact on firm value. Hence, it also causes the stock prices to change from being inflated to being undervalued. Therefore, this study creates a framework to show how board characteristics and firm value interact, with capital adequacy serving as a moderator. In this study, the moderator and control variables were used as proactive tools to get strong results.

The global financial crisis of 2007–2008 brought more uncertainties for the corporate world. Firms become more proactive in addressing various corporate governance and firm value strategies and policies to address the challenges. One important strategy to overcome this problem is adequate capital. Therefore, regulators around the world have enacted stringent policies governing bank capital. The regulators have recommended that banks maintain a minimum of 10 percent of capital after the shocks of the global financial crisis. Thus, this study develops a framework to present the interactions between board characteristics and firm value, in which capital adequacy acts as a moderator. In this context, this study has considered moderators as a proactive risk mitigation tool. The findings of this study help policymakers, regulators, and banks to pay close attention to maintaining a sufficient cushion of capital and formulate very solid corporate governance policies that could help banks enhance firm value.

Unfortunately, this study still has some limitations. First, the study used panel data estimation to examine the moderating effect of capital adequacy on the relationship between characteristics and firm value of listed banks in Pakistan. However, future research may employ generalized method of moments (GMM) estimation techniques along with panel data for more robust results. Second, this study only looked at listed banks in Pakistan. However, other specialized banks may be employed to obtain the overall results of the banking sector of Pakistan. Third, the study's dataset was limited to the years 2009–2021. However, datasets prior to 2007 may be employed to investigate the impact of the global financial crisis before and after. There are numerous opportunities for future

research. First, this study only considered listed banks in Pakistan. The same investigation could be conducted by employing the listed banks of other South Asian developing countries to explore the cross-country findings. Second, the role of financial risks is also very important. Therefore, the variables of this study and the financial risks may be combined into a single model to explore the novel findings.

AUTHOR CONTRIBUTIONS

Conceptualization: Tahir Saeed Jagirani, Lim Chee Chee, Zunarni Binti Kosim.

Data curation: Tahir Saeed Jagirani, Lim Chee Chee.

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