Does Corporate Governance Matter for Bank Performance and Risk-taking? Insights from the Nepalese Banking Industry

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Research Article

Purpose: *This study empirically examines the linkages of corporate governance with the performance and risk-taking of Nepalese banks.*
Methods: *The study uses balanced panel data collected from annual reports [2010-2018] of the selected nineteen banks, including seven foreign-owned banks and twelve domestic banks. The study employs a descriptive and causal-comparative research design with the Ordinary Least Square (OLS) regression approach.*
Results*: The results reveal that a greater number of board meetings and audit committee meetings leads to better performance and lower risk. The independent sample t-test results show that foreign-owned banks significantly differ from domestic banks using corporate governance mechanisms except for board size and audit committee size. Cohen's d results reveal that the number of board-level committees has a medium effect and all other corporate governance variables have a lesser effect on domestic banks than on foreign-owned banks.*
Implications: *The study has policy-level implications for the regulators to emphasize the provisions relating to board size, audit committee size, and their respective meetings for enhancing financial stability. Similarly, the study findings also facilitate bankers to look after and make changes to corporate governance practices prudently.*
Originality: *This study uses Tobin's Q to measure bank performance and employs a Z-score to measure bank risk-taking behavior, which makes it one of the very few studies that explain the impact of corporate governance on bank performance and bank risk-taking.*

Keywords: Corporate governance, Performance, Risk-taking, Bank, Nepal

1. Introduction

Economic and financial stability has been a serious and debatable issue all over the world. While the greatest economists, financial analysts, and regulators were rigorously busy in building various sophisticated mathematical and statistical models to develop sound risk measurement and management, there were cases in which even only one person contributed to the failure of blue-chip organizations in history.

Learning from the experience of corporate scandals and disastrous downfall of big organizations in the USA viz. Enron, Tyco, World Com, American International Group, Xerox, Freddie Mac, and Lehman Brothers; the concept of corporate governance has been prioritized for the stability in the operation of the institutions. The Organization for Economic Co-operation and Development (OECD) steering group on corporate governance argued that board failures in financial firms are a major cause of the financial crisis

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(Kirkpatrick, 2009). In addition, the excessive risk-taking that contributed to the recent financial crisis is often attributed to inadequate corporate governance (Bank for International Settlement [BIS], 2015).

According to Jebran and Chen (2020), corporate governance is a control and monitoring system in which the board of directors oversees the work of management to maximize shareholder value. Relationships between ownership structure, corporate governance, and risk management are profound for bank performance (Kakar et al., 2021). Hossain, Sobhani, Omar, Mohamad, and Said (2019) found that the most important factors for effective corporate governance are the board of directors, auditors, and managers of the various departments. The study also found that the risk-taking behavior of the bank is influenced by the direction of the board of directors.

El-Chaarani, Abraham, and Skaf (2022) concluded that the corporate governance measures of the presence of independent members on the board of directors, lack of political pressure on board members, strong legal protection, and high ownership concentration had positive effects on bank financial performance. Financial performance is greatly linked to the risk exposure of the banks as it is stated that the higher the risk, the higher the return. It is also true that corporate governance, regulating the board's actions, has a lot to do with setting up different strategies to mitigate risks. Khatib and Nour (2021) concluded that the board size does not matter during the uncertain time of the current crisis, while board diversity appeared to significantly enhance firm performance during the crisis time compared to the prior year. Board meetings and audit committee meetings seemed to have a significant negative influence on firm performance pre and post-COVID-19.

Almoneef and Samontaray (2019) found that board size, audit committee meetings, and bank size had a positive impact on bank performance and return on equity (ROE). Similarly, board size and bank size had a positive relationship with return on Assets (ROA) but the board meeting has a negative relationship with ROA. On the other hand, Ghabayen (2012) found that the board size, audit committee size, and audit committee composition had no impact on the firm performance.

Corporate governance provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined (Organization for Economic Co-operation and Development [OECD], 2003). Corporate governance builds up the bank system that fuels and leads to higher bank efficiency. Similarly, it has a strong effect on the level of risk taken by the bank. It has now also become one of the most important dimensions of Environmental, Social, and Governance (ESG) initiatives (Brammer & Pavelin 2008). Therefore, the role of corporate governance in a bank's performance and risk-taking behavior is one of the vital study areas to research in developing and emerging economies.

Corporate governance has gained more importance in the Nepalese banking industry also. The recent downfall issue of the Nepal Development Bank, which failed to obey even the basic regulatory obligations of the central bank and instead frittered away depositors' money, has awakened regulators more. Therefore, this study deals with the following issues related to bank corporate governance, performance, and risk-taking in the context of the Nepalese banking industry:

a. What is the trend and pattern of corporate governance variables viz. board size, number of board meetings, audit committee size, and its meeting, board-level committees and bank size; bank performance (Tobin's Q) and risk-taking behavior (Z-Score) of Nepalese commercial banks?
b. How do the corporate governance variables relate to Nepalese banks' performance and bank's risk-taking?
c. To what extent do corporate governance variables influence the banks' performance and bank risk-taking?

Despite the numerous pieces of research on bank performance and bank risk management, very few studies have considered corporate governance factors into consideration to explain changes in bank performance, Tobin 'q, and bank risk-taking behavior, Z-score. Therefore, this study assesses the

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relationship among the corporate governance mechanism, bank performance, and bank risk-taking behavior in the Nepalese banking industry.

2. Literature Review

There has been a paradigm shift in the banking industry in analyzing bank performance and risk-taking behavior from gauging not only quantitative variables like; Return on Assets (ROA), Return on Equity (ROE), Earning per Share (EPS), Non-performing loan (NPL) and so on, but also qualitative factors like; management qualifications, presence of experts, regulatory compliance, and audit quality. It is because that disproportionate risk-taking threatens the safety and financial health of individual institutions as well as the stability of the financial sector as a whole (Srivastav & Hagendorff, 2016).

Loh and Gee (2017) showed that board size has a significant positive relationship with the total risk-taking of the listed commercial banks in Malaysia. Banks can benefit from large boards in terms of performance up to a certain point. Thereafter, the relationship becomes negative due to the lack of efficient monitoring by the board, organizational difficulties, and greater agency problems (Grove, Patelli, Victoravich, & Xu, 2011). Meijer (2017) revealed that the board size is negatively related to asset risk, indicating that the banks with larger boards choose to invest in less risky assets. Moreover, board size seems to harm measures of insolvency risk, z-score, as banks with larger boards have a greater distance to default.

The audit committee is one of the board-level committees that is responsible for maintaining compliance and regulatory requirements of every transaction that the bank performs. Trinh, Duyen, and Thao (2015) found that there is an insignificant relationship between the audit committee and risk-taking. The study also revealed that some indicators of corporate governance do not affect bank risk-taking.

Salim, Arjomandi, and Seufert (2016) showed that board size and committee meetings have a positive and significant effect on the efficiency of the banks in Australia indicating that larger boards bring higher knowledge into the decision and supervisory process. The study found that the number of board meetings and a larger number of financial experts on the board are important for bank performance of commercial banks in India (Gafoor, Mariappan, and Thyagarajan, 2018). The board meeting is considered a way to present the bank's major decisional agendas to the board to improve the bank's performance and mitigate risk. However, Kaur and Vij (2017) found that the banks with small boards and boards that meet more frequently tend to be more efficient and subsequently have a positive impact on the performance of banks. According to Basuony, Mohamed, and Al-Baidhani (2014), audit committee meeting has a negative but insignificant effect on Tobin's Q. In contrast, Zraiq and Fadzil (2018) found that the audit committee meeting has a significant and positive association with bank performance, ROA, in the Saudi banking industry. Mirchandani and Gupta (2018) revealed that the number of committees has a very weak positive and negative correlation with ROE, a proxy for bank performance. Therefore, it is obvious that ROE is not much affected if there is an increase in the number of committees in the sample banks.

Banks size refers to the total assets created from the capital and other obligations and sometimes refers to the bank's total exposure to risk. Hakenes & Schnabel (2011) revealed that smaller banks have a higher risk-taking under the frame of Basel Accord II. In the fierce market competition, small and medium-sized commercial banks often bear too high a risk to expand their business, resulting in more overall risk-taking. Second, large-size commercial banks get involved in more businesses. However, Berger, Kick, and Schaeck (2014) showed that larger banks take more risk because they have a better capacity to absorb risk and may be considered too big to fail.

In the Nepalese context, the board size has a negative impact on the Z-score of the banks indicating that the smaller the board size, the higher would be the Z-score of Nepalese commercial banks (Bariya, Budhathoki, Dahal, Maharjan, and Rana, 2015). Sayami, Poudel, Nepali, Poudel, and Oli (2017) found

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that the bigger the audit committee size, the higher would be Tobin's Q. Similarly, the more the number of board meetings, the higher would be Tobin's Q. Likewise, the larger the firm size, higher would be the Tobin's Q of the Nepalese banking firms. Audit committee size is positively related to ROA whereas it is negatively related to Tobin's Q. Board meeting is negatively related to ROA. Likewise, audit committee meeting has a negative significant impact on Tobin's Q in the Nepalese banks (Yadav, Pandey, Poudel, Chaudary and Pokhrel, 2016). According to Nepali (2018), bank size has a negative effect on risk-adjusted return on assets, which is the ratio of ROA to the standard deviation of ROA, indicating that the bigger the bank's size, the lower would be the risk-adjusted return on assets (RAROA).

Based on the above research findings and discussions in global contexts and Nepalese contexts, the study develops the following hypotheses:

H_1: There is a significant effect of board size and audit committee size on bank performance and bank risk-taking.

H_2: There is a significant effect of the number of board meetings and audit committee meetings on bank performance and bank risk-taking.

H_3: There is a significant effect of board-level committees on bank performance and bank risk-taking.

3. Methodology

The study has used secondary data, comprising financial ratios, extracted from the annual reports of the selected nineteen banks in Nepal over the study period from 2010 to 2018. The study has considered twelve domestic banks and seven foreign-owned banks, out of twenty-seven banks, for the sample, based on the establishment and operation date before 2010. Hence, it is based on 171 observations. The study has employed descriptive and causal-comparative research design and Ordinary Least Square (OLS) regression approach to analyzing the bank corporate governance variables and their effect on bank performance and risk-taking.

Similarly, the study has performed an independent sample t-test to test and compare the difference in corporate governance practices between foreign-owned banks and domestic banks. In addition, the effect size of these differences is tested employing Cohen's d. Finally, the Variance Inflation Factor (VIF) and tolerance level are computed to examine the multi-collinearity among independent variables. All the data calculation & analysis has been performed on IBM SPPS *23.0* software package.

3.1 Variable Definitions

3.1.1. Bank performance measure: Tobin's Q

Tobin's Q is used as the bank performance measure variable in the study. According to Farooque, Zijl, Dunstan, and Karim (2007), Tobin's Q is used as a forward-looking market/hybrid measure of financial performance, whereas ROA is a backward-looking accounting measure of performance. Tobin's Q reflects firm performance as an indicator of the value of a firm as a going concern relative to the sum of the replacement costs of individual assets employed by the firm. Tobin's Q of each bank equals the market value of equity plus the book value of liabilities divided by the book value of assets (Laeven and Levine, 2009). Similarly, According to Imam and Malik (2007), the market value of equity is calculated by multiplying the number of common stock outstanding and the market value of each common stock. The higher ratio indicates the higher value of banks, which is preferred to be higher than 1. So the following formula is used to calculate Tobin's Q:

$$\textbf{Tobin's Q} = \frac{\textbf{MPS} \times \textbf{No. of outstanding common stock} + \textbf{Book value of debt}}{\textbf{Total Assets}}$$

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3.1.2. Bank risk-taking measure: Z-score

The study has employed Z-score to measure the bank's risk-taking behavior. Z-score consists of three building blocks: bank profits, bank capital, and profit volatility. The mean ROA and its volatility, standard deviations ROA, are calculated over the full sample period. Z-score equals the return on assets plus the capital asset ratio divided by the standard deviation of asset returns (Mamatzakis, Zhang, and Wang, 2017; Beltratti and Stulz, 2012; Fu, Land Molyneuxneux, 2014; Minton, Tail and Williamson, 2014; and Laeven, and Levine, 2009). Therefore, Z-score can be interpreted as the number of standard deviations by which returns would have to fall from the mean to wipe out all equity in the bank (Boyd and Runkle, 1993). In other words, the Z-score measures the distance from insolvency (Roy, 1952) and it is a measure of insolvency risk (Boyd and Graham, 1986). A higher Z-score, therefore, implies a lower probability of insolvency, which provides a more direct measure of soundness than, for example, simple leverage measures. A higher Z-score also ensures stability, while a lower value means less stability for banks. Z-score is calculated as follows:

$$\mathbf{Z-score} = \frac{\mathbf{Return\ on\ assets} + \frac{\mathbf{Total\ equity}}{\mathbf{Total\ assets}}}{\boldsymbol{\sigma}\ \mathbf{Return\ on\ assets}}$$

3.1.3. Effect size measure: Cohen's d

Effect size is a descriptive measure of the magnitude of a treatment effect and helps readers understand the magnitude of differences found between the groups. Cohen (1988) defined effect size as 'the degree to which the phenomenon is present in the population' or 'the degree to which the null hypothesis is false'. It is calculated as the difference between the means, M_1 - M_2, divided by the standard deviation, SD, of either group. Cohen argued that the standard deviation of either group could be used when the variances of the two groups are homogeneous. In addition, Coe (2002) argued that effect size is a simple way of quantifying the difference between two groups that has many advantages over the use of tests of statistical significance alone. According to Cohen's d rule, the effect size is interpreted using the d value where; 0.20, 0.50, 0.80, and 1.30 represents small, medium, large, and very large respectively. The study uses the following formula, due to the unequal sample size of each group, to calculate the effect size:

$$\mathbf{Cohen's\ d} = \frac{\mathbf{M_1 - M_2}}{\mathbf{Pooled\ SD}}$$

Where,

$$\text{Pooled SD} = \sqrt{\frac{(n_1 - 1)SD_1{}^2 + (n_2 - 1)SD_2{}^2}{n_1 + n_2 - 1}}$$

M_1= Mean of group 1, M_2= Mean of group 2, SD_1=Standard deviation of group 1, & SD_2=Standard deviation of group 2.

3.1.4. Group segregation variable: Foreign ownership

In the study, foreign ownership is defined as the significant ownership-sharing participation of foreign banks and investors in the capital structure of the domestic banks in Nepal. It is used as a dummy variable indicating 1 as foreign-owned banks and 0 as domestic banks. This dummy variable helps to form the two bank groups and compare the effect of corporate governance on their performance and risk-taking.

3.2 Model

The estimated model assumes that the bank's performance and risk-taking depend on corporate governance variables. The estimated relationship between dependent and independent variables is formulated as below:

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Bank performance (Tobin's Q) = *f* (BOARDSIZE, NOBM, AUDITM, AUDITSIZE, BOARDLVLC, and BANKSIZE)
Bank risk-taking (Z-score) = *f* (BOARDSIZE, NOBM, AUDITM, AUDITSIZE, BOARDLVLC, and BANKSIZE)
In OLS regression model, these estimated relationships of the variables can be shown as:

Model 1

$$TOBINSQ = \alpha_0 + \beta_1 BOARDSIZE + \beta_2 NOBM + \beta_3 AUDITM + \beta_4 AUDITSIZE + \beta_5 BOARDLVLC + \beta_6 BANKSIZE + \varepsilon$$

Model 2

$$Z\text{-}Score = \alpha_0 + \beta_1 BOARDSIZE + \beta_2 NOBM + \beta_3 AUDITM + \beta_4 AUDITSIZE + \beta_5 BOARDLVLC + \beta_6 BANKSIZE + \varepsilon$$

Where,
TOBINSQ = Ratio of the sum of the market value of equity and book value of debt to total assets

Z-Score = Ratio of the sum of return on assets and capital assets ratio to standard deviation of return on assets

BOARDSIZE = Board size is defined as the number of board members in the bank's board within the regulatory requirements

NOBM = Number of board meetings is defined as the total number of board meetings held by the bank during an economic year.

AUDITM = Audit committee meetings is defined as the total number of audit committee meetings held by the audit committee during an economic year

AUDITSIZE = Audit committee size is defined as the number of members in the audit committee

BOARDLVLC = Board-level committees is defined as the total number of committees and sub-committees formed by the bank board under its direct control

BANKSIZE = Bank size is defined as the natural logarithm of total assets

α_0 = constant term and $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5,$ and β_6 are the beta coefficients of the respective variables, and ε = error term.

4. Results and Discussion

4.1 Descriptive analysis

Table 1 represents the descriptive statistics of the corporate governance variables, performance, and risk-taking variables during the period 2009/10 to 2017/18.

Table 1: Descriptive statistics

Variables	Minimum	Maximum	Mean	Standard Deviation
TOBINSQ	0.08	1.56	0.38	0.23
Z-Score	0.07	12.97	4.88	2.84
BOARDSIZE *(no. of member)*	3	10	7.24	1.31
NOBM *(frequency)*	5	67	17.70	10.72
AUDITM *(frequency)*	4	76	12.54	9.83
AUDITSIZE *(no. of member)*	2	5	3.50	0.69
BOARDLVLC *(no.)*	2	6	3.26	0.72
FORGN *(dummy 0 & 1)*	0	1	0.37	0.48
BANKSIZE *(in billions)*	12.53	171.89	59.10	35.98

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Table 1 shows that Tobin's Q ranges from a minimum of 0.08 to 1.56 with an average of 0.38. The average Z-score value is 4.88 with minimum and maximum values of 0.07 and 12.97 respectively. The board size has a minimum of 3 members and a maximum of 10 members leading to an average of 8 members on the board. Further, the table shows that the average number of board meetings is 18 ranging from 5 meetings to 67 meetings. On average, there are 4 members in the audit committee with a minimum of 2 members to a maximum of 5 members.

In addition, the audit committee meeting ranges from 4 meetings to 76 meetings leading to an average of 13 meetings. There is an average of 4 board-level committees with a minimum of 2 committees and a maximum of 6 committees. The study considers both banks with an average of 0.37 indicating that there are more domestic banks in the sample than foreign-owned banks. The bank size ranges from Rs. 12.53 billion to Rs. 171.89 billion and the average bank size is Rs. 59.10 billion during the study period.

4.2 Independent sample t-test and Cohen's d analysis

The independent sample t-test results for testing the difference in corporate governance practices between foreign-owned banks and domestic banks are presented in Table 2.

Table 2: Independent Sample t-test

Variables		Levene's Test for Equality of variances				
		F	**Sig.**	**t**	**df**	**Sig.(2-tailed)**
BOARDSIZE	Equal variances assumed	7.42	0.01*	-1.60	169	0.11
	Equal variances not assumed			-1.70	154.27	0.09
NOBM	Equal variances assumed	24.57	0.00*	-2.34	169	0.02
	Equal variances not assumed			-2.85	151.83	0.01
AUDITM	Equal variances assumed	1.52	0.22	-2.90	169	0.00
	Equal variances not assumed			-3.22	166.39	0.00
AUDITSIZE	Equal variances assumed	3.40	0.07	-0.85	169	0.40
	Equal variances not assumed			-0.89	147.53	0.38
BOARDLVLC	Equal variances assumed	10.48	0.00*	-3.81	169	0.00
	Equal variances not assumed			-3.91	139.96	0.00

Note: The asterisk sign (*) indicates that the results are significant at a 5 percent level.

The two groups that are used in the study are foreign-owned banks and domestic banks, which use corporate governance (CG) mechanisms. The interpretation of the above results is a two-stage process: the first stage is to examine the homogeneity of the variance between the two groups using Levene's test for equality of variances, which assesses an assumption, and the second stage is to use the t-test row of the results. When F-statistics is significant, the assumption of no difference between the groups is violated and the t-test results of the 'equal variances not assumed' row is used. In contrast, when F-statistics is not significant, the assumption of no difference between the groups is not violated and the t-test results of the 'equal variances assumed' row is used to decide whether there is a mean difference between the groups.

For board size as a CG variable, the F-statistics is significant, $p<0.05$, indicating that there is no equal variance and rejecting the null hypothesis. The t-test for the mean is not significant, $p>0.05$, indicating that there is no significant difference in mean board size between foreign-owned banks and domestic banks. The results for the number of board meetings show that both F statistics and t-test are significant which says that there is a significant difference in the mean number of board meetings between the groups. However, for the audit committee size, the results reveal that there is no difference in mean audit committee size between foreign-owned banks and domestic banks. There is a significantly different in

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mean audit meetings between the groups. For the number of board-level committees as a CG variable, there is a significant difference in the mean number of board-level committees between foreign-owned banks and domestic banks.

Cohen's d results for testing the effect size of the difference in corporate governance practices between foreign-owned banks and domestic banks are presented in Table 3.

Table 3: Cohen's d Analysis

Variables	Mean1 (F)	Mean2 (D)	Mean difference (a)	Std. dev 1	Std. dev 2	Pooled variance	Pooled Std. dev (b)	Cohen's d=a/b	Effect
BOARDSIZE	7.03	7.36	-0.33	1.11	1.40	1.71	1.31	-0.25	Small
NOBM	15.22	19.14	-3.92	4.94	12.75	112.69	10.62	-0.37	Small
AUDITM	9.75	14.17	-4.42	7.13	10.81	92.50	9.62	-0.46	Small
AUDITSIZE	3.44	3.54	-0.10	0.62	0.73	0.48	0.69	-0.15	Small
BOARDLVLC	3	3.42	-0.42	0.65	0.71	0.47	0.69	-0.61	Medium
BANKSIZE	24.76	24.53	0.23	0.61	0.65	0.40	0.64	0.36	Small

Note: $n_1 = 63$, $n_2 = 108$, d=0.20,'small'effect; d=0.50,'medium'effect; and d=0.80,'large'effect size.

Cohen's d results for the board size is 0.25 which is in the range from 0.20 to 0.50 indicating that there is a small effect of board size on domestic banks than foreign-owned banks. Similarly, the number of board meetings, audit committee size, audit committee meeting, and banks size have Cohen's d around 0.20 indicating a small effect size. However, a number of the board-level committee has Cohen's d 0.61, d>0.50, meaning a medium effect on domestic banks than foreign-owned banks.

4.3 Correlation Analysis

Pearson's correlation coefficients of the dependent variables and the independent variables are presented in Table 4.

Table 4: Pearson's Correlation Coefficients Matrix

Variables	TOBINSQ	Z-Score	BOARDSIZE	NOBM	AUDITM	AUDITSIZE	BOARDLVLC	BANKSIZE
TOBINSQ	1							
Z-Score	0.34**	1						
BOARDSIZE	-0.22**	-0.02	1					
NOBM	-0.23**	-0.20**	0.29**	1				
AUDITM	-0.20*	-0.12	0.18*	0.52**	1			
AUDITSIZE	0.03	-0.16*	0.30**	0.28**	0.06	1		
BOARDLVLC	-0.32**	-0.09	0.06	0.09	0.10	-0.03	1	
BANKSIZE	0.26**	0.38**	-0.09	0.21**	.344**	0.12	0.15	1

Notes: The asterisk signs (**) and (*) indicate that the results are significant at 1 percent and 5 percent levels respectively

Table 4 represents that board size has a negative relationship with Tobin's Q indicating that the smaller the board size, the higher would be Tobin's Q. Similarly, the number of board meetings, audit committee meetings, and number of board-level committees are negatively related to the Tobin's Q, which means that fewer board meetings, audit committee meetings and board-level committees lead to higher Tobin's Q. These all CG variables have a moderate level of relationship with the Tobin's Q significant at 5 percent level of significance. And higher the Tobin's Q, the higher would be the bank's performance. The table shows that there is no relationship between audit committee size and Tobin's Q.

The table also reveals that the number of board meetings has a negative significant relationship with Z-score implying that a decrease in board meetings increases the bank's Z-score. Similarly, audit committee size is negatively associated with Z-score and the result is significant at a 5 percent level of significance. It means that a small audit committee size increases banks' Z-score. However, the table shows that board size and the number of board-level committees have no relationship with Z-score. The audit committee

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meeting has a negative but insignificant association with the Z-score. The control variable of the model bank's size, which is the logarithm of total assets of the bank, has a positive significant relationship with the Tobin's Q and Z-score indicating that the bigger the banks, the higher would be bank performance and lower risk-taking.

4.4 Regression Analysis

4.4.1 Regression analysis of corporate governance on Tobin's Q

The following Table 5 represents regression analysis results of corporate governance variables on Tobin's Q.

Table 5: Estimated regression of corporate governance on Tobin's Q

Variables	Coefficient	Std. Error	t-Statistic	Prob.	Collinearity Statistics	
					Tolerance	VIF
C	-2.53	0.63	-4.05	0.00**		
BOARDSIZE	-0.02	0.01	-1.39	0.17	0.82	1.22
NOBM	-0.004	0.001	-2.22	0.03*	0.65	1.55
AUDITM	-0.004	0.002	-2.36	0.02*	0.65	1.53
AUDITSIZE	0.02	0.02	0.92	0.36	0.84	1.20
BOARDLVLC	-0.11	0.02	-5.15	0.00**	0.97	1.04
BANKSIZE	0.14	0.03	5.51	0.00**	0.82	1.22
R-square	0.313			**F-statistic**		12.47
Adjusted R-square	0.288			**Prob. (F-statistic)**		0.00**

Notes: The asterisk signs (**) and (*) indicate that the results are significant at 1 percent and 5 percent levels respectively.

Table 5 shows that the regression model has an F-value of 12.47, having a p-value of 0.000, which is statistically significant at a 1 percent level of significance and justifies the estimated model. The adjusted R-square value of 0.288 reveals that 28.80 percent of the total variation of bank Tobin's Q is explained by the corporate governance variables and the rest are explained by the other variables.

There is a negative insignificant beta coefficient, β=0.02, of board size on Tobin's Q. It indicates that board size has a negative and weaker effect on Tobin's Q. Similarly, the beta coefficients are negative, β=-0.004 each, for board meetings and audit committee meetings in which the result is significant at the 5 percent level of significance. It means that an increase or decrease in the board size, board meetings, and audit committee meetings does not have a significant change in the bank's value, Tobin's Q, as the coefficients are weaker. This finding is similar to the findings of Ghabayen (2012). Likewise, the beta coefficient is negative and significant for the number of board-level committees indicating that the fewer board-level committees, the higher would be Tobin's Q. The result is significant at the 1 percent level of significance. This finding is consistent with the findings of Almoneef and Samontaray (2019).

Audit committee size has a positive and insignificant beta coefficient for Tobin's Q. However, the coefficient is so smaller that Tobin's Q is very weakly affected by the audit committee size. Bank size has a positive and significant beta coefficient, β=0.14, meaning that bank size has a positive impact on the bank's Tobin's Q.

The study has also computed the collinearity statistics with tolerance level and Variance Inflation Factor (VIF) for each independent variable to check multi-collinearity. VIF scores higher than 10 are likely to cause a multi-collinearity problem (Gujarati, 2004). Similarly, tolerance values lower than 0.10 presents a

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multi-collinearity. However, the results reveal that there is no problem of multi-collinearity in the model as all the VIFs are lower than 10 and Tolerance higher than 0.10.

4.4.2 Regression analysis of corporate governance on Z-Score

Table 6 represents the regression analysis results of corporate governance variables on Z-Score.

Table 6: Estimated regression of corporate governance on Z-Score

Variables	Coefficient	Std. Error	t-Statistic	Prob.	Collinearity Statistics	
					Tolerance	VIF
C	-51.96	7.78	-6.68	0.00**		
BOARDSIZE	0.44	0.16	2.83	0.01**	0.82	1.22
NOBM	-0.05	0.02	-2.38	0.02*	0.65	1.55
AUDITM	-0.06	0.02	-2.66	0.01**	0.65	1.53
AUDITSIZE	-0.90	0.29	-3.09	0.00**	0.84	1.2
BOARDLVLC	-0.61	0.26	-2.33	0.02*	0.97	1.04
BANKSIZE	2.46	0.32	7.79	0.00**	0.82	1.22
R-square	0.316			**F-statistic**		12.63
Adjusted R-square	0.291			**Prob. (F-statistic)**		0.00**

Notes: The asterisk signs (**) and (*) indicate that the results are significant at 1 percent and 5 percent levels respectively.

Table 6 represents that board size has a positive and significant beta coefficient, β=0.44. It indicates that board size has a positive effect on the Z-score implying that the addition of one board member increases the Z-score by 0.44 which decreases the risk. This can be inferred that a bigger board enables members to dedicate themselves to better monitoring and controlling every probable risk prudently which allows the bank to mitigate risk-taking. However, the beta coefficients are negative for the number of board meetings, audit committee meetings, audit size, and the number of board-level committees. All the results are statistically significant at a 5 percent level of significance. The negative coefficients for board meetings and audit committee meetings show that the more the board meeting and audit committee meetings respectively, the higher would be the Z-score leading to lower risks.

Similarly, the negative significant beta coefficient, β=0.90, of the audit committee reveals that the smaller the audit committee, the higher would be the Z-score. It also shows that one more audit committee member increases the Z-score by 0.90. The results reveal that the fewer the number of board-level committees, the higher would be the Z-score which promotes bank stability. However, the positive significant beta coefficient of bank size shows that the increase in bank size increases the Z-score implying lower bank risk. This finding is consistent with the findings of Nepali (2018).

All the VIF values below 10 and tolerance values above 0.10, of independent variables, reveal that there is no evidence of multi-collinearity among them.

5. Conclusion

Corporate governance, a set of rules, policies, and practices that govern banks, enhances bank performance and reduces risk-taking leading to the financial stability of the economy. This study attempts to analyze the bank's corporate governance practices and their influence on bank performance and risk-taking using the balanced panel data collected from nineteen banks in Nepal, employing descriptive and causal-comparative research design, for the period of nine years from 2010 to 2018.

The study reveals that decreasing board meetings and audit committee meetings, up to regulatory requirements, increases the bank's Tobin's Q as the excessive meetings lead to unnecessary conflicts and disagreements in the board and higher meeting expenses leading to a decrease in returns. The study shows that an increase in board size leads to lower risk-taking and a higher Z-score. It is because a bigger board allows wider decisional perspectives to decide on the various ways to mitigate the bank risks and take prompt corrective actions. Similarly, a small and independent audit committee is beneficial for reducing

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bank risk. The reduction in board levels of committees and sub-committees helps to decrease conflict of interest that report directly to the board and facilitates to increase in bank performance and reduces risk. Likewise, the study further found that bigger banks are the prerequisite to gaining scale and scope economies having the better utilization of the resources including human capital to achieve higher bank performance and lower risks. There is evidence that foreign banks are significantly different from domestic banks in using CG mechanisms. Moreover, the study concludes that corporate governance has a notable stake in bank performance and risk-taking behavior in the Nepalese banking industry.

6. Limitations and Direction for Future Research

The study is limited to the linear regression model in analyzing the influence of corporate governance on the performance and risk-taking behavior of the banks. It does not consider the nonlinear relationship between the dependent and independent variables of the study. The study also has the limitation of only following a quantitative approach. It has not taken care of the qualitative approach. The reliability of the data lies in the available secondary data extracted from the annual reports of the respective banks. The study further can be extended to consider other corporate governance variables like CEO duality, independent board directors, women directors, age of the directors, director's qualification, and so on. Similarly, further study can be conducted using primary, secondary, or both sources of data with a qualitative research design incorporating more sample banks for the most comprehensive policy implications.

Conflicts of Interest: The author declares no conflict of interest.

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Appendix

Nepalese Banking Industry and Corporate Governance Practices

The Bank and Financial Institution Ordinance of 2004 was the first umbrella legislation to regulate and supervise all the Banks and Financial Institutions (BFIs) under a single legislation. This made provision to ensure good corporate governance and financial discipline in the BFIs and also ensured professionalism in their boards and management teams. This ordinance was later formalized as an Act-Banks and Financial Institutions Act (BAFIA), 2006. BAFIA has been replaced by BAFIA 2017, which was enacted on 23 April 2017 (NRB, Special Publications, 2018).
NRB has been issuing prudential guidelines for regular banking operations in the form of Unified Directives to BFIs. More specifically, directive no. 6 deals with the Provisions Relating to Good Corporate Governance which has focused on the following provisions:

1. Provisions relating to the code of conduct to be observed by directors

(11) The member of the board of directors shall seat on the board meeting regular basis. Such meetings can also be attended via video/teleconference. The absenteeism in more than three consecutive board meetings, without valid reason and pre-information, is liable for the self-vacant of that position of a board member.

7. Provisions relating to internal committees/sub-committees

(1) According to BAFIA, 2017, Section 22,26,27,60 and 61, the board of directors shall form committees and sub-committees and assign the functions, responsibilities, and authorities under its accountability.

(a) Banks and financial institutions can form the following committees and sub-committees only, under the headship of board members, to operate banking functions effectively.

- Audit Committee
- Risk Management Committee
- Staff Services and Facilities Committee
- Committee Relating to Money Laundering Prevention (AML Committee)

(b) Provided that the bank can form sub-committees for the special purpose, assigning the time frame, under the headship of a non-executive director.

(c) While forming the committees as per the 7(1, ka), there can be **three members in the audit committee** and other committees can have a minimum of three members to a maximum of five members including the needed invitee experts.

(2) Provisions relating to the audit committee

The Board of Directors shall form an audit committee under the headship of a non-executive director. Such committee shall have the head of the Internal Audit department as a secretary member.

Similarly, the Bank and Financial Institution Act (BAFIA), 2017 has made various provisions relating to good corporate governance, which focuses on the following provisions:

Chapter 4: Provisions on the board of directors and chief executive

14. Formation of Board of Directors: (1) A bank or financial institution shall have a Board of Directors comprising of **at least five directors and not exceeding seven directors.**

21. Meetings of the Board of Directors: (1) Meetings of the Board of Directors shall have to be held **at least 12 times a year.**

Provided that the **gap between the two meetings shall not be more than sixty days.**

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(4) No meeting of the Board of Directors shall be held unless it is attended by at least fifty-one percent of the total number of directors.

26. Sub-Committees may be formed: (1) Except otherwise expressly provided for in this Act that particular work shall be carried out by any particular agency or official, the Board of Directors may form **one or more sub-committee/s for any specific purpose** subject to the directives of the Nepal Rastra Bank.

Provided that, the chairperson of the board of directors shall not be allowed to remain in the sub-committee.

Chapter-9 Provisions on accounts, records, details, and reporting

60. Audit Committee: (1) The Board of Directors of a bank or financial institution shall have to form an audit committee comprising **three members** under the headship of one non-executive director.

(2) The Chairperson of the bank or financial institution, convener of the subcommittee, and the Chief Executive shall not be allowed to act in the audit committee referred to in Sub-Section (1).

(4) Except in cases of a meeting called by the Board of Directors, a meeting of the audit committee shall normally be **held once in three months.**

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