Corporate Governance and Liquidity Risk of Nepalese Commercial Banks

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Abstract

This study examines the relationship between corporate governance and liquidity risk in Nepalese commercial banks. Cash reserve ratio and credit to deposit ratio are selected as the dependent variables. Similarly, board size, independent directors, female directors, leverage ratio, audit committee and total assets are selected as the independent variables. This study is based on secondary data of 18 commercial banks with 108 observations for the study period from 2016/17 to 2021/22. The data were collected from Banking and Financial statistics published by Nepal Rastra bank and the annual reports of respective banks. The correlation coefficients and regression models are estimated to test the significance and importance of corporate governance on the level of liquidity risk in Nepalese commercial Banks.

The study revealed that board size has a positive impact on cash reserve ratio and credit to deposit ratio. It means that increase in board size leads to increase in cash reserve ratio and credit to deposit ratio. Similarly, independent director has a positive impact on cash reserve ratio. It indicates that increase in independent director leads to increase in cash reserve ratio. Likewise, independent director has a negative impact on credit to deposit ratio. It indicates that increase in independent director leads to decrease in credit to deposit ratio. Further, female directors have a negative impact on cash reserve ratio. It shows that higher the female directors, lower would be the cash reserve ratio. In addition, female directors have a positive impact on credit to deposit ratio. It shows that higher the female directors, higher would be the credit to deposit ratio. Likewise, leverage ratio has a positive impact on cash reserve ratio. It shows that higher the leverage ratio, higher would be the cash reserve ratio. Similarly, leverage ratio has a negative impact on credit to deposit ratio. It shows that higher the leverage ratio, lower would be the credit to deposit ratio. Moreover, this study showed audit committee has a negative impact on cash reserve ratio and credit to deposit ratio. It means that increase in audit committee leads to decrease in cash reserve ratio and credit to deposit ratio. Likewise, total assets have a positive impact on cash reserve ratio. It shows that larger the total assets, higher would be the cash reserve ratio. On the other hand, total assets have a negative impact on credit to deposit ratio. It shows that larger the total assets, lower would be the credit to deposit ratio.

Keywords: cash reserve ratio, credit to deposit ratio, board size, independent directors, female directors, leverage ratio, audit committee, total assets

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1. Introduction

Good corporate governance is considered a building block of success for microfinance institutions (MFIs) as it is presumed to help them in achieving their social and financial goals (Iqbal *et al*., 2019). Corporate governance is defined as the process and structure used to direct and manage the business and affairs of the company towards enhancing business prosperity and corporate accountability with the ultimate objective of realizing long-term shareholders value (Saad, 2010). Corporate governance (CG) is the process by which a board of directors, through management, guides an institution in fulfilling its corporate mission and protects the institution's assets over time (Bassem, 2009).

The intensity and frequency of board meetings is a major tool to measure the effectiveness of monitoring by the board of directors (Lipton and Lorsch, 1992). Failure to implement practices of good governance can lead to the downfall of MFIs or undermine their effectiveness due to poor decisions, reduced access to funds in the form of capital or donations, and compromised goodwill and trust (Beisland *et al*., 2015). Ahmed and Hamdan (2015) revealed that corporate governance is significantly correlated with firm performance. Board composition and board activities as represented by board meetings and its intensity are recognized as a mean to enhance the monitoring activity by board members and reflect on firm performance (Jensen, 1993).

Banks often encounter financial risks because of the nature of their daily work in business and their daily activities in the economy sector that requires risk-management mechanism addressing these crises efficiently (Aebi *et al*., 2012). In addition, Bank motivate people to keep their surplus money as deposits in the bank then bank utilize that money by providing loan to these people who have deficit and need of that fund or by investing that fund in another profitable sector (Selgin, 1988). Commercial banks play a very crucial role in the allocation of economic resource by basically helping to channel funds from depositors to investors in a continuous manner (Ongore and Kusa, 2013). Fase and Abma (2003) stated that the expansion of the financial system can have a positive impact on the economic growth of a country. Sound financial health of a bank is the guarantee not only to its depositors but is equally significant for the shareholders, employees and whole economy as well (Aspal and Malhotra, 2013). The bank liquidity is measured by the ratio of total loan to deposit. The higher credit relative to deposit, lower the liquidity, due to greater amount of cash disbursement to bank borrower in relation to the amount of cash receipt from bank depositors (Bonfin, 2009). Liquidity is a way which is used by the bank or banking sector to transform assets into the shape of cash to made payment in cash (Diamond and Rajan, 2005). The liquidity ratio is important in mostly organizations like banks because banks typically work through the huge number of funds deposited by savers. Liquidity ratios calculate a bank capacity to see the payment

responsibilities by relating the cash with the payment responsibilities. Liquid assets mostly comprise of cash, marketable securities, sovereign debt central bank reserves (Duijm and Wierts, 2016).

Khan and Ali (2016) investigated the relationship between liquidity and profitability of commercial banks in Pakistan. The study found that there is a significant positive relationship between liquidity with profitability of the banks. Liquidity ratios as a bank capacity to see the payment responsibilities by relating the cash with the payment responsibilities (Waleed *et al*., 2016). The bank liquidity is measured by the ratio of total loan to deposit. It measures the liquidity position of the bank (Bonfin, 2009). Tabita (2011) examined the impact of liquidity ratios on profitability. The study found that there is a negative relationship between liquidity ratio and return on assets. Luoma and Goodstein (1999) examined the relation between organizational performance and independent directors in the US firms. The study showed that regulated and larger organizations have more stakeholders on their boards than unregulated and smaller organizations. Labie and Mersland (2011) suggested that good governance is not only based on the ability to ensure the sustainability of the organization, but also on strategic vision and transparency. The study further suggested that this is possible when organizations adopt a stakeholder approach that includes the key actors in an organization. Mersland and Strøm (2009) found that having a female CEO and an internal auditor reporting to the board is associated with better financial performance. However, international directors on the board increase costs and reduce operational self-sufficiency. According to Imam and Malik (2007), the need for corporate governance arises from the potential conflicts of interest among participants (stakeholders) in the corporate structure. This conflict of interest often arises because different participants have different goals and preference.

Hongli *et al.* (2019) indicated that liquidity (LIQ) measured by current assets to current liabilities has a positive significant effect on return on equity (ROE). Likewise, Abbas *et al.* (2021) found that there is a positive relationship between the profitability and liquidity of the firms. Similarly, Suganya and Kengatharan (2018) found that there is no any significant impact of liquidity on profitability of the firms. Likewise, Ningsih and Sari (2019) found that liquidity doesn't affect the return on assets (ROA) of the firm. Similarly, Awulo *et al.* (2019) found that liquidity ratio significantly and positively affected return on asset. In addition, Lartey *et al.* (2013) found a positive relationship between liquidity and profitability of listed banks in Ghana. Mahdi and Abbes (2018) found that profitability of the bank (measured by ROA) is positively related to capital and bank liquidity. In addition, Lukorito *et al.* (2014) found that liquidity has a statistically significant and positive relationship with banks' profitability.

Leverage (LEV) is defined as the ratio of total debts to total assets (Bunyaminu *et al.,* 2021). Leverage is the ratio that is used to measure how

much the company is financed with debt (Bintara, 2020). Myers and Majluf (1984) stated that firms use debt only when the internal financing is not available and argued against the existence of target capital structure. Debt financing sources may also exert different effects on managerial incentives and resolve moral hazard issues. In addition, when ownership and control over a firm is diluted, managerial optimality rather than shareholders optimality should be considered (Zwiebel, 1996). Egungwu and Egunwu (2018) examined the effect of corporate governance dynamics on the asset quality of Nigerian banks. The study found that board size has a significant positive influence on asset quality of Nigerian banks. In addition, Salhi and Boujelbene (2012) found that a smaller board size help to reduce the risk-taking activities. Similarly, Booth *et al*. (2002) suggested that a smaller proportion of outside directors lead to more risk-bearing actions of the bank due to agency conflicts. Further, Beasley (1996) found that audit committee does not have relationship with financial statement fraud. Similarly, Tu *et al.* (2014) revealed that audit committee does not explains the changes in capital, credit and liquid risks.

In the context of Nepal, Poudel andHovey (2012) found positive relationship of board size and audit committee size with bank efficiency while negative relationship of board meetings with bank efficiency. Pradhan and Adhikari (2009) found that corporate governance is positively related to the bank performance. Baral (2005) revealed that poor assets level and low level of liquidity are the two major cause of bank failure. Nepali (2022) examined the linkages of corporate governance with the performance and risk-taking of Nepalese banks. The study revealed that a greater number of board meetings and audit committee meetings leads to better performance and lower risk. Silwal (2018) found that board size has a negative and significant effect on firm performance.

The above discussion shows that empirical evidences vary greatly across the studies on the relationship between corporate governance and liquidity risk in commercial banks. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The main purpose of the study is to analyze the relationship between corporate governance and liquidity risk in Nepalese commercial banks. Specifically, it examines the relationship of board size, independent directors, female directors, leverage ratio, audit committee and total assets with cash reserve ratio and credit to deposit ratio of Nepalese commercial banks.

The remainder of this study is organized as follows. Section two describes the sample, data and methodology. Section three presents the empirical results and the final sections draws the conclusion.

2. Methodological aspects

The study is based on the secondary data which were gathered from 18 commercial banks for the period from 2016/17-2021/22, leading to a total of 108 observations. The study employed stratified sampling method. The main sources of data include Banking and Financial Statistics published by Nepal Rastra Bank, reports published by Ministry of Finance and annual report of respective banks. This study is based on descriptive as well as causal comparative research designs. Table 1 shows the list of commercial banks selected for the study along with the study period and number of observations.

Table 1

List of commercial banks selected for the study along with study period and number of observations

S.N.	Name of commercial banks	Study period	Observations
1	Agricultural Development Bank Limited	2016/17- 2021/22	6
2	Nabil Bank Limited	2016/17- 2021/22	6
3	Nepal Investment Bank Limited	2016/17- 2021/22	6
4	Standard Chartered Bank Limited	2016/17- 2021/22	6
5	Himalayan Bank Limited	2016/17- 2021/22	6
6	Nepal SBI Bank Limited	2016/17- 2021/22	6
7	Everest Bank Limited	2016/17- 2021/22	6
8	Kumari Bank Limited	2016/17- 2021/22	6
9	Laxmi Bank Limited	2016/17- 2021/22	6
10	Citizens Bank International Limited	2016/17- 2021/22	6
11	Prime Commercial Bank Limited	2016/17- 2021/22	6
12	Sanima Bank Limited	2016/17- 2021/22	6
13	Civil Bank Limited	2016/17- 2021/22	6
14	Siddhartha Bank Limited	2016/17- 2021/22	6
15	Prabhu Bank Limited	2016/17- 2021/22	6
16	Machhapuchchhre Bank Limited	2016/17- 2021/22	6
17	NIC Asia Bank Limited	2016/17- 2021/22	6
18	Global IME Bank Limited	2016/17- 2021/22	6
Total number of observations			108

Thus, the study is based in 108 observations.

The model

The model estimated in this study assumes that the bank's liquidity risk depends on corporate governance mechanism. The dependent variables

selected for the study are cash reserve ratio and credit to deposit ratio. Similarly, the selected independent variables are board size, independent directors, female directors, leverage ratio, audit committee and total assets. Therefore, the model takes the following form:

$$CRR= \beta_0+\beta_1 BS+ \beta_2 ID+ \beta_3 FD+ \beta_4 LR + \beta_5 AC + \beta_6 TA +e_{it}$$
$$CDR= \beta_0+\beta_1 BS+ \beta_2 ID+ \beta_3 FD+ \beta_4 LR + \beta_5 AC + \beta_6 TA +e_{it}$$

Where,

CRR= Cash reserve ratio, in billions.

CDR= Credit to deposit ratio, in percentage.

BS= Board size as measured by the number of board members, in numbers.

AC= Audit committee as measured by the number of audit members, in numbers.

ID= Independent director as measured by the number of independent directors on the board, in numbers.

LR= Leverage ratio as measured by the ratio of total debts to total assets, in percentage.

FD = Female director as measured by total number of female directors in the board.

TA= Total assets, Rs in billions.

The following section describes the independent variables used in this study along with hypothesis formulation.

Board size

Yermack (1996) reported a negative relationship between board size and firm valuation. Similarly, Huther (1997) revealed a negative board size effect on firm performance. Likewise, Eisenberg *et al.* (1998) found a negative relationship between board size and firm valuation for a sample of small Finnish firms. In addition, Adams and Mehran (2003) found a significant positive relationship between board size and performance. Based on it, this study develops the following hypothesis:

H_1: There is a negative relationship between board size and liquidity risk.

Independent director

Kapoor and Goel (2019) suggested that the diligence of independent directors has a significant impact on earnings management. Similarly, Bryan and Mason (2020) revealed a negative relationship between the proportion of independent directors with relatively low reputation incentives and accruals

quality. Likewise, James (2021) revealed that long-tenured independent directors are better monitors and advisors. The study also concluded that long-tenured directors benefit firms and their investors by enhancing firm transparency and reducing information risk. Further, Nguyen *et al.* (2017) revealed that independent directors have an overall negative effect on firm operating performance. Based on it, this study develops the following hypothesis:

H_2: There is a positive relationship between independent directors and liquidity risk.

Female directors

Terjesen *et al.* (2016) found that firms with more female directors have higher firm performance by market (Tobin's Q) and accounting (return on assets) measures. Similarly, Belaounia *et al.* (2020) concluded that firms with higher female board representation exhibit higher overall performance, less earnings management and less excessive risk taking in which all three relations are stronger in countries with greater gender equality. Likewise, Green and Homroy (2018) demonstrated a robust positive effect of female board representation on firm performance. In addition, Arun *et al.* (2015) found that firms with a higher number of female and independent female directors are adopting restrained earnings management practices in the UK. Based on it, this study develops the following hypothesis:

H_3: There is a positive relationship between female director in board and liquidity risk.

Audit committee

Kajola (2008) revealed that there is no relation between audit committee's size and firm performance. Utomo and Chariri (2013) found that the greater size of audit committee are expected to carry out more oversight monitoring on the extent of information that disclosed in annual report. Buallay (2018) found that there is a significant positive impact of audit committee characteristics on intellectual capital and enhances firm performance. In addition, Ud Din (2020) concluded that the accounting expertise of audit committee female chairs enhances financial reporting quality and firm performance. Anderson *et al.* (2004) showed a negative relationship between size of audit committee and firm performance. Based on it, this study develops the following hypothesis:

H_4: There is a negative relationship between audit committee and liquidity risk.

Leverage

Singapurwoko and Wahid (2011) indicated that leverage has a positive relationship with the profitability of the companies. Likewise, Kumar (2014) concluded a positive relationship between financial leverage and firm's profitability. Similarly, Akinlo and Asaolu (2012) revealed that leverage has a negative effect on profitability. Barakat (2014) showed that there is no statistically significant relationship between financial leverage and return on equity. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between leverage and liquidity risk.

Total assets

Zaman (2021) indicated that the effect of total asset turnover on return on assets has a positive insignificant effect. Similarly, Sari (2020) showed that both long-term and short-term third-party funds and financing to deposit ratio have a positive and significant relationship to the total assets of Islamic banks Indonesia. Likewise, Siddikee *et al.* (2013) showed that the Coefficient of correlation between the net income and total asset is positive in 90% financial organizations. The study also revealed that assets have impact on the growth of financial organizations. In addition, Alsufy (2019) revealed that capital structure components measured by total debt to total assets has a positive but insignificant effect on total assets turnover. The study also revealed that the relationship is negative and significant between capital structures measured by debt-to-equity ratio and total assets turnover. Based on it, this study develops the following hypothesis:

H_6: There is a positive relationship between total assets and liquidity risk.

3. Results and discussion

Descriptive statistics

Table 2 presents the descriptive statistics of selected dependent and independent variables during the period 2016/17-2021/22.

Table 2

Descriptive statistics

This table shows the descriptive statistics of dependent and independent variables of 18 Nepalese commercial banks for the study period 2016/17-2021/22. The dependent variables are CRR (Cash reserve ratio, Rs in billions) and CDR (Credit to deposit ratio, in percentage). The independent variables are BS (Board size as measured by the number of board members, in numbers), AC (Audit committee size as measured by the number of audit members, in numbers), ID (Independent director as measured by the number of independent directors on the board, in numbers), LR (Leverage ratio as measured by the ratio of total debts to total assets, in percentage), FD (Female director as measured by total number of female directors in the board) and TA (Total assets, in Rs).

Variables	Minimum	Maximum	Mean	S.D.
CRR	1.261	9.079	4.250	1.586
CDR	57.450	103.383	84.880	7.804
BS	4.002	8.001	6.356	0.942
NID	0.001	1.004	0.634	0.488
NWD	0.001	2.006	0.648	0.633
LEV	71.833	94.001	88.113	3.355
AC	3.002	4.000	3.107	0.307
TA	35.271	346.151	145.822	60.398

Correlation analysis

Having indicated the descriptive statistics, Pearson's correlation coefficients are computed and the results are presented in Table 3.

Table 3

Pearson's correlation coefficients matrix

This table shows the bivariate Pearson's correlation coefficients of dependent and independent variables of 18 Nepalese commercial banks for the study period 2016/17-2021/22. The dependent variables are CRR (Cash reserve ratio, Rs in billions) and CDR (Credit to deposit ratio, in percentage).The independent variables are BS (Board size as measured by the number of board members, in numbers), AC (Audit committee size as measured by the number of audit members, in numbers), ID (Independent director as measured by the number of independent directors on the board, in numbers), LR (Leverage ratio as measured by the ratio of total debts to total assets, in percentage), FD (Female director as measured by total number of female directors in the board) and TA (Total assets, in Rs).

Variables	CRR	CDR	BS	ID	FD	LR	AC	TA
CRR	1							
CDR	-0.137	1						
BS	0.294**	0.073	1					
ID	0.225*	-0.010	0.200*	1				
FD	-0.117	0.104	-0.104	0.162	1			
LR	0.289**	-0.136	-0.017	0.025	-0.205*	1		
AC	-0.142	-0.105	0.037	-0.066	0.091	-0.099	1	
TA	0.881**	-0.009	0.302**	0.347**	0.029	0.301**	-0.104	1

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Table 3 shows that board size has a positive relationship with cash reserve ratio. It means that increase in board size leads to increase in cash reserve ratio. Similarly, independent director has a positive relationship with cash reserve ratio. It means that increase in independent director leads to increase in cash reserve ratio. Further, this study shows that there is a negative

relationship between number of female directors and cash reserve ratio. It means that increase in number of female directors leads to decrease in cash reserve ratio. Likewise, leverage ratio has a positive relationship with cash reserve ratio. It shows that higher the leverage ratio, higher would be the cash reserve ratio. Likewise, audit committee size has a negative relationship with cash reserve ratio. It means that increase in audit committee leads to decrease in cash reserve ratio. Furthermore, there is a positive relationship between total assets and cash reserve ratio. It indicates that increase in total assets leads to increase in cash reserve ratio.

On the other hand, the result also shows that board size has a positive relationship with credit to deposit ratio. It means that increase in board size leads to increase in credit to deposit ratio. Similarly, independent director has a negative relationship with credit to deposit ratio. It means that increase in independent director leads to decrease in credit to deposit ratio. Further, this study shows that there is a positive relationship between number of female directors and credit to deposit ratio. It means that increase in number of female directors leads to increase in credit to deposit ratio. Likewise, leverage ratio has a negative relationship with credit to deposit ratio. It shows that higher the leverage ratio, lower would be the credit to deposit ratio. Likewise, audit committee size has a negative relationship with credit to deposit ratio. It means that increase in audit committee leads to decrease in credit to deposit ratio. Furthermore, there is a negative relationship between total assets and credit to deposit ratio. It indicates that increase in total assets leads to decrease in credit to deposit ratio.

Regression analysis

Having indicated the Pearson's correlation coefficients, the regression analysis has been carried out and results are presented in Table 4. More specifically, it shows the regression results of board size, independent directors, female directors, leverage ratio, audit committee and total assets with cash reserve ratio of Nepalese commercial banks.

Table 4 shows that the beta coefficients for board size are positive with cash reserve ratio. It indicates that board size has a positive impact on cash reserve ratio. This finding is similar to the findings of Adams and Mehran (2003). Likewise, the beta coefficients for independent directors are positive with cash reserve ratio. It indicates that independent directors have a positive impact on cash reserve ratio. This finding is consistent with the findings of James (2021). Similarly, the beta coefficients for number of female directors are negative with cash reserve ratio. It indicates that number of female directors has a negative impact on cash reserve ratio. This finding contradicts with the findings of Terjesen *et al.* (2016). Further, the beta coefficients for leverage ratio are positive with cash reserve ratio. It indicates that leverage

ratio has a positive impact on cash reserve ratio. This finding is similar to the findings of Singapurwoko and Wahid (2011). Similarly, the beta coefficients for audit committee are negative with cash reserve ratio. It indicates that audit committee has a negative impact on cash reserve ratio. This finding is consistent with the findings of Kajola (2008). Moreover, the beta coefficients for total assets are positive with cash reserve ratio. It indicates that total assets have a positive impact on cash reserve ratio. This finding contradicts with the findings of Zaman (2021).

Table 4

Estimated regression results of board size, independent directors, female directors, leverage ratio, audit committee and total assets on cash reserve ratio

The results are based on panel data of 18 Nepalese commercial banks with 108 observations for period 2016/17-2021/22 by using linear regression model. The model is CRR= $\beta_0+\beta_1$ BS+ β_2 ID+ β_3 FD+ β_4 LR + β_5 AC + β_6 TA +e_{it} where dependent variable is CRR (Cash reserve ratio, Rs in billions). The independent variables are BS (Board size as measured by the number of board members, in numbers), AC (Audit committee size as measured by the number of audit members, in numbers), ID (Independent director as measured by the number of independent directors on the board, in numbers), LR (Leverage ratio as measured by the ratio of total debts to total assets, in percentage), FD (Female director as measured by total number of female directors in the board) and TA (Total assets, in Rs).

Models	Intercepts	Regression coefficients of						Adj. R_bar2	SEE	F-value
		BS	ID	FD	LR	AC	TA			
1	1.111 (1.106)	0.496 (3.168)**						0.068	1.522	10.036
2	3.786 (15.242) **		0.740 (2.380)*					0.051	1.551	5.665
3	4.449 (20.354)**			-0.294 (1.215)				0.014	1.580	1.476
4	-7.773 (2.008)*				0.173 (3.111)**			0.084	1.523	9.676
5	6.560 (4.198)**					-0.742 (1.480)		0.020	1.576	2.190
6	0.888 (4.668)**						0.023 (19.166)**	0.776	0.753	367.336
7	1.118 (1.126)	0.437 (2.769)**	0.569 (1.850)					0.115	1.504	6.844
8	1.459 (1.427)	0.407 (2.564)*	0.646 (2.072)*	-0.311 (1.323)				0.130	1.50	5.178
9	-10.265 (2.600)**	0.433 (2.828)**	0.581 (1.932)	-0.157 (0.676)	0.131 (3.066)**			0.203	1.442	6.548
10	-8.215 (1.922)	0.445 (2.908)**	0.548 (1.819)	-0.130 (0.559)	0.127 (2.973)**	-0.572 (1.235)		0.214	1.438	5.570
11	2.046 (0.917)	0.041 (0.514)	0.244 (1.538)	-0.319 (2.718)**	0.005 (0.216)*	-0.227 (0.971)	0.024 (17.358)**	0.803	0.724	68.526

Notes:

i.   Figures in parenthesis are t-values.

ii.   The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.

iii. Cash reserve ratio is the dependent variable.

Table 5 shows the estimated regression results of board size, independent

directors, female directors, leverage ratio, audit committee and total assets on credit to deposit ratio in Nepalese commercial banks.

Table 5

Estimated regression results of board size, independent directors, female directors, leverage ratio, audit committee and total assets on credit to deposit ratio

The results are based on panel data of 18 Nepalese commercial banks with 108 observations for period 2016/17-2021/22 by using linear regression model. The model is $CDR= \beta_0+\beta_1 BS+ \beta_2 ID+ \beta_3 FD+ \beta_4 LR + \beta_5 AC + \beta_6 TA +e_{it}$ where dependent variable is CDR (Credit to deposit ratio, in percentage). The independent variables are BS (Board size as measured by the number of board members, in numbers), AC (Audit committee size as measured by the number of audit members, in numbers), ID (Independent director as measured by the number of independent directors on the board, in numbers), LR (Leverage ratio as measured by the ratio of total debts to total assets, in percentage), FD (Female director as measured by total number of female directors in the board) and TA (Total assets, in Rs).

Models	Intercepts	Regression coefficients of						Adj. R_bar2	SEE	F-value
		BS	ID	FD	LR	AC	TA			
1	81.050 (15.705)**	0.604 (0.571)						0.005	7.819	0.564
2	84.990 (67.702)**		-0.164 (0.104)					0.000	7.839	0.011
3	84.051 (77.968)**			1.287 (0.077)				0.012	7.797	1.161
4	112.670 (5.711)**				-0.315 (1.409)			0.018	7.767	1.986
5	93.257 (12.063)**					-2.699 (1.088)		0.011	7.797	1.184
6	85.063 (42.976)**						-0.001 (0.097)	0.000	7.839	0.009
7	81.045 (15.634)**	0.646 (0.785)	-0.416 (0.259)					0.006	7.854	0.313
8	79.391 (14.857)**	0.791 (0.952)	-0.792 (0.485)	1.508 (1.227)				0.020	7.835	0.712
9	103.035 (4.810)**	0.739 (0.890)	-0.661 (0.405)	1.196 (0.952)	-0.263 (1.140)			0.032	7.824	0.860
10	115.410 (4.986)**	0.811 (0.979)	-0.861 (0.528)	1.358 (1.081)	-0.287 (1.245)	-3.453 (1.376)		0.050	7.790	1.073
11	115.366 (4.782)**	0.813 (0.934)	-0.858 (0.501)	1.359 (1.071)	-0.286 (1.165)	-3.455 (1.365)	0.000 (0.007)	0.050	7.828	0.885

Notes:

i. Figures in parenthesis are t-values.

ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.

iii. Credit to deposit ratio is the dependent variable.

Table 5 shows that the beta coefficients for board size are positive with credit to deposit ratio. It indicates that board size has a positive impact on credit to deposit ratio. This finding is consistent with the findings of Adams and Mehran (2003). Likewise, the beta coefficients for independent directors are negative with credit to deposit ratio. It indicates that independent directors have a negative impact on credit to deposit ratio. This finding is similar to

the findings of Bryan and Mason (2020). Similarly, the beta coefficients for number of female directors are positive with credit to deposit ratio. It indicates that number of female directors has a positive impact on credit to deposit ratio. This finding is consistent with the findings of Green and Homroy (2018). Further, the beta coefficients for leverage ratio are negative with credit to deposit ratio. It indicates that leverage ratio has a negative impact on credit to deposit ratio. This finding is similar to the findings of Akinlo and Asaolu (2012). Similarly, the beta coefficients for audit committee are negative with credit to deposit ratio. It indicates that audit committee has a negative impact on credit to deposit ratio. This finding is consistent with the findings of Anderson *et al.* (2004). Moreover, the beta coefficients for total assets are negative with credit to deposit ratio. It indicates that total assets have a negative impact on credit to deposit ratio. This finding is similar to the findings of Alsufy (2019).

4. Summary and conclusion

Good corporate governance is considered a building block of success for microfinance institutions (MFIs) as it is presumed to help them in achieving their social and financial goals. Corporate governance is defined as the process and structure used to direct and manage the business and affairs of the company towards enhancing business prosperity and corporate accountability with the ultimate objective of realizing long-term shareholders value. Board composition and board activities as represented by board meetings and its intensity are recognized as a mean to enhance the monitoring activity by board members and reflect on firm performance.

This study attempts to analyze the relationship between corporate governance and liquidity risk in Nepalese commercial banks. The study is based on secondary data of 18 commercial banks with 108 observations for the period from 2016/17-2021/22.

The study showed that female directors, and audit committee have negative impact on cash reserve ratio. Similarly, board size, independent directors, leverage ratio, and total assets have a positive impact on cash reserve ratio. The study showed that leverage ratio, independent directors, audit committee and total assets have negative impact on credit to deposit ratio. Similarly, board size and female directors have a positive impact on credit to deposit ratio. Likewise, the study concluded that total assets followed by leverage ratio is the most influencing factor that explains the changes in the cash reserve ratio of Nepalese commercial banks. Similarly, the study also concluded that leverage ratio is the most influencing factor that explains the changes in credit to deposit ratio in the context of Nepalese commercial

banks.

References

Abbas, F., S. Ali, and M. Ahmad, 2021. Does economic growth affect the relationship between banks' capital, liquidity and profitability: Empirical evidence from emerging economies? *Journal of Economic and Administrative Sciences* 1(1), 1-13.

Adams, R., and H. Mehran, 2003. Is corporate governance different from bank holding companies? *FRBNY Economic Policy Review* 9(2), 123-142.

Aebi, V., G. Sabato, and M. Schmid, 2012. Risk management, corporate governance, and bank performance in the financial crisis. *Journal of Banking and Finance*, 36(12), 3213-3226.

Ahmed, E., and A. Hamdan, 2015. The impact of corporate governance on firm performance. *The Journal of International Management Review* 11(2), 21-37.

Akinlo, O., and T. Asaolu, 2012. Profitability and leverage: Evidence from Nigerian firms. *Global Journal of Business Research* 6(1), 17-25.

Alsufy, F. J. H., 2019. The impact of capital structure components on the total asset's turnover: Evidence from Amman stock exchange. *International Business Research* 12(7), 71-75.

Anderson, J. R., D. Bothell, M. D. Byrne, S. Douglass, C. Lebiere, and Y. Qin, 2004. An integrated theory of the mind. *Psychological Review* 111(4), 1036.

Arun, T. G., Y. E. Almahrog, and Z. A. Aribi, 2015. Female directors and earnings management: Evidence from UK companies. *International Review of Financial Analysis* 39(1), 137-146.

Aspal, P. K., and N. Malhotra, 2013. Performance appraisal of Indian public sector banks. *World Journal of Social Science* 3(3), 7-14.

Awulo, T., A. Alemu, and B. W. Chala, 2019. Impact of liquidity on profitability of bank: A case of commercial bank of Ethiopia. *Research Journal of Finance and Accounting* 10(1), 26-32.

Barakat, A., 2014. The impact of financial structure, financial leverage and profitability on industrial companies shares value (Applied study on a sample of Saudi industrial companies). *Research Journal of Finance and Accounting* 5(1), 55-66.

Baral, K. J., 2005. Health check-up of commercial bank in the framework of CAMEL: A case study of joint venture bank in Nepal. *Journal of Nepalese Business Studies* 2(1), 41-55.

Bassem, B. S., 2009. Governance and performance of microfinance institutions in Mediterranean countries. *Journal of Business Economics and Management* 10(1), 31-43.

Beasley, M. S., 1996. An empirical analysis of the relation between the board of

director composition and financial statement fraud. *Accounting Review* 71(4), 443-465.

Beisland, L. A., R. Mersland, and R. O. Strom, 2015. Audit quality and corporate governance: Evidence from the microfinance industry. *International Journal of Auditing* 19(3), 218-237.

Belaounia, S., R. Tao, and H. Zhao, 2020. Gender equality's impact on female directors' efficacy: A multi-country study. *International Business Review* 29(5), 1017-1037.

Bintara, R., 2020. The effect of working capital, liquidity and leverage on profitability. *Saudi Journal of Economics and Finance Abbreviated* 4(1), 28-35.

Bonfin, D., 2009. Credit risk drivers: Evaluating the contribution of firm level information and of macroeconomic dynamics. *Journal of Banking and Finance* 33(2), 199-281.

Booth, J. R., M. M. Cornett, and H. Tehranian, 2002. Boards of directors, ownership, and regulation. *Journal of Banking and Finance* 26(10), 1973-1996.

Bryan, D. B., and T. W. Mason, 2020. Independent director reputation incentives, accruals quality and audit fees. *Journal of Business Finance and Accounting* 47(7-8), 982-1011.

Bunyaminu, A., I. N. Yakubu, and S. Bashiru, 2021. The effect of financial leverage on profitability: an empirical analysis of recapitalized banks in Ghana. *International Journal of Accounting and Finance Review 7*(1), 93-102.

Diamond, D. W., and R. G. Rajan, 2005. Liquidity shortages and banking crises. *The Journal of Finance 60*(2), 615-647.

Duijm, P., and P. Wierts, 2016. The effects of liquidity regulation on bank assets and liabilities. *International Journal of Central Banking (IJCB)* 12(2), 385-411.

Egungwu, I., and N. U. Egunwu, 2018, Effect of corporate governance on asset quality of banks (evidence from Nigeria). *International Journal of Academic Research in Business and Social Sciences* 8(12), 1982-2002.

Eisenberg, T., S. Sundgren, and M. T. Wells, 1998. Larger board size and decreasing firm value in small firms. *Journal of Financial Economics* 48(1), 35-54.

Fase, M. M., and R. C. N. Abma, 2003. Financial environment and economic growth in selected Asian countries. *Journal of Asian Economies* 14(1), 11-21.

Green, C. P., and S. Homroy, 2018. Female directors, board committees and firm performance. *European Economic Review* 102(1), 19-38.

Hongli, J., E. S. Ajorsu, and E. K. Bakpa, 2019. The effect of liquidity and financial leverage on firm performance: Evidence from listed manufacturing firms on the Ghana stock exchange. *Research Journal of Finance and Accounting* 10(8),

91-100.

Huther, J. 1997. An empirical test of the effect of board size on firm efficiency. *Economics Letters* 54(3), 259-264.

Imam, M. O., and M. Malik, 2007. Firm performance and corporate governance through ownership structure: Evidence from Bangladesh stock market. *International Review of Business Research Papers 3*(4), 88-110.

Iqbal, S., A. Nawaz, and S. Ehsan, 2019. Financial performance and corporate governance in microfinance: Evidence from Asia. *Journal of Asian Economics* 60(2), 1-13.

James, H. L., T. Ngo, and H. Wang, 2021. Independent director tenure and corporate transparency. *The North American Journal of Economics and Finance* 57(1), 101-113.

Jensen, M. C., 1993. The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance* 48(3), 831-880.

Kajola, S. O., 2008. Corporate governance and firm performance: The case of Nigerian listed firms. *European Journal of Economics, Finance and Administrative Sciences* 14(14), 16-28.

Kapoor, N., and S. Goel 2019. Do diligent independent directors restrain earnings management practices? Indian lessons for the global world. *Asian Journal of Accounting Research* 4(1), 52-69.

Khan, R. A., and M. Ali, 2016. Impact of liquidity on profitability of commercial banks in Pakistan: An analysis on banking sector in Pakistan. *Global Journal of Management and Business Research* 16(1), 53-60.

Kumar, D. M., 2014. An empirical study in relationship between leverage and profitability in Bata India limited. *International Journal of Advance Research in Computer Science and Management Studies* 2(5), 1-10.

Labie, M., and R. Mersland, 2011. Corporate governance challenges in microfinance. *The Handbook of Microfinance* 6(2), 283-300.

Lartey, V. C., S. Antwi, and E. K. Boadi, 2013. The relationship between liquidity and profitability of listed banks in Ghana. *International Journal of Business and Social Science* 4(3), 48-56.

Lipton, M., and J. W. Lorsch, 1992. A modest proposal for improved corporate governance. *The Business Lawyer* 48(1), 59-77.

Lukorito, S. N., W. Muturi, A. Nyang'au, and D. Nyamasege, 2014. Assessing the effect of liquidity on profitability of commercial banks in Kenya. *Research Journal of Finance and Accounting 5*(19), 145-152.

Luoma, P., and J. Goodstein, 1999. Stakeholders and corporate boards: Institutional influences on board composition and structure. *Academy of Management Journal* 42(5), 553-563.

Mahdi, I. B. S., and M. B. Abbes, 2018. Relationship between capital, risk and liquidity: A comparative study between Islamic and conventional banks in MENA region. *Research in International Business and Finance* 45(1), 588-596.

Mersland, R., and R. O. Storm, 2009. Performance and governance in microfinance institutions. *Journal of Banking and Finance* 33(1), 662-669.

Myers, S., and N. Majluf, 1984. Corporate financing and investment decisions when firm have information that investors do not have. *Journal of Financial Economics* 13(5), 187-221.

Nepali, S. R., 2022. Does corporate governance matter for bank performance and risk-taking? Insights from the Nepalese banking industry. *Finance and Economics Review* 4(2), 47-60.

Nguyen, T. T. M., E. Evans, and M. Lu, 2017. Independent directors, ownership concentration and firm performance in listed companies: Evidence from Vietnam. *Pacific Accounting Review* 29(2), 204-226.

Ningsih, S., and S. P. Sari, 2019. Analysis of the effect of liquidity ratios, solvability ratios and profitability ratios on firm value in go public companies in the automotive and component sectors. *International Journal of Economics, Business and Accounting Research (IJEBAR)* 3(4), 351-359.

Ongore, V. O., and G. B. Kusa, 2013. Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues* 3(1), 237-252.

Poudel, R. P., and A. M. Hovey, 2013. Corporate governance and efficiency in Nepalese commercial banks. *International Review of Business Research Papers* 9(4), 53-64.

Pradhan, R. S. and S. N. Adhikari, 2009. Corporate governance and firm's performance. *Management Review* 1(1), 22-29.

Saad, N. M., 2010. Corporate governance compliance and the effects to capital structure in Malaysia. *International Journal of Economics and Finance*, 2(1), 105-114.

Salhi, B., and Y. Boujelbene, 2012. Effect of the internal banking mechanisms of governance on the risk-talking by the Tunisian Banks. *International Journal of Economics, Finance and Management* 1(1), 8-19.

Sari, M. K., 2020. Determinant of total assets of Sharia banks in Indonesia (An error correction model approach). *Amwaluna: Jurnal Ekonomi Dan Keuangan Syariah*, 4(2), 300-310.

Selgin, G. A., 1988. Praxeology and understanding: An analysis of the controversy in Austrian economics. *The Review of Austrian Economics* 2(1), 19-58.

Siddikee, M. J. A., M. R. Haque, M. F. Islam, S. Parvin, and M. S. Hossain, 2013.

Effect of net income on total assets of financial organizations. *Journal of Science and Technology* 11(13), 112, 117.

Silwal, P. P. 2018. Market timing and debt-equity choice of Nepalese Firms. *International Research Journal of Management Science* 3(1), 81-97.

Singapurwoko, A., and M. S. M. El-Wahid, 2011. The impact of financial leverage to profitability study of non-financial companies listed in Indonesia stock exchange. *European Journal of Economics, Finance and Administrative Sciences* 32(32), 136-148.

Suganya, S. J., and L. Kengatharan, 2018. Impact of bank internal factor on profitability of commercial bank in Sri Lanka: A panel data analysis. *Journal of Business Studies* 5(1), 61-74.

Tabita, I., 2011. Impacts of liquidity ratios on profitability (Case of oil and gas companies of Pakistan). *Interdisciplinary Journal of Research in Business* 1(7), 95-98.

Terjesen, S., E. B. Couto, and P. M. Francisco, 2016. Does the presence of independent and female directors' impact firm performance? A multi-country study of board diversity. *Journal of Management and Governance* 20(1), 447-483.

Tu, T., N. H. Son, and P. B. Khanh, 2014. Testing the relationship between corporate governance and bank performance: An empirical study on Vietnamese banks. *Asian Social Science* 10(9), 213-226.

Ud Din, N., X. Cheng, B. Ahmad, M. F. Sheikh, O. G. Adedigba, Y. Zhao, and S. Nazneen, 2020. Gender diversity in the audit committee and the efficiency of internal control and financial reporting quality. *Economic Research-Ekonomska Istraživanja* 1(1), 1-20.

Utomo, Y., and A. Chariri, 2014. Determinan pengungkapan risiko pada perusahaan nonkeuangan di Indonesia. *Diponegoro Journal of Accounting* 3(3), 687-700.

Waleed, A., A. Pasha, and A. Akhtar, 2016. Exploring the impact of liquidity on profitability: Evidence from banking sector of Pakistan. *Journal of Internet Banking and Commerce* 21(3), 1-12.

Yermack, D., 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics* 40(2), 185-211.

Zaman, M. B., 2021. Influence of debt to total asset ratio (DAR) current ratio (CR) and total asset turnover (TATO) on return on asset (ROA) and its impact on stock prices on mining companies on the Indonesia stock exchange in 2008-2017. *Journal of Industrial Engineering and Management Research* 2(1), 114-132.

Zwiebel, J., 1996. Dynamic capital structure under managerial entrenchment. *American Economic Journal* 8(65), 1197–1215.