Effect of Financial Risk, Capital Structure, Banking Liquidity on Profitability of Nepalese Commercial Banks

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Abstract

This study examines the effect of financial risk, capital structure, banking liquidity on profitability of Nepalese commercial banks. Return on assets and return on equity are the selected dependent variables. The selected independent variables are non-performing loans, loan loss provision, capital adequacy ratio, debt-to-equity ratio, loan-to-deposit ratio and liquidity ratio. The study is based on secondary data of 10 Nepalese commercial banks with 100 observations for the study period from 2014/15 to 2023/24. The data were collected from Bank Supervision Report published by Nepal Rastra Bank (NRB) and annual reports of the selected commercial banks. The correlation coefficients and regression models are estimated to test the significance and importance of financial risk, capital structure, banking liquidity on profitability of Nepalese commercial banks.

The study showed that non-performing loan has a negative impact on return on assets and return on equity. It indicates that increase in non-performing loan leads to decrease in return on assets and return on equity. Similarly, loan loss provision has a negative impact on return on assets and return on equity. It indicates that increase in loan loss provision leads to decrease in return on assets and return on equity. However, capital adequacy ratio has a positive impact on return on assets and return on equity. It indicates that increase in capital adequacy ratio leads to increase in return on assets and return on equity. In contrast, debt-to-equity ratio has a positive impact on return on assets and return on equity. It indicates that increase in debt-to-equity ratio leads to increase in return on assets and return on equity. Likewise, loan-to-deposit ratio has a positive impact on return on assets and return on equity. It indicates that higher the loan-to-deposit ratio, higher would be the return on assets and return on equity. However, liquidity ratio has a negative impact on return on assets and return on equity. It indicates that increase in Liquidity ratio leads to decrease in return on assets and return on equity.

Keywords: non-performing loans, loan loss provision, capital adequacy ratio, debt-to-equity ratio, loan-to-deposit ratio, liquidity ratio, return on assets, return on equity

1. Introduction

Capital structure is a balance or comparison between foreign capital and own capital. Foreign capital in this case is long-term and short-term debt. While the own capital is divided into retained earnings and the company's ownership participation in which the aim is to increase the value of the company in the market (Brigham and Eharhrdt, 2011). Banking sector acts as the life blood of modern trade and commerce to provide them with a major source of finance. This increasing phenomenon of globalization has made the concept of efficiency more important both for the non-financial and financial institutions and banks are the part of them. The modalities of the banking business have changed a lot in the new millennium compared to the way they used to be in the years bygone (Hussain and Bhatti, 2010). Factors that affect firms' performance are either macro or micro factors and they have an important impact on firms' performance. Macro factors are those factors that are out the control of the company, whereas micro factors include the factors that are under the control of the company. The changes that might happened for macro-economic factors will positively or negatively affect the financial performance of a company. Similarly, if any changes occur for the micro factors, will have the same effect either positively or negatively on the firms that belongs to the same industry. There could

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be number of reasons for this difference in response of the firms to the same macro changes but all of these reasons are related to the micro factors of the firm (Demirhan and Anwar, 2014). Liquidity is an ability of a bank to fund increase in assets and meet its obligations as they come due without incurring unacceptable losses. Hence, liquidity risk arises from the fundamental role of banks in the maturity transformation of short-term deposits into long-term loans. Liquidity signifies the aptitude of a financial firm to keep up all the time a balance between the financial inflow and overflow over time (Vento and La Ganga, 2009). The concept of liquidity has been a source of worry to the management of firms of the uncertainty of the future. Liquidity is a financial term that means the amount of capital that is available for investment. Each bank attempts to attract more customers in order to obtain more profit and be more profitable bank. The firm's liquidity position would be stronger when they keep a large proportion of current assets but also the over all of profitability will be reduced (Shafana, 2015).

Liquidity crises are not new phenomena and banks have endured them throughout history. There are multiple types of liquidity but, when discussed in the banking sector, liquidity is commonly described as the possibility that a bank may become unable to settle its obligations (Drehmann and Nikolaou, 2013). In case of commercial banks, first type of liquidity risk arises when depositors of commercial banks seek to withdraw their money. Liyana and Indrayani (2020) investigated the effect of non-performing loan, loan-to-deposit ratio, and net interest margin on financial performance (return on assets). The study showed that loan-to-deposit ratio has a positive relationship with return on assets. Similarly, Ogunbiyi (2014) found no relationship between credit to deposit ratio and profitability measured by return on assets and return on equity. However, Sunaryo (2020) showed a negative relationship between loan-to-deposit ratio and return on assets of general banks in Southeast Asia. Likewise, Amenawo et al. (2016) examined the effect of currency fluctuation on commercial banks profitability. The study revealed that capital adequacy ratio has a positive relationship with return on assets. However, Dodi et al. (2018) concluded that capital adequacy ratio has a negative relationship with return on assets and return on equity.

Hasmiana and Pintor (2022) investigated to the effect of financial risk, capital structure, and liquidity on profitability through operational efficiency at State-Owned Banks and Private Commercial Banks. The results showed financial risk, capital structure, and liquidity partially had a significant effect on operational efficiency financial risk, capital structure, liquidity, and operational efficiency partially had a significant effect on profitability. Financial risk, capital structure and liquidity partially have no significant effect on profitability through operational efficiency. Similarly, Sumantri et al. (2021) examined the effect of bank capital, liquidity and asset quality on banking profitability in Indonesia. The study indicated that capital adequacy ratio has no significant effect on profitability (ROA), while NPL and LDR had a significant negative effect on profitability (ROA). Likewise, Imani and Pracoyo (2018) analyzed the influence of bank-specific component to profitability of banking industry. The study showed that capital and liquidity risk have an insignificance impact on profitability. Meanwhile, credit risk has a significant impact on profitability. Further, Buchory (2015) analyzed the factors that affect the banking profitability, including banking intermediation, operational efficiency and credit risk. The results concluded that loan to deposit ratio has a negative impact but no significant impact on return on assets. In addition, Abbas et al. (2019) investigated the influence of bank capital, bank liquidity level and credit risk on the profitability of commercial banks. The findings showed that liquidity influences profitability more intensively than capital, whereas the sign of coefficients were similar for large, small and medium-size banks. The results of the study also indicated that liquidity and bank capital have positive impact on profitability, while credit risk has a negative influence on profitability of banks. Moreover, Permana and Rahyuda (2025) examined the influence of liquidity, bank capital, profitability and operational efficiency on credit risk. The results of the study indicated that credit risk has a significant but negative impact on profitability while operational efficiency has a significant and positive impact on profitability.

Yastika *et al.* (2020) examined the effect of liquidity on profitability with capital adequacy as a moderating variable in Islamic commercial banks in Indonesia. The results indicated that the efficiency factor and non-performing financing are the major factors in influencing banks' profitability. Further, Lestari (2021) assessed the impact of liquidity, leverage and bank size on profitability in Indonesian conventional banking sector. The result showed that liquidity has an insignificant and negative impact on return on assets and return on equity. While leverage has a negative and insignificant impact on return on assets and net interest margin. In addition, Mudanya *et al.* (2018) investigated the effects of financial risk on profitability of commercial banks listed in the Nairobi Securities Exchange. The study found a strong correlations between profitability and both credit and market risks. In addition, Paul *et al.* (2020) investigated the effect of banks' liquidity on its profitability. The study revealed that liquidity has a significant impact on the profitability of commercial banks of Bangladesh.

Khan and Ali (2016) analyzed the relationship between liquidity and profitability of commercial banks in Pakistan. The results showed that there is a significant and positive relationship between liquidity and profitability of the banks. Similarly, Adebayo *et al.* (2011) examined the liquidity management and commercial banks' profitability in Nigeria. The study revealed a significant relationship between liquidity and profitability of commercial banks. Likewise, Lukorito *et al.* (2014) assessed the effect of liquidity on profitability of commercial banks in Kenya. The study showed a statistically significant positive relationship between liquidity and banks' profitability. Further, Olweny and Shipho (2011) examined the effects of bank-specific factors on the profitability of commercial banks in Kenya. The study indicated that bank specific factors have significant impact on profitability. In addition, Kunt and Huizinga (2000) investigated the impact of financial development and structure on bank performance. The study stated that in countries with underdeveloped financial systems, transitioning to a more developed system reduces bank profitability and margins. Moreover, Birru (2016) analyzed the impact of capital structure on financial performance of commercial banks. The study indicated that return on assets is significantly but negatively associated with capital structure.

Musah (2017) examined the impact of capital structure on profitability of commercial banks in Ghana. The results indicated that short-term and long-term debt ratios negatively affect profitability. Similarly, Fu *et al.* (2012) investigated the financial risk factors: Capital structure, operation ability, profitability, and solvency on the listed companies in China. The results indicated that financial risk has a significant but negative correlation with current ratio, net profit margin, net asset ratio and fixed assets ratio. Likewise, Olalekan *et al.* (2018) examined the effect of financial risk management on profitability of commercial banks in Nigeria. The study showed that liquidity risk positively affected profitability. Similarly, credit risk has a significant but negative impact on banks' profitability while capital adequacy ratio is positively and significantly affect the profitability of commercial banks in Nigeria. Further, Shetty and Yadav (2019) investigated the relationship between profitability and financial risks of commercial banks in India. The results indicated that there is a negative relationship between financial risk and profitability.

In the context of Nepal, Pradhan and Khadka (2017) investigated the impact of capital regulation on the profitability of Nepalese commercial banks. The study showed that an improved asset quality positively impacted profitability suggesting that better asset quality enhanced the profitability of Nepalese commercial banks. Similarly, Shrestha *et al.* (2018) analyzed the effect of bank capital on profitability and credit risk of Nepalese commercial banks. The study showed a positive effects from economic growth, inflation, and prior net interest margin while bank capital, loan rates and loan-to-deposit ratios negatively affected net interest margin. Likewise, Nath and Pradhan (2023) examined the effect of risk on the financial performance of Nepalese insurance companies. The results revealed that reinsurance, solvency, technical provision and underwriting risks negatively impacted the price-earnings ratio while liquidity risk reduced return on assets. Further, Pradhan and Shrestha (2016) assessed the impact of capital adequacy and bank operating efficiency on financial performance of Nepalese commercial banks. The results showed that total deposits to total assets and bank operating efficiency significantly influenced the financial performance of commercial banks in Nepal. In addition, Alali (2019) examined the effect of banking liquidity on the profitability of commercial banks in Jordan.

The study indicated that liquidity ratio and employment rates have no impact on both return on assets and return on equity. Moreover, Bhatt and Jain (2020) inquired the relationship between the capital structure and the profitability of commercial banks in Nepal. The study revealed that over 40% of bank profitability measured by return on equity is influenced by capital structure.

The above discussion shows that empirical evidences vary greatly across the studies on the effect of financial risk, capital structure, banking liquidity on profitability of 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 major objective of the study is to examine the effect of financial risk, capital structure, banking liquidity on profitability of Nepalese commercial banks. Specifically, it examines the relationship of non-performing loans, loan loss provision, capital adequacy ratio, debt-to-equity ratio, loan-to-deposit ratio and liquidity ratio with profitability 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 section draws the conclusion.

2. Methodological aspects

The study is based on the secondary data which were collected from 10 Nepalese commercial banks from 2014/15 to 2023/24, leading to a total of 100 observations. The study employed convenience sampling method. The main sources of data collected from the Bank Supervision Report published by Nepal Rastra Bank (NRB) and annual reports of the selected commercial 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 the Banks	Study period	Observations
1	Global IME Bank Limited	2014/15-2023/24	10
2	NIC Asia Bank Limited	2014/15-2023/24	10
3	Kumari Bank Limited	2014/15-2023/24	10
4	Prabhu Bank Limited	2014/15-2023/24	10
5	Himalayan Bank Limited	2014/15-2023/24	10
6	Nepal Bank Limited	2014/15-2023/24	10
7	Agricultural Development Bank Limited	2014/15-2023/24	10
8	Siddhartha Bank Limited	2014/15-2023/24	10
9	Everest Bank Limited	2014/15-2023/24	10
10	NMB Bank Limited	2014/15-2023/24	10
Total number of observations			**100**

Thus, the study is based on the 100 observations.

The model

The model used in this study assumes that profitability depends upon financial risk, capital structure and banking liquidity. The dependent variables selected for the study are return on assets and return on equity. Similarly, the selected independent variables are non-performing loans, loan loss provision, capital adequacy ratio, debt-to-equity ratio, loan-to-deposit ratio and Liquidity ratio. Therefore, the models take the following forms:

$$ROA = \beta_0 + \beta_1 NPL + \beta_2 LLP + \beta_3 CAR + \beta_4 DER + \beta_5 LDR + \beta_6 LR + e_{it}$$
$$ROE = \beta_0 + \beta_1 NPL + \beta_2 LLP + \beta_3 CAR + \beta_4 DER + \beta_5 LDR + \beta_6 LR + e_{it}$$

Where,

ROA = Return on assets as measured by the ratio of net income to total assets, in percentage.

ROE = Return on equity as measured by the ratio of net income to total equity, in percentage.

NPL = Non-performing loan as measured by the ratio of non-performing loans to total loans, in percentage.

LLP = Loan loss provision as measured by the ratio of loan loss provision to total loans, in percentage.

CAR = Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage.

DER = Debt to equity ratio as measured by the ratio of total debt to total equity, in percentage.

LDR = Loan- to-deposit ratio as measured by the ratio of total loans to total deposits, in percentage.

LR = Liquidity ratio as measured by liquid assets divided by current liabilities, in percentage.

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

Non-performing loan

Sumantri *et al.* (2021) examined that effect of bank capital, liquidity and asset quality on banking profitability in Indonesia. The study indicated that non-performing loan has a significant but negative impact on profitability measured by return on assets. Similarly, Buchory (2015) analyzed the factors that affect the banking profitability, including banking intermediation, operational efficiency and credit risk. The study concluded that non-performing loan has a positive but no significant impact on return on assets. Likewise, Trujillo-Ponce (2013) found that non-performing loans has negative impact on return on assets and return on equity. Based on it, this study develops the following hypothesis:

H$_1$: There is a negative relationship between non-performing loan and profitability of banks.

Loan loss provision

Sultana and Jalloh (2025) examined the effect of loan loss provisioning on the profitability of 20 private commercial banks in Bangladesh. The study revealed that loan loss provisions significantly influence bank profitability. Similarly, Alhadab and Alsahawneh (2016) explored the impact of loan loss provisions on the profitability of 13 Jordanian commercial banks over a decade. The study indicated a negative relationship between loan loss provisions and both return on assets and return on equity, suggesting that higher provisions can diminish profitability. Based on it, this study develops the following hypothesis:

H_2: There is a negative relationship between loan loss provision and profitability of banks

Capital adequacy ratio

Swandewi and Purnawati (2021) found that capital adequacy ratio has a positive and significant relationship with return on assets. Likewise, Goet (2022) analyzed the several bank-specific variables, including capital adequacy, to determine their effect on the profitability of listed commercial banks in Nepal. The study found that while certain components like Tier 1 capital and total capital showed a significant correlation with net profit, the overall capital adequacy ratio did not have a significant impact on profitability. Based on it, this study develops the following hypothesis:

H_3: There is a positive relationship between capital adequacy ratio and profitability of banks.

Debt to equity ratio

Susilawati *et al.* (2022) examined the effect of debt to equity ratio and current ratio on return on assets. The study found that debt to equity ratio has a significant but negative impact on return on assets. Similarly, Lestari (2021) explored the relationship between debt to equity ratio, firm size and firm value. The study concluded that debt to equity ratio directly affects firm value, and return on assets mediates the relationship between firm size and firm value, highlighting the complex interplay between financial structure and profitability. Based on it, this study develops the following hypothesis:

H_4: There is a negative relationship between debt to equity ratio and profitability of banks.

Loan-to-deposit ratio

Sumantri *et al.* (2021) examined the effect of bank capital, liquidity and asset quality on banking profitability in Indonesia. The study indicated that loan to deposit ratio has a significant negative impact on profitability measured by return on assets. Similarly, Setiawan *et al.* (2021) found that loan to deposit ratio has a positive and significant impact on profitability. Likewise, Limajatini *et al.* (2019) showed that loan to deposit ratio has a significant impact on profitability. Susantih and Ompusunggu (2022) indicated that loan to deposit ratio has a significant positive impact on banks' profitability. In addition, Anggari and Dana (2020) analyzed the banks of Indonesia for the period of 2016 to 2018 to find the effect of capital adequacy ratio, third party fund, bank size and loan to deposit ratio on profitability of banks. The study stated that capital adequacy ratio, loan to deposit ratio, third party fund and bank size have positive and significant impact on profitability. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between loan-to-deposit ratio and profitability of banks.

Liquidity ratio

Abbas *et al.* (2019) investigated the influence of bank capital, bank liquidity level and credit risk on the profitability of commercial banks. The findings showed that liquidity influences profitability more intensively than capital, whereas the sign of coefficients were similar for large, small and medium-size banks. Similarly, Yastika *et al.* (2020) assessed the effect of liquidity on profitability with capital adequacy as a moderating variable in Islamic commercial banks in Indonesia. The results showed that bank liquidity has a negative impact on banks' profitability. Based on it, this study develops the following hypothesis:

H_6: There is a negative relationship between liquidity ratio and profitability of banks.

3. Results and discussion

Descriptive statistics

Table 2 presents the descriptive statistics of selected dependent and independent variables during the period 2014/15 to 2023/24.

Table 2

Descriptive statistics

This table shows the descriptive statistics of dependent and independent variables of 10 Nepalese commercial banks for the study period from 2014/15 to 2023/24. The dependent variables are ROA (Return on assets as measured by the ratio of net profit to total asset, in percentage) and ROE (Return on equity as measured by the ratio of net profit to total equity, in percentage). The independent variables are NPL (Non-performing loans as measured by the ratio of non-performing loans to total loans, in percentage), LLP (Loan loss provision as measured by the ratio of loan loss provision to total loans, in percentage), CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), DER (Debt to equity ratio as measured by the ratio of total debt to total equity, in percentage), LDR (Loan-to-deposit ratio as measured by the ratio of total loans to total deposits, in percentage) and LR (Liquidity ratio as measured by liquid assets divided by current liabilities, in percentage).

Variables	Minimum	Maximum	Mean	Std. Deviation
ROA	0.00	3.12	1.39	0.63
ROE	0.01	27.57	12.61	5.78
NPL	0.01	8.83	2.36	1.66
LLP	0.81	7.96	2.86	1.49
CAR	0.08	20.41	10.40	5.91
DER	0.61	62.12	8.54	6.67
LDR	0.68	107.01	74.81	28.64
SLR	0.23	37.11	23.27	10.51

Source: SPSS output

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 10 Nepalese commercial banks for the study period from 2014/15 to 2023/24. The dependent variables are ROA (Return on assets as measured by the ratio of net profit to total asset, in percentage) and ROE (Return on equity as measured by the ratio of net profit to total equity, in percentage). The independent variables are NPL (Non-performing loans as measured by the ratio of non-performing loans to total loans, in percentage), LLP (Loan loss provision as measured by the ratio of loan loss provision to total loans, in percentage), CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), DER (Debt to equity ratio as measured by the ratio of total debt to total equity, in percentage), LDR (Loan-to-deposit ratio as measured by the ratio of total loans to total deposits, in percentage) and LR (Liquidity ratio as measured by liquid assets divided by current liabilities, in percentage).

Variables	ROA	ROE	NPL	LLP	CAR	DER	LDR	LR
ROA	1							
ROE	0.517**	1						
NPL	-0.116	-0.430**	1					
LLP	-0.237*	-0.343**	0.737**	1				
CAR	0.053	0.026	0.053	0.089	1			
DER	0.143	0.061	0.131	0.064	-0.002	1		
LDR	0.070	0.188	0.089	0.038	0.744**	-0.104	1	
LR	-0.036	-0.156	0.349**	0.254*	0.548**	-0.065	0.703**	1

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

Table 3 shows that non-performing loan has a negative relationship with return on assets. It indicates that increase in non-performing loan leads to decrease in return on assets. Similarly, loan loss provision has a negative relationship with return on assets. It indicates that increase in loan loss provision leads to decrease in return on assets. However, capital adequacy ratio has a positive relationship with return on assets. It indicates that increase in capital adequacy ratio leads to increase in return on assets. In contrast, debt-to-equity ratio has a positive relationship with return on assets. It indicates that increase in debt-to-equity ratio leads to increase in return on assets. Likewise, loan-to-deposit ratio has a positive relationship with return on assets. It indicates that higher the loan-to-deposit ratio, higher would be the return on assets. However, liquidity ratio has a negative relationship with return on assets. It indicates that increase in liquidity ratio leads to decrease in return on assets.

Similarly, the result also shows that non-performing loan has a negative relationship with return on equity. It indicates that increase in non-performing loan leads to decrease in return on equity. Similarly, loan loss provision has a negative relationship with return on equity. It indicates that increase in loan loss provision leads to decrease in return on equity. However, capital adequacy ratio has a positive relationship with return on equity. It indicates that increase in capital adequacy ratio leads to increase in return on equity. In contrast, debt-to-equity ratio has a positive relationship with return on equity. It indicates that increase in debt-to-equity ratio leads to increase in return on equity. Likewise, loan-to-deposit ratio has a positive relationship with return on equity. It indicates that higher the loan-to-deposit ratio, higher would be the return on equity. However, liquidity ratio has a negative relationship with return on equity. It indicates that increase in liquidity ratio leads to decrease in return on equity.

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 non-performing loans, loan loss provision, capital adequacy ratio, debt-to-equity ratio, loan-to-deposit ratio and liquidity ratio with return on assets of Nepalese commercial banks.

Table 4

Estimated regression results of non-performing loans, loan loss provision, capital adequacy ratio, debt-to-equity ratio, loan-to-deposit ratio and liquidity ratio with return on assets

The results are based on panel data of 10 Nepalese commercial banks with 100 observations for the period of

2014/15-2023/24 by using the linear regression model and the model is ROA = β_0 + β_1NPL + β_2LLP + β_3CAR + β_4DER + β_5LDR + β_6LR + e_{it} where, the dependent variable is ROA (Return on assets as measured by the ratio of net profit to total asset, in percentage). The independent variables are NPL (Non-performing loans as measured by the ratio of non-performing loans to total loans, in percentage), LLP (Loan loss provision as measured by the ratio of loan loss provision to total loans, in percentage), CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), DER (Debt to equity ratio as measured by the ratio of total debt to total equity, in percentage), LDR (Loan-to-deposit ratio as measured by the ratio of total loans to total deposits, in percentage) and LR (Liquidity ratio as measured by liquid assets divided by current liabilities, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar2	SEE	F-value
		NPL	LLP	CAR	DER	LDR	LR			
1	1.476 (15.315)**	-0.041 (1.138)						0.003	0.596	1.296
2	1.592 (14.470)**		-0.041 (1.138)					0.036	0.586	4.709
3	1.592 (14.470)**			0.101 (3.886)**				0.125	0.558	15.1
4	1.301 (12.579)**				0.021 (1.061)			0.001	0.5968	1.126
5	1.301 (12.579)**					0.002 (0.177)		-0.01	0.6	0.031
6	1.552 (4.179)**						-0.006 (0.442)	-0.008	0.69	0.196
7	1.589 (14.412)**	-0.045 (0.873)	-0.115 (2.012)*					0.033	0.587	2.692
8	0.251 (0.714)	-0.045 (0.873)	-0.115 (2.156)*	0.101 (3.974)**				0.161	0.547	7.334
9	0.101 (0.302)	-0.035 (0.681)	-0.109 (2.047)*	0.104 (4.09)**	0.021 (1.061)			0.17	0.544	6.076
10	1.315 (1.085)	1.315 (1.085)	-0.109 (2.047)*	0.128 (4.591)**	0.015 (1.671)	0.018 (1.964)		0.194	0.536	5.778
11	1.315 (1.085)	1.315 (1.085)	-0.106 (2.026)*	-0.106 (2.026)*	0.015 (1.671)	0.015 (1.671)	-0.026 (1.982)*	0.219	0.528	5.62

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. Return on assets is the dependent variable.

Table 4 shows that the beta coefficients for non-performing loan are negative with return on assets. It indicates that non-performing loan has a negative impact on return on assets. This finding is similar to the findings of Sumantri *et al.* (2021). Similarly, the beta coefficients for loan loss provision are negative with return on assets. It indicates that loan loss provision has a negative impact on return on assets. This finding is similar to the findings of Sultana and Jalloh (2025). However, the beta coefficients for capital adequacy ratio are positive with return on assets. It indicates that capital adequacy ratio has a positive impact on return on assets. This finding is consistent with the findings of Swandewi and Purnawati (2021). Likewise, the beta coefficients for debt-to-equity ratio are positive with return on assets. It indicates that debt-to-equity ratio has a positive impact on return on assets. This finding is not consistent with the findings of Susilawati *et al.* (2022). Further, the beta coefficients for loan-to-deposit ratio are positive with return on assets. It indicates that loan-to-deposit ratio has a positive impact on return on assets. This finding is similar to the findings of Sumantri *et al.* (2021). In contrast, the beta coefficients for liquidity ratio are negative with return on assets. It indicates that liquidity ratio has a negative impact on return on assets. This finding is similar to the findings of Abbas *et al.* (2019).

Table 5 shows the regression results of non-performing loans, loan loss provision, capital adequacy ratio, debt-to-equity ratio, loan-to-deposit ratio and liquidity ratio with return on equity of Nepalese commercial banks

Table 5

Estimated regression results of non-performing loans, loan loss provision, capital adequacy ratio, debt-to-equity ratio, loan-to-deposit ratio and liquidity ratio with return on equity

The results are based on panel data of 10 Nepalese commercial banks with 100 observations for the period of 2014/15-2023/24 by using the linear regression model and the model is $ROE = \beta_0 + \beta_1 NPL + \beta_2 LLP + \beta_3 CAR + \beta_4 DER + \beta_5 LDR + \beta_6 LR + e_{it}$ where, the dependent variable is ROE (Return on equity as measured by the ratio of net profit to total equity, in percentage). The independent variables are NPL (Non-performing loans as measured by the ratio of non-performing loans to total loans, in percentage), LLP (Loan loss provision as measured by the ratio of loan loss provision to total loans, in percentage), CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), DER (Debt to equity ratio as measured by the ratio of total debt to total equity, in percentage), LDR (Loan-to-deposit ratio as measured by the ratio of total loans to total deposits, in percentage) and LR (Liquidity ratio as measured by liquid assets divided by current liabilities, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar2	SEE	F-value
		NPL	LLP	CAR	DER	LDR	LR			
1	15.950 (19.628)**	-1.393 (4.662)**						0.173	5.028	21.739
2	15.938 (16.248)**		-1.151 (3.572)**					0.106	5.228	12.759
3	15.938 (16.248)**			0.488 (2.114)*				0.028	5.45	3.804
4	13.448 (13.997)**				0.054 (0.605)			-0.006	5.547	0.366
5	25.526 (3.736)**					0.148 (1.843)		0.024	5.4644	3.398
6	14.772 (4.298)**						-0.064 (0.503)	-0.007	5.55	0.281
7	14.772 (4.298)**	-1.312 (2.769)**	-0.076 (0.154)					0.165	5.053	10.77
8	14.772 (4.298)**	-1.312 (2.769)**	-0.077 (0.159)	0.488 (2.114)*				0.194	4.966	8.928
9	14.772 (4.298)**	-1.312 (2.769)**	-0.089 (0.183)	0.493 (2.121)*	0.026 (0.317)			0.186	4.989	6.659
10	37.227 (5.799)**	-1.656 (3.461)**	-0.089 (0.183)	0.142 (0.545)	0.002 (0.026)	0.215 (2.608)*		0.233	4.84	7.012
11	42.519 (4.851)**	-1.604 (3.322)**	-0.035 (0.072)	0.142 (0.545)	0.003 (0.014	0.251 (2.727)**		0.231	4.848	5.962

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. Return on equity is the dependent variable.

Table 5 shows that the beta coefficients for non-performing loan are negative with return on equity. It indicates that non-performing loan has a negative impact on return on equity. This finding is similar to the findings of Buchory (2015). Similarly, the beta coefficients for loan loss provision are negative with return on equity. It indicates that loan loss provision has a negative impact on return on equity. This finding is similar to the findings of Alhadab and Alsahawneh (2016). However, the beta coefficients for capital adequacy ratio are positive with return on equity. It indicates that capital adequacy ratio has a positive impact on return on equity. This finding is consistent with the findings of Goet (2022). Likewise, the beta coefficients for debt-to-equity ratio are positive with return on equity. It indicates that

debt-to-equity ratio has a positive impact on return on equity. This finding is not consistent with the findings of Lestari (2021). Further, the beta coefficients for loan-to-deposit ratio are positive with return on equity. It indicates that loan-to-deposit ratio has a positive impact on return on equity. This finding is similar to the findings of Limajatini *et al.* (2019). In contrast, the beta coefficients for liquidity ratio are negative with return on equity. It indicates that liquidity ratio has a negative impact on return on equity. This finding is similar to the findings of Yastika *et al.* (2020).

4. Summary and conclusion

Capital structure is a balance or comparison between foreign capital and own capital. Foreign capital in this case is long-term and short-term debt. While the own capital is divided into retained earnings and the company's ownership participation in which the aim is to increase the value of the company in the market. Banking sector acts as the life blood of modern trade and commerce to provide them with a major source of finance. This increasing phenomenon of globalization has made the concept of efficiency more important both for the non-financial and financial institutions and banks are the part of them. The modalities of the banking business have changed a lot in the new millennium compared to the way they used to be in the years bygone. Factors that affect firms' performance are either macro or micro factors and they have an important impact on firms' performance. Macro factors are those factors that are out the control of the company, whereas micro factors include the factors that are under the control of the company. The changes that might happened for macro-economic factors will positively or negatively affect the financial performance of a company.

This study attempts to analyze the effect of financial risk, capital structure, banking liquidity on profitability of Nepalese commercial banks. The study is based on secondary data of 10 Nepalese commercial banks with 100 observations for the period from 2014/15 to 2023/24.

The major conclusion of this study is that non-performing loans, loan loss provision and liquidity ratio have negative impact on return on assets and return on equity. It indicates that increase in non-performing loans, loan loss provision and liquidity ratio leads to decrease in return on assets and return on equity. However, capital adequacy ratio, debt-to-equity ratio and loan-to-deposit ratio have positive impact on return on assets and return on equity. It indicates that increase in capital adequacy ratio, debt-to-equity ratio and loan-to-deposit ratio leads to increase in return on assets and return on equity. Likewise, the study also concluded that capital adequacy ratio followed by loan loss provision is the most influencing factor that explains the changes in the return on asset of Nepalese commercial banks. Similarly, the study also concluded that non-performing loan followed by loan loss provision is the most influencing factor that explains the changes in return on equity in context of Nepalese commercial banks.

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