Impact of Risk, Corporate Strategy and Capital Structure on Profitability of Nepalese Commercial Banks

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Abstract

This study examines the impact of risk, corporate strategy and capital structure on the profitability of Nepalese commercial banks. Return on assets and return on equity are selected as the dependent variables. The selected independent variables are credit risk, liquidity risk, annual growth rate of total assets, branch expansion rate, leverage, capital adequacy ratio. The study is based on secondary data of 10 commercial banks with 100 observations for the study period from 2013/14 to 2022/23. The data were collected from Banking and Financial Statistics published by Nepal Rastra Bank and annual reports of the selected commercial banks. The correlation coefficients and regression models are estimated to test the significance and importance of risk, corporate strategy and capital structure on the profitability of Nepalese commercial banks.

The study showed that credit risk has a negative impact on return on equity and return on assets. It indicates that increase in credit risk leads to decrease in return on equity and return on assets. Similarly, liquidity risk has a negative impact on return on equity and return on assets and return on assets, indicating that increase in liquidity risk leads to decrease in return on equity and return on assets. Likewise, annual growth rate of total assets has a positive impact on return on equity and return on assets. It indicates that increase in annual growth rate of assets leads to increase in return on equity and return on assets. Similarly, branch expansion rate has a negative impact on return on equity and return on assets. It indicates that increase in branch expansion rate leads to decrease in return on equity and return on assets. Likewise, leverage has a negative impact on return on equity and return on assets. It implies that increase in leverage leads to decrease in return on equity and return on assets. However, capital adequacy ratio has a positive impact on return on equity and return on assets. It indicates that increase in capital adequacy ratio leads to increase in return on equity and return on assets.

Keywords: credit risk, liquidity risk, annual growth rate of total assets, branch expansion rate, leverage, capital adequacy ratio, return on assets, return on equity

1. Introduction

Risk management has always been a focal point for finance enthusiasts since the beginning of the industrial revolution (Dima and Orzea, 2014). Risk management is an issue that needs to be stressed and investigated, especially in the banking industry, where the need for a good risk management structure is extremely important. One of essential requirements for banks and financial institutions is adequate and sufficient capital and every bank and financial organizations must keep balance between capital and available risk in its assets in order to guarantee its stability. Thus, it has become one of the most important criteria for depository institutions (Bateni *et al.,* 2024). Chandler (2019) defined corporate strategy as the determination of long-term goals and assigning of resources to facilitate appropriate actions. Expansion strategies would then be strategies that the organization employs in realizing its long-term expansion goals. Profitability is an indicator of the bank's competitive position in banking industry and of the quality of its management, ensuring the health of the

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banking system. Banks that are consistently profitable tend to be better positioned to weather economic fluctuations, invest in growth opportunities, and offer competitive products and services. Moreover, profitability is often associated with sound risk management and operational efficiency, which are essential for maintaining the overall health of the banking system.

Pham *et al*. (2022) examined the effect of capital structure on the profitability of Vietnamese commercial banks. The study showed that customer deposits have a negative effect on bank profitability, whereas non-deposit liabilities have a positive effect on bank profitability. Rdaydeh *et al.* (2022) analyzed the impact of corporate strategy and capital structure on profitability. The study showed credit risk has a negative impact on return on equity and return on assets. High leverage increases the risk of financial distress because debt obligations must be met regardless of the company's performance. If returns on investments are lower than the cost of debt, this can lead to reduced profitability and lower ROE. High leverage can increase the volatility of ROE. While it can amplify gains, it can also magnify losses, especially if the investments do not perform as expected. Similarly, Otekunrin *et al.* (2020) examined the extent to which capital structure impacts the profitability. The study showed that leverage has negative impact on return on equity. Managing liquidity risk often involves maintaining higher levels of liquid assets, which generally yield lower returns compared to other investments. This can reduce the bank's overall profitability and, consequently, its ROE. Banks facing liquidity risk might need to borrow funds at higher interest rates to meet short-term obligations, which can erode profitability and negatively affect ROE. while effective liquidity management is crucial for financial stability, high liquidity risk typically leads to higher costs and reduced profitability, which negatively impacts ROE. In contrast, Mukhiya (2024) concluded that liquidity risk has a positive impact on return on equity. Successful branch expansion can lead to increased market share, greater customer acquisition, and enhanced profitability, potentially improving ROE in the long run. The key is managing the expansion process effectively and ensuring that new branches contribute positively to the bank's overall financial performance. However, Further, Wu (2020) concluded that branch expansion rate has negative impact on return on equity.

Mujahid *et. al.* (2022) revieled that capital structure has positive impact on bank performance. In other word, the debt to equity has positive impact on bank performance measured by ROE, EOA and EPS. Similarly, Rajbahak *et al.* (2019) found that foreign ownership, debt to equity and firm growth have insignificant impact on return on equity and return on assets. Likewise, King'ori *et al*. (2017) found a positive and statistically significant relationship between operational efficiency, capital adequacy, firm size and profitability of microfinance banks in Kenya. Additionally, Ayalew (2021) found that annual growth rate of total assets has a negative impact on return on equity. Khaddafi (2023) concluded that annual growth rate of total assets has a negative impact on return on assets. Rapid asset growth can dilute the efficiency of existing assets. If new assets are not as productive or profitable as the existing ones, it can lower the overall return generated by the total asset base. Expanding total assets quickly often involves significant costs, such as acquisition costs, integration expenses, and increased operational costs. These additional costs can reduce net income, which in turn lowers ROA. However, growing total assets can be a sign of expansion and business development, if the growth is not well-managed or if the new assets do not generate proportional returns, it can negatively impact ROA.

Dinh and Huyen (2024) analyzed the structure and pattern of key financial indicators such as capital adequacy ratio, credit to deposit ratio, bank size, leverage ratio, loan loss provision, and non-performing loans for determining the relationships within domestic and joint venture commercial banks. The study found that leverage has negative impact on return on assets. Similarly, Imran and Hour (2021) examined the impact of corporate strategies on financial leverage. The study found that liquidity has positive impact on return of assets. Likewise, Vina *et al.* (2024) investigated how the influence of asset growth, asset structure, company size, business risk, non-debt tax shield on capital structure and profitability. The study found that asset growth has no effect on profitability, asset structure has a positive effect on profitability, firm size has a positive effect on profitability, business risk has no effect on profitability, asset growth has a negative effect on capital structure, asset structure has a positive effect on capital structure, size the company has no effect on capital structure, business risk has a positive effect on capital structure, non-debt tax shield has a negative effect on capital structure, profitability has a negative effect on capital structure. Musah (2020) examined the effect of capital structure (measures as short-term debt ratio, long term debt ratio, and total debt ratio) on profitability (measured as return on assets and return on equity) of commercial banks in Ghana. The study concluded that leverage has a significant positive impact on return on equity. Similarly, Isanzu (2017) showed that capital adequacy has a positive and significant effect on ROA. Adequate capital provides a buffer against financial shocks and losses, enhancing the bank's stability and reducing the likelihood of insolvency. This stability allows the bank to operate more efficiently and focus on generating returns, positively impacting ROA. Meeting capital adequacy requirements helps ensure regulatory compliance, avoiding penalties and operational disruptions. This compliance can lead to smoother operations and better financial performance, positively affecting ROA.

In the context of Nepal, Kafle (2023) analyzed the impact of credit risk management on profitability of Nepalese commercial banks. The study concluded that credit risk has a negative impact on return on assets. High credit risk can lead to higher default rates on loans and other credit facilities. As defaults increase, the bank may experience losses from non-performing assets, which negatively affects profitability and ROA. Credit risk can adversely impact ROA by increasing expenses and reducing income from credit operations, thereby affecting overall profitability. Similarly, Gurung and Gurung (2022) found that liquidity risk has a positive impact on return on assets. Likewise, Bist (2024) found that annual growth rate of total assets has a negative impact on return on assets. A high annual growth rate of total assets can negatively impact Return on Assets (ROA) because it often leads to inefficiencies and increased costs that dilute overall asset productivity. Rapid asset expansion may involve significant investment in new assets that might not immediately generate proportional returns, leading to lower overall profitability. Additionally, the associated costs of acquiring and integrating these new assets, combined with potential operational challenges, can reduce net income. This reduction in income relative to the growing asset base ultimately lowers ROA, as the efficiency and profitability of the total asset base are compromised by the accelerated growth. Neupane (2020) examined the key determinants of profitability of Nepalese commercial bank. The study concluded that capital adequacy ratio has a positive impact on return on assets.

The above discussion shows that empirical evidences vary greatly across the studies on the impact of risk, corporate strategy and capital structure 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 impact of risk, corporate strategy and capital structure on the profitability of Nepalese commercial banks. Specifically, it examines the relationship of credit risk, liquidity risk, annual growth rate of total assets, branch expansion rate, leverage, capital adequacy ratio with banks 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 2013/14 to 2022/23, 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 the study period and number of observations

S. N.	Name of commercial banks	Study period	Observations
1	Siddhartha Bank Limited	2013/14-2022/23	10
2	Standard Chartered Bank Nepal Limited	2013/14-2022/23	10
3	Himalayan Bank Limited	2013/14-2022/23	10
4	Nepal SBI Bank Limited	2013/14-2022/23	10
5	Everest Bank Limited	2013/14-2022/23	10
6	Prime Commercial Bank Limited	2013/14-2022/23	10
7	Sanima Bank Limited	2013/14-2022/23	10
8	Machhapuchchhre Bank Limited	2013/14-2022/23	10
9	Nepal Bank Limited	2013/14-2022/23	10
10	Citizens Bank International Limited	2013/14-2022/23	10
Total number of observations			**100**

Source: Annual Reports

Thus, the study is based on 100 observations.

The model

The model used in this study assumes that profitability of banks depends upon risk, corporate strategy and capital structure. The dependent variables selected for the study are return on assets and return on equity. Similarly, the selected independent variables are credit risk, liquidity risk, annual growth rate of total assets, bank expansion rate, leverage and capital

adequacy ratio. Therefore, the models take the following forms:

$$ROE_{it} = \alpha + \beta_1 CR_{it} + \beta_2 LR_{it} + \beta_3 AGR_{it} + \beta_4 BER_{it} + \beta_5 LEV_{it} + \beta_6 CAR_{it} + e_{it}$$

$$ROA_{i\,t=} \alpha + \beta_1 CR_{it} + \beta_2 LR_{it} + \beta_3 AGR_{it} + \beta_4 BER_{it} + \beta_5 LEV_{it} + \beta_6 CAR_{it} + e_{it}$$

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.

CR = Credit risk as measured by the non-performing loan, in percentage.

LR = Liquidity risk as measured by cash reserve ratio, in percentage.

AGR = Annual growth rate of total assets, in percentage.

LEV = Leverage as measured by the ratio of total debt to total equity, in ratio.

BER = Branch expansion rate, in percentage.

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

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

Capital adequacy ratio

Bateni *et al.* (2024) analyzed capital adequacy ratio has positive relationship between capital adequacy ratio on return on assets and return on equity. The study showed that capital adequacy ratio has positive relationship with return on assets and return on equity. Uddin (2022) analyzed the influence of leverage, non-performing loan, and capital adequacy ratio on the profitability of commercial banks in Bangladesh. The study found that the capital adequacy ratio (CAR) has a positive and significant effect on ROA. Farkasdi *et al.* (2021) investigated the factors influencing the profitability of commercial banks in Germany focusing on 7 banks listed in the DAX during 2017-2020. The results showed that asset size, capital adequacy, deposits, and non-interest income significantly positively impact profitability. Based on it, this study develops the following hypothesis:

H_1: There is a positive relationship of capital adequacy ratio with return on assets and return on equity.

Credit risk

Caruso *et al.* (2020) analyzed credit risk is one of the bank's most significant threat when providing financial services to customers. The banking sector's primary source of income is the interest on loans issued by banks (Ekinci and Poyraz, 2019). The study showed credit risk has a negative impact on return on equity and return on assets. The study found that bank risk and adjusts the risk rate of return by maintaining credit risk exposure to shield the bank from the adverse effects of credit risk. Bhattarai (2017) concluded that the credit risk has significant negative relationship on return on assets and return on equity. Based on it, this study develops the following hypothesis:

H_2: There is a negative relationship of credit risk with return on assets and return on equity.

Leverage

Leverage has been proven to have a negative and considerable impact on banks' profitability (Bunyaminu et al., 2021). Banks with high leverage might face stricter regulatory scrutiny and be required to hold more capital to cushion against potential losses. This can limit their ability to expand or invest in profitable opportunities. Furthermore, Mennawi (2020) found that the financial performance of Islamic banks in Sudan is significantly impacted negatively by credit risk and financial leverage. Moreover, Bintara (2020) stated that leverage hurts profitability. Higher leverage increases the risk of financial distress. During economic downturns, heavily leveraged banks may struggle to meet their debt obligations, leading to increased default risk, which can erode profitability. Furthermore, Yakubu et al. (2017) came to the conclusion that leverage and profitability have a negative relationship. Based on it, this study develops the following hypothesis:

H_3: There is a negative relationship of leverage with return on assets and return on equity.

Liquidity Risk

By restricting the amount of funds available for lending, higher CRR requirements can limit credit creation and economic activity. In turn, this can affect banks' earnings from interest income and loan-related fees, influencing their financial performance (Meshack and Nyamute, 2016). Similarly, Akinleye and Oluwadare (2022) examined the relationship between cash reserve requirement and banks' profitability from deposit money banks in Nigeria. The study showed that cash reserve ratio has a negative and significant effect on return on equity. Ghimire *et al.* (2024) revealed that the cash reserve ratio has been found to have a negative relationship with return on equity, indicating higher the cash reserve ratio, the lower the bank's profitability. Based on it, this study develops the following hypothesis:

$H_{4:}$ There is a negative relationship of liquidity risk with return on assets and return on equity.

Annual growth rate

According to Hirindu Kawshala (2017), a growing bank may diversify its products and services, reducing its reliance on any single income stream. This can stabilize earnings and improve overall profitability. Supriyono and Herdhayinta (2019) examined the determinants of bank profitability in the regional development bank (BPD Bank) in Indonesia. The study found a positive relationship between annual growth rate, net interest margin and return on assets. Larger and more established banks may have better risk management frameworks, which can lead to lower loan defaults and credit losses, contributing to higher profitability (Soumadi and Aldaibat, 2012). Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship of annual growth rate with return on assets and return on equity.

Branch expansion

Wu (2020) concluded that branch expansion rate has negative impact on return on equity. Sayani et al. (2020) examined the Internal determinants of return on equity: case of the UAE commercial banks. The study concluded that branch expansion rate has negative impact on return on assets. Liang *et al.* (2020) analyzed bank performance through branches

or representative offices in the context of European banks. The study showed that branch expansion rate has negative impact on return on assets. Based on it, this study develops the following hypothesis:

H_6: There is a negative relationship of branch expansion with return on assets and return on equity.

3. Results and discussions

Descriptive statistics

Table 2 represents the descriptive statistics of selected dependent and independent variables during the period 2013/14 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 of 2013/14 to 2023/24. The dependent variables are ROA (Return on assets as measured by the ratio of net income to total assets, in percentage) and ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), LR (Liquidity risk as measured by cash reserve ratio, in percentage), AGR (Annual growth rate of total assets, in percentage), LEV (Leverage as measured by the ratio of total debt to total equity, in ratio), BER (Branch expansion rate, in percentage), and CR (Credit risk as measured by the non-performing loan, in percentage).

Variables	Minimum	Maximum	Mean	Std. Deviation
ROE	3.79	27.54	15.46	4.46
ROA	0.48	2.75	1.63	0.46
CR	0.01	4.930	0.96	0.99
LR	0.01	37.520	13.55	10.05
AGR	0.92	228.94	33.92	44.66
BER	0.000	196	35.45	52.18
LEV	0.568	0.9306	0.88	0.03
CAR	10.98	22.99	13.65	2.02

Source: SPSS output

Correlation analysis

Having indicated the descriptive statistics, Pearson's correlation coefficients are computed and 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 bank for the study period 2013/14 to 2023/24. The dependent variables are ROA (Return on assets as measured by the ratio of net income to total assets, in percentage) and ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted

exposure, in percentage), LR (Liquidity risk as measured by cash reserve ratio, in percentage), AGR (Annual growth rate of total assets, in percentage), LEV (Leverage as measured by the ratio of total debt to total equity, in ratio), BER (Branch expansion rate, in percentage), and CR (Credit risk as measured by the non-performing loan, in percentage).

Variables	ROE	ROA	CR	LR	AGR	BER	LEV	CAR
ROE	1							
ROA	0.694**	1						
CR	-0.364**	-0.361**	1					
LR	-0.144	-0.030	-0.206*	1				
AGR	0.015	0.177	0.025	-0.317**	1			
BER	-0.265**	-0.233*	0.524**	-0.405**	0.553**	1		
LEV	-0.006	-0.261**	0.076	0.190	0.165	-0.013	1	
CAR	0.008	0.436**	-0.120	-0.006	-0.187	-0.143	-0.253*	1

Source: SPSS output

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

Table 3 shows that credit risk has a negative relationship with return on equity. It indicates that increase in credit risk leads to decrease in return on equity. Similarly, liquidity risk has a negative relationship with return on equity, indicating that increase in liquidity risk leads to decrease in return on equity. Likewise, annual growth rate of total assets has a positive relationship with return on equity. It indicates that increase in annual growth rate of assets leads to increase in return on equity. Similarly, branch expansion rate has a negative relationship with return on equity. It indicates that increase in branch expansion rate leads to decrease in return on equity. Likewise, leverage has a negative relationship with return on equity. It implies that increase in leverage 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.

Similarly, credit risk has a negative relationship with return on assets. It indicates that increase in credit risk leads to decrease in return on assets. Similarly, liquidity risk has a negative relationship with return on assets, indicating that increase in liquidity risk leads to decrease in return on assets. Likewise, annual growth rate of total assets has a positive relationship with return on assets. It indicates that increase in annual growth rate of assets leads to increase in return on assets. Similarly, branch expansion rate has a negative relationship with return on assets. It indicates that increase in branch expansion rate leads to decrease in return on assets. Likewise, leverage has a negative relationship with return on assets. It implies that increase in leverage 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.

Regression analysis

Having analyzed the Pearson's correlation coefficients, the regression analysis has been carried out and the results are presented in Table 4 and Table 5. More specifically, Table 4 shows the regression results of credit risk, liquidity risk, annual growth rate of total assets,

bank expansion rate, leverage and capital adequacy ratio on return on equity of Nepalese commercial banks.

Table 4

Estimated regression results of credit risk, liquidity risk, annual growth rate of total assets, branch expansion rate, leverage and capital adequacy ratio on return on equity

The results are based on panel data of 10 Nepalese commercial banks with 100 observations for the period of 2013/14 to 2023/24 by using the linear regression model and the model is $ROE_{it} = \alpha + \beta_1 CR_{it} + \beta_2 LR_{it} + \beta_3 AGR_{It} + \beta_4 BER_{it} + \beta_5 LEV_{it} + \beta_6 CAR_{it} + e_{it}$ where the dependent variable is ROE (Return on equity as measured by the ratio of net income to total equity, in percentage). The independent variables are CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), LR (Liquidity risk as measured by cash reserve ratio, in percentage), AGR (Annual growth rate of total assets, in percentage), LEV (Leverage as measured by the ratio of total debt to total equity, in ratio), BER (Branch expansion rate, in percentage), and CR (Credit risk as measured by the non-performing loan, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		CR	LR	AGR	BER	LEV	CAR			
1	17.033	-1.628						0.123	4.183	14.931
	(29.223)	(3.864)								
2	14.597		-0.064					0.011	4.444	2.074
	(19.502)		(1.440)							
3	15.515			0.001				0.010	4.490	0.022
	(27.465)			(0.148)						
4	16.269				-0.023			0.061	4.330	7.411
	(31.028)				(2.722)					
5	16.033					-0.641		0.010	4.490	0.003
	(1.554)					(0.055)				
6	15.216						0.018	0.010	4.498	0.007
	(4.938)						(0.081)			
7	16.535	-1.562	-0.032					0.119	4.192	7.711
	(18.657)	(3.618)	(0.747)							
8	16.432	-1.558	-0.035	0.002				0.111	4.213	5.101
	(15.666)	(3.589)	(0.764)	(0.186)						
9	16.459	-1.239	-0.025	0.009	-0.013			0.111	4.216	4.080
	(15.688)	(2.305)	(0.536)	(0.742)	(1.006)					
10	17.848	-1.223	-0.027	0.010	-0.013	-1.617		0.101	4.235	3.234
	(1.754)	(2.215)	(0.550)	(0.745)	(1.010)	(0.137)				
11	19.700	-1.237	-0.026	0.009	-0.013	-2.474	0.077	0.093	4.255	2.689
	(1.706)	(2.223)	(0.533)	(0.700)	(1.014)	(0.205)	(0.345)			

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 4 shows that 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 similar to the findings of Bateni *et al.* (2024). Similarly, the beta coefficients for leverage ratio are negative with return on equity. It indicates that leverage ratio has a negative impact on return on equity. This finding is consistent with the findings of Meshack and Nyamute (2016). Likewise, the beta coefficients for liquidity risk are negative with return on equity. It indicates that liquidity risk has a negative impact on return on equity. This finding is similar to the findings of Bintara (2020). Further, the beta coefficients for annual growth rate of total assets are positive with return on equity. It indicates that annual

growth rate of total assets has a positive impact on return on equity. This finding is consistent with the findings of Soumadi and Aldaibat (2012). In addition, the beta coefficients for credit risk are negative with return on equity. It indicates that credit risk has a negative impact on return on equity. This finding is similar to the findings of Ekinci and Poyraz (2019). Moreover, the beta coefficients for bank expansion rate are negative with return on equity. It indicates that bank expansion rate has a negative impact on return on equity. This finding contradicts with the findings of Liang *et al.* (2020).

Table 5 shows the regression results of credit risk, liquidity risk, annual growth rate of total assets, bank expansion rate, leverage and capital adequacy ratio on ROA of Nepalese commercial banks.

Table 5

Estimated regression results of credit risk, liquidity risk, annual growth rate of total assets, branch expansion rate, leverage and capital adequacy ratio on return on assets

The results are based on panel data of 10 Nepalese commercial banks with 100 observations for the period of 2013/14 to 2023/24 by using the linear regression model and the model is $ROA_{it} = \alpha + \beta_1 CR_{it} + \beta_2 LR_{it} + \beta_3 AGR_{It} + \beta_4 BER_{it} + \beta_5 LEV_{it} + \beta_6 CAR_{it} + e_{it}$ where the dependent variable is ROA (Return on assets as measured by the ratio of net income to total assets, in percentage). The independent variables are CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), LR (Liquidity risk as measured by cash reserve ratio, in percentage), AGR (Annual growth rate of total assets, in percentage), LEV (Leverage as measured by the ratio of total debt to total equity, in ratio), BER (Branch expansion rate, in percentage), and CR (Credit risk as measured by the non-performing loan, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		CR	LR	AGR	BER	LEV	CAR			
1	1.801	-0.168						0.121	0.435	14.688
	(29.655)	(3.833)								
2	1.620		-0.001					0.009	0.467	0.089
	(20.587)		(0.298)							
3	1.701			0.002				0.021	0.459	3.164
	(29.396)			(1.779)						
4	1.712				-0.002			0.045	0.454	5.629
	(31.113)				(2.373)					
5	4.410					-3.126		0.059	0.451	7.166
	(4.255)					(2.677)				
6	0.269						0.100	0.182	0.420	22.996
	(0.933)						(4.795)			
7	1.834	-0.173	-0.002					0.115	0.437	7.401
	(19.831)	(3.834)	(0.480)							
8	1.951	-0.177	-0.005	0.002				0.143	0.430	6.526
	(18.213)	(3.984)	(1.121)	(2.067)						
9	1.949	-0.194	-0.005	0.003	0.001			0.137	0.431	4.930
	(18.126)	(3.523)	(0.980)	(1.983)	(0.538)					
10	3.961	-0.171	-0.002	0.002	0.000	-2.342		0.163	0.425	4.849
	(3.876)	(3.087)	(0.476)	(1.333)	(0.203)	(1.979)				
11	2.025	-0.157	-0.002	0.001	0.000	-1.446	0.080	0.271	0.397	7.127
	(1.879)	(3.022)	(0.349)	(1.001)	(0.320)	(1.281)	(3.864)			

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 asset is the dependent variable.

Table 5 shows that 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 similar to the findings of Farkasdi *et al.* (2021). Similarly, the beta coefficients for leverage ratio are negative with return on assets. It indicates that leverage ratio has a negative impact on return on assets. This finding is consistent with the findings of Mennawi (2020). Likewise, the beta coefficients for liquidity risk are negative with return on assets. It indicates that liquidity risk has a negative impact on return on assets. This finding is similar to the findings of Ghimire *et al.* (2024). Further, the beta coefficients for annual growth rate of total assets are positive with return on assets. It indicates that annual growth rate of total assets has a positive impact on return on assets. This finding is consistent with the findings of Supriyono and Herdhayinta (2019). In addition, the beta coefficients for credit risk are negative with return on assets. It indicates that credit risk has a negative impact on return on assets. This finding is similar to the findings of Bhattarai (2017). Moreover, the beta coefficients for bank expansion rate are negative with return on assets. It indicates that bank expansion rate has a negative impact on return on assets. This finding contradicts with the findings of Wu (2020).

4. Summary and conclusion

The choice of capital structure should align with the company's corporate strategy. Effective risk management is crucial in ensuring that the chosen corporate strategy and capital structure lead to sustainable profitability. Poor risk management can result in significant financial losses, even if the strategy and capital structure are sound. The key to enhancing profitability lies in balancing these factors—managing risk effectively, aligning corporate strategy with market opportunities, and optimizing the capital structure to support growth while minimizing financial vulnerabilities.

This study attempts to examine the impact of risk, corporate strategy and capital structure on the profitability of Nepalese commercial banks. The study is based on secondary data of 10 commercial banks with 100 observations for the study period from 2013/14 to 2022/23.

The study showed that annual growth rate of total assets and capital adequacy ratio have positive effect on profitability of Nepalese commercial banks. Similarly, credit risk, liquidity risk, bank expansion rate and leverage have negative effect on bank profitability. The study concluded that capital adequacy ratio is the most influencing factor that determine the return on assets of Nepalese commercial banks. Therefore, a well-maintained CAR not only serves as a buffer against financial shocks but also directly contributes to a bank's ability to generate higher returns on its assets. As such, for Nepalese commercial banks, focusing on capital adequacy is key to enhancing ROA and ensuring long-term financial success. The study also concluded that credit risk is the most influencing factor that determine the return on equity of Nepalese commercial banks.

References

Akinleye, G. T., and O. E. Oluwadare, 2022. Cash reserve requirement and banks' profitability: Evidence from deposit money banks in Nigeria. *Academy of Accounting and Financial Studies Journal* 26(1), 1-13.

Ayalew, Z. A., 2021. Capital structure and profitability: Panel data evidence of private banks in Ethiopia. *Cogent Economics and Finance* 9(1), 1 -24.

Bateni, L., H. Vakilifard, and F. Asghari, 2024. The influential factors on capital adequacy ratio in Iranian Banks. *Canadian Center of Science and Education* 6(11), 108-116.

Bhattarai, Y. R., 2017. Effect of non-performing loan on the profitability of commercial banks in Nepal. *Prestige International Journal of Management and Research* 10(2), 1-12.

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

Bist, R., 2024. Comparative analysis of credit risk management practices: A study of domestic and joint venture commercial banks in Nepal. *Apex Journal of Business and Management* 2(1), 21-34

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.

Caruso, G., S. A. Gattone, F. Fortuna, and T. D. Battista, 2021. Cluster Analysis for mixed data: An application to credit risk evaluation. *Socio-Economic Planning Sciences* 7(3), 19-29.

Chandler, A. D., 2019. *Strategy and Structure: Chapters in the History of American Industrial Enterprise*s (MIT Press, Cambridge).

Dima, A. M., and I. Orzea, 2014. Risk management in banking. *International Journal of Finance* 2(3), 107-122.

Dinh, D. V., and V. T. Huyen, 2024. Commercial banks' capital structure and performance in Vietnam: Panel data model approach. *Banks and Bank Systems* 19(2), 126-139.

Ekinci, R., and G. Poyraz, 2019. The effect of credit risk on financial performance of deposit banks in Turkey. *Procedia Computer Science* 5(8), 61-69.

Farkasdi, S., B. Septiawan, and E. S. Alghifari, 2021. Determinants of commercial banks profitability: Evidence from Germany. *JRAK* 13(2), 82-88.

Ghimire, S. R., Aryal, N. P. and A. Basnet, 2024. Impact of monetary policy on the profitability of Nepalese Commercial Banks. *Interdisciplinary Journal of Management and Social Sciences* 5(1), 147-157.

Gurung, J. B., and N. Gurung, 2022. Factors determining profitability of commercial banks: Evidence from Nepali Banking Sector. *Prithvi Academic Journal* 5(1), 100-113.

Hirindu Kawshala, K., 2017. The factors effecting on bank profitability. *International Journal of Scientific and Research Publications 7*(2), 212-216.

Imran, M., and F. Hour, 2021. Impact of financial risk on profitability: A comparative study of manufacturing and services sectors. *Bulletin of Business and Economics* 12(1), 18-35.

Isanzu, J. S., 2017. The impact of credit risk on the profitability of Chinese banks. *Journal of International Business Research and Marketing* 2(3), 14-17.

Kafle, R., 2023. Impact of credit risk management on profitability of Nepalese commercial banks.

International Journal of Finance and Commerce 5(1), 32-39.

Khaddafi , M., 2023. The effect of financial ratios on profitability of Indonesian Islamic banking before and during the Covid-19 pandemic. *Jurnal Manajemen Indonesia* 8(1), 1-11.

King'ori, S., W. Kioko, and H. Shikumo, 2017. Determinants of profitability of microfinance banks in Kenya. *Research Journal of Finance and Accounting* 8(16), 1-8.

Liang, H. Y., Y. P. Ching, and K. C. Chan, 2013. Enhancing bank performance through branches or representative offices? Evidence from European banks. *International Business Review 22*(3), 495-508.

Mennawi, A. N. A., 2020. The Impact of liquidity, credit, and financial leverage risks on financial performance of Islamic banks: A case of Sudanese banking sector. *Risk and Financial Management* 2(2), 59-72.

Meshack, K. M., and M. W. Nyamute, 2016. The effect of monetary policy on financial performance of the commercial banks listed on the Nairobi securities exchange. *American Journal of Finance* 1(1), 74-87.

Mujahid, M., and K. Akhtar, 2022. Impact of capital structure on firms' financial performance and shareholders wealth: Textile Sector of Pakistan. *International Journal of Learning and Development* 4(2), 27-33.

Mukhiya, R., 2024. Capital structure and profitability of commercial banks in Nepal. *The Mega Journal* 3(1), 1-9.

Musah, A., 2020. The impact of capital structure on profitability of commercial banks in Ghana. *AESS Publications* 6(1), 21-36.

Neupane, B. P., 2020. Profitability determinants of Nepalese commercial banks. *Press Academia* 1(2), 40-45.

Otekunrin, A. O., T. I. Nwanji, D. Eluyela, J. K. Olowookere, and D. C. Fagboro, 2020. Capital structure and profitability: The case of Nigerian deposit money banks. *Banks and Bank Systems* 15(4), 221-228.

Pham, N. H., T. M. Hoang, and N. T. Pham, 2022. The impact of capital structure on bank profitability: evidence from Vietnam. *Cogent Business and Management* 4(2), 1-25.

Rajbahak, S., S. Shrestha, S. Rijal, and S. Shrestha, 2019. Impact of board size, foreign ownership, firmsize, debt to equity, firm age and firm growth on bank performance in Nepal. *Nepalese Journal of Corporate Governance* 1(1), 59-70.

Rdaydeh, M. A., B. Hamouri, A. A. Rahman, A. Meero, and M. I. Tabash, 2022. Exploring the effect of market risks on bank profitability: Evidence from Jordan. *Banks and Bank Systems* 17(1), 186-195.

Sayani, H., P. Kishore, and V. Kumar, 2017. Internal determinants of return on equity: case of the UAE commercial banks. *Banking and Finance Review 9*(1), 47-74.

Soumadi, M. M., and B. F. Aldaibat, 2012. Growth strategy and bank profitability: Case of Housing Bank for Trade and Finance. *European Scientific Journal 8*(22), 54-62.

Supriyono, R. A., and H. Herdhayinta, 2019. Determinants of bank profitability: The case of the regional development bank (BPD Bank) in Indonesia. *Journal of Indonesian Economy and Business 34*(1), 1-17.

Uddin, M. K., 2022. Effect of leverage, operating efficiency, non-performing loan, and capital adequacy ratio on profitability of commercial banks in Bangladesh. *European Journal of Business and Management Research* 7(3), 289-295.

Vina, J., A. T. Junaedi, and H. P. Panjaitan, 2024. Determinants of profitability and capital structure in Kompas100 index companies. *Journal of Applied Business and Technology* 5(2), 11-19.

Wu, M. L., 2020. Examining the internal determinants of profitability of commercial banks in China: A Panel Data Modeling Based Empirical Study. *International Journal of Managerial Studies and Research (IJMSR)* 8(3), 1-12.

Yakubu, I. N., M. M., Alhassan, A. A. Mikhail, and A. N. I. Alhassan, 2017. Commercial banks performance in Ghana: Does capital structure matter? *International Journal of Accounting and Financial Reporting* 7(1), 333-342.