Capital Structure, Growth and Profitability: A Case of Nepalese Commercial Banks

Rebika Sunuwar, Padam Dhakal, Pragya Neupane, Prakash Joshi, Radhika Adhikari, Rakesh Shah and Gangadhar Dahal, Ph.D.*

Abstract

This study examines the impact of capital structure and growth on the profitability of Nepalese commercial banks. Return on assets and return on equity are the selected dependent variables. The selected independent variables are debt to equity ratio, debt to asset ratio, asset growth, loan to deposit ratio and capital adequacy ratio. The study is based on secondary data of 16 commercial banks with 128 observations for the study period from 2016/17 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 capital structure and growth on the profitability of Nepalese commercial banks.

The study showed that capital adequacy ratio has a positive effect 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. Likewise, debt to assets ratio has a negative effect on return on assets and return on equity. It indicates that increase in debt to assets ratio leads to decrease in return on assets and return on equity. However, the study showed that loan to deposit ratio has a negative effect on return on assets and return on equity. It reveals that increase in loan to deposit ratio leads to decrease in return on assets and return on equity. Similarly, debt-to-equity ratio has a positive effect on return on assets. It indicates that higher the debt-to-equity ratio, lower would be the return on assets. Similarly, asset growth has a positive effect on return on equity. It indicates that increase in asset growth leads to increase in return on equity. The result also reveals that deposit growth has a positive effect on return on assets. It indicates that increase in deposit growth leads to increase in return on assets.

Keywords: return on assets, return on equity, debt to equity ratio, debt to asset ratio, asset growth, deposit growth, loan to deposit ratio, capital adequacy ratio

1. Introduction

The performance of a country's banking sector plays a pivotal role in determining overall economic development, particularly in developing economies. As the primary financial intermediaries, commercial banks mobilize public deposits and allocate funds to productive sectors of the economy, thereby promoting investment and stimulating economic growth. Measuring bank profitability is essential as it indicates how efficiently financial resources are utilized within a specific timeframe (Juul Andersen., 2009). A profitable banking system contributes not only to the strength of individual institutions but also to national financial stability and resilience to economic shocks (Oberholzer and Van der Westhuizen, 2004). These changes have placed renewed emphasis on banks' ability to maintain profitability while ensuring adequate capital levels. Among the various factors influencing profitability, capital structure, the mix of debt and equity used to finance operations, has a critical impact on financial performance. A poorly designed capital structure may result in inefficient use of funds and heightened financial risk, ultimately undermining profitability (Xu, 2012). Furthermore, growth in assets, equity, deposits, and loans is another major determinant of bank profitability. While growth is often associated with improved performance, unchecked expansion may lead to inefficiencies or increased credit risk. With rising banking outreach, credit expansion, and financial digitization, understanding how capital structure and growth variables influence profitability is highly relevant for strategic decision-making.

* Ms. Sunuwar, Mr. Dhakal, Ms. Neupane, Mr. Joshi, Ms. Adhikari and Mr. Shah are Freelance Researchers, Kathmandu, Nepal and Dr. Dahal is the Managing Director, Uniglobe College (Pokhara University Affiliate), Kathmandu, Nepal.

Pham et al. (2022) determined the effect of capital structure on the profitability of Vietnamese commercial banks. Specifically, it investigates the relationship between capital structure and profitability using an imbalanced panel data set of Vietnamese commercial banks from 2012 to 2018. The study findings, based on a dataset of 30 Vietnamese commercial banks, indicate that customer deposits have a negative effect on bank profitability, whereas non-deposit liabilities have a positive effect on bank profitability. Gill et al. (2011) examined the effect of capital structure on profitability by examining the effect of capital structure on profitability of the American service and manufacturing firms using sample of 272 American firms listed on New York Stock Exchange for a period of 3 years from 2005 – 2007. The results showed a positive relationship between i) short-term debt to total assets and profitability and ii) total debt to total assets and profitability in the service industry. The findings also showed a positive relationship between i) short-term debt to total assets and profitability, ii) long-term debt to total assets and profitability, and iii) total debt to total assets and profitability in the manufacturing industry. Singh and Bagga (2019) evaluated the effect of capital structure on the profitability of Nifty 50 companies listed on National Stock Exchange of India from 2008 – 2017. The study concluded that there is significant positive impact of capital structure on firm's profitability.

Rosita and Nuryaman (2025) examined the influence of non-debt tax shield (NDTS), business risk, and company size on capital structure and its impact on profitability. The results revealed that NDTS has a significant negative effect on capital structure. Tax savings from depreciation replace the tax benefits of interest, leading companies with high NDTS to reduce debt usage. Business risk also has a significant negative effect on capital structure. Companies with high business risk prefer a conservative capital structure, relying on equity or internal funds to mitigate default risk. Conversely, company size has a significant positive effect on capital structure. Capital structure significantly negatively affects profitability. While debt can enhance profitability if managed properly, a high debt proportion increases interest burdens, thereby reducing profits. Abor (2005) investigated the relationship between capital structure and profitability of listed firms on the Ghana Stock Exchange (GSE) during a five-year period. The results revealed a significantly positive relation between the ratio of short-term debt to total assets and ROE. However, a negative relationship between the ratio of long-term debt to total assets and ROE was found. With regard to the relationship between total debt and return rates, the results showed a significantly positive association between the ratio of total debt to total assets and return on equity.

Astuti and Haerunnisa (2025) analyzed the influence of capital structure and liquidity on the profitability of pharmaceutical companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. The results showed that partially, capital structure has a significant effect on profitability, while liquidity has no significant influence. However, simultaneously, these two variables have a significant influence on profitability with a contribution of 74.5%. These findings emphasizes the importance of proper capital structure planning in an effort to improve the financial performance of pharmaceutical companies in the post-pandemic era. Shubita and Alsawalhah (2012) assessed the effect of capital structure on profitability by examining the effect of capital structure on profitability of the industrial companies listed on Amman Stock Exchange during a six-year period (2004-2009). Applying correlations and multiple regression analysis, the results revealed significantly negative relation between debt and profitability. This suggests that profitable firms depend more on equity as their main financing option. Mendell, et al. (2006) investigated financing practices across firms in the forest products industry by studying the relationship between debt and

taxes hypothesized in finance theory. In testing the theoretical relationship between taxes and capital structure for 20 publicly traded forest industry firms for the years 1994-2003, the study found a negative relationship between profitability and debt, a positive relationship between non-debt tax shields and debt, and a negative relationship between firm size and debt.

Ngoc et al. (2021) determined the impact of capital structure on profitability (represented by ROA and ROE indicators) of 30 logistics enterprises listed on Ho Chi Minh City Stock Exchange (HOSE) in the period of 2012-2019. The results showed that capital structure has a negative impact on profitability represented by ROA of firms. Nguyen and Nguyen (2020) explored the impact of capital structure on firm performance in the context of Vietnam. The study investigated the different effect of capital structure on firm performance in state-owned and non-state enterprises listed on the Vietnam stock market. The empirical results showed that capital structure has a statistically significant negative effect on the firm performance. The result also showed this effect is stronger in state-owned enterprises than non-state enterprises in Vietnam. Bintara (2020) examined the effects of profitability (ROA), capital structure (DER), and sales growth on stock returns in property, real estate, and building construction companies listed on the Indonesia Stock Exchange from 2013 to 2018. Using multiple regression analysis on 78 firm-year observations, the study found that while capital structure had a positive impact on stock returns. Isayas (2022) investigated the key firm- specific and macroeconomic determinants of profitability of commercial banks in Ethiopia. The study revealed that firm size, liquidity ratio, asset tangibility, capital adequacy, leverage and real GDP growth rate have a positive and statistically significant effect on the profitability of banks, while firm age and the inflation rate have a negative but statistically insignificant effect on the profitability of banks in Ethiopia. Ayalew (2021) studied the empirical relationship between capital structure, as measured by total and short-term debt ratios, and profitability of private banks in Ethiopia, for the period 2013/14 to 2018/19, using panel fixed effects. Based on the regression analysis results, capital structure variables and some bank-specific characteristics explain a substantial part of the variations in bank profitability. Higher profitability measures of ROA and net interest margin tend to be associated with relatively higher total and short-term debt ratios, loan to deposit ratios, and credit risks. Besides, older banks are in a better position than younger counterparts in terms of profitability. The impact of size is found to be significantly negative, at least for the ROA model, implying that Ethiopian private banks are operating below their optimal capacity.

In Nepalese context, Khatri (2024) examined the impact of capital structure and growth on the profitability of Nepalese commercial banks. The study showed that debt to equity ratio has a negative effect on return on assets. It means that increase in debt-to-equity ratio leads to decrease in return on assets. Likewise, debt to asset ratio has a positive effect on return on equity and return on assets. It means that increase in debt to asset ratio leads to increase in return on equity and return on assets. In contrast, assets growth has a negative effect on return on equity and return on assets. It shows that higher the assets growth, lower would be the return on equity and return on assets. Chaurasiya et al. (2024) examined the relationship between capital structure components and profitability in Nepalese commercial banks. The results revealed that debt-to-asset ratio, short-term debt ratio and long-term debt ratio exhibit weak and statistically insignificant correlations with ROE. In contrast, debt-to-equity ratio shows a significant positive relationship with both ROE and EPS, suggesting that a higher debt-to-equity ratio improves profitability. Effective debt management strategies that improve bank profitability could contribute to overall economic growth, enhance financial

stability, and create better opportunities for financial inclusion in Nepal.

The above discussion shows that empirical evidences vary greatly across the studies on the impact of capital structure and growth on bank profitability. Though there are above-mentioned empirical evidence 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 capital structure and growth on the profitability in Nepalese commercial banks. Specifically, it examines the relationship of debt to equity ratio, debt to assets ratio, asset growth, deposit growth, loan to deposit ratio, and capital adequacy ratio with return on assets and return on equity in 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 16 Nepalese commercial banks for the study period from 2016/17 to 2023/24, leading to a total of 128 observations. 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	Agricultural Development Bank Limited	2016/17 to 2023/24	8
2	Citizens International Bank Limited	2016/17 to 2023/24	8
3	Standard Chartered Bank Nepal Limited	2016/17 to 2023/24	8
4	Rastriya Banijya Bank Limited	2016/17 to 2023/24	8
5	Everest Bank Limited	2016/17 to 2023/24	8
6	Global IME Bank Limited	2016/17 to 2023/24	8
7	Himalayan Bank Limited	2016/17 to 2023/24	8
8	Siddhartha Bank Limited	2016/17 to 2023/24	8
9	Machhapuchchhre Bank Limited	2016/17 to 2023/24	8
10	Nabil Bank Limited	2016/17 to 2023/24	8
11	Sanima Bank Limited	2016/17 to 2023/24	8
12	Nepal Bank Limited	2016/17 to 2023/24	8
13	Nepal SBI Bank Limited	2016/17 to 2023/24	8
14	NMB Bank Limited	2016/17 to 2023/24	8
15	Nepal Investment Mega Bank Limited	2016/17 to 2023/24	8
16	Prime Commercial Bank Limited	2016/17 to 2023/24	8
Total number of observations			128

Thus, the study is based on the 128 observations.

The model

The model used in this study assumes that bank profitability depend capital structure and growth. The dependent variables selected for the study are return on assets and return on equity. Similarly, the selected independent variables are debt to equity ratio, debt to assets ratio, asset growth, deposit growth, loan to deposit ratio and capital adequacy ratio. Therefore, the models take the following forms:

$ROA = \beta_0 + \beta_1 DER + \beta_2 DAR + \beta_3 AG + \beta_4 DG + \beta_5 LDR + \beta_6 CAR + e$

$ROE = \beta_0 + \beta_1 DER + \beta_2 DAR + \beta_3 AG + \beta_4 DG + \beta_5 LDR + \beta_6 CAR + e$

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 shareholders' equity, in percentage.

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

LDR = Loan to deposit ratio as measured by total loan to total deposit, in percentage.

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

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

AG= Assets growth as measured by the percentage change in total assets from one year to the next, in percentage.

DG= Deposit growth as measured by the annual percentage increase in total customer deposits, in percentage.

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

Debt to equity ratio

Zarrouk et al. (2016) found that a bank's profitability is positively influenced by operational efficiency, quality of assets, and capital strength. However, high levels of debt usage tend to negatively impact profitability. Similarly, Nurlatipah et al. (2022), in a study on Jordanian banks, reported that higher debt and lower asset quality are associated with reduced returns on both assets and equity. Al Omar and Al Mutairi (2008) observed a significant negative impact of liquidity and debt ratios on the profitability of Kuwaiti banks. Staikouras and Wood (2004) also identified debt-to-equity, asset growth, deposit growth, loan-to-deposit ratio, and capital adequacy as major profitability determinants in European banks. Based on it, this study develops the following hypothesis:

H_1: Debt-to-equity ratio has a negative impact on bank profitability.

Debt to equity ratio

Qayyum et al. (2020) analyzed the determinants of bank profitability in Pakistan using pooled regression analysis. The study concluded that ratios like equity-to-assets, debt-to-assets, and deposit-to-assets, along with bank size and asset management efficiency, significantly influence profitability. Specifically, a higher debt-to-assets ratio negatively

affect profitability. In a similar context, Alarussi and Alhaderi (2018) observed that firm size (measured by total sales) has a strong positive correlation with profitability in Malaysian-listed companies. The study also showed that both the debt-to-equity ratio and the debt-to-assets ratio have a negative correlation with profitability. Haron and Nomran (2016) found that both leverage and the cash conversion cycle negatively and significantly affect return on assets (ROA), using ordinary least squares (OLS) and fixed-effects models. Based on it, this study develops the following hypothesis:

H_2: There is a positive relationship between the debt-to-assets ratio and bank profitability.

Asset growth

Chronopoulos et al. (2015) observed a positive link between asset growth and profitability in U.S. banks. Similarly, Bourke (1989) identified asset growth as a key factor influencing bank profitability in Europe, North America, and Australia. Growth in assets, particularly interest-earning assets like loans and securities, typically boosts interest income. Gul et al. (2011) also found that asset growth positively impacts profitability in Pakistani banks. A larger asset portfolio can provide more opportunities to diversify across sectors, geographies, and products, which can stabilize earnings and reduce the volatility of returns. Based on it, this study develops the following hypothesis:

H_3: There is a positive relationship between asset growth and bank profitability.

Deposit growth

According to Gul et al. (2011), both asset and deposit growth are positively related to bank profitability in Pakistan. Ozgur and Gorus (2016) supported this by stating that capital ratio, total assets, and deposit growth positively influence profitability in Turkey. Kundid and Bilic (2016), studying Croatian banks, also concluded that deposit and asset growth significantly and positively impact bank profitability. Based on it, this study develops the following hypothesis:

H_4: There is a positive relationship between deposit growth and bank profitability.

Loan to deposit ratio

The loan-to-deposit ratio is a key indicator of a bank's liquidity health. A high ratio suggests that the bank may be overextended in its lending, increasing financial risk. Suroso (2022) found this ratio negatively impacts both ROA and ROE. Similarly, Golubeva et al. (2019) reported a negative link between this ratio and return on equity. Further, Mohanty and Krishnankutty (2018) found that a higher loan-to-deposit ratio is associated with lower returns on both assets and equity. Based on it, this study develops the following hypothesis:

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

Capital adequacy ratio

Ogboi and Unuafe (2013) analyzed the determinants influencing the profitability of commercial banks in Nigeria. The findings revealed that banks with stronger capital bases, efficient management, and lower credit risk tend to earn higher returns on assets. Similarly, Irawati et al. (2019) also found a positive correlation between capital adequacy and overall bank performance. In line with these findings, Iloska (2014) emphasized that the adequacy and quality of capital directly affect profitability. Banks with insufficient capital are more likely to face higher risks and borrowing costs, which in turn reduces their profitability.

Additionally, Brock and Suarez (2000) confirmed that the capital adequacy ratio is both positively and significantly related to a bank's profitability. Based on it, this study develops the following hypothesis:

H_6: There is a positive relationship between capital adequacy ratio and bank profitability.

3. Results and discussion

Descriptive statistics

Table 2 presents the descriptive statistics of selected dependent and independent variables during the period 2016/17 to 2023/24.

Table 2

Descriptive statistics

This table shows the descriptive statistics of dependent and independent variables of 16 Nepalese commercial banks for the study period of 2016/17 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 income to shareholders' 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, LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposit, in percentage), DG (Deposit growth as measured by the annual percentage increase in total customer deposits, in percentage), DER (Debt to equity ratio measured by the ratio of total debt to total equity, in percentage), DAR (Debt to equity ratio as measured by the ratio of total debt by total assets, in percentage) and AG (Assets growth as measured by the percentage change in total assets from one year to the next, in percentage).

Variables	Minimum	Maximum	Mean	Std. Deviation
ROA	0.01	2.86	1.47	0.55
ROE	0.08	42.94	12.61	5.12
DER	0.99	15.56	7.65	2.47
DAR	65.00	94.00	87.42	4.04
AG	-6.73	48.83	13.22	9.70
DG	-16.80	62.40	16.20	10.96
LDR	56.73	96.08	82.19	8.72
CAR	9.60	22.99	14.26	2.25

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 correlation coefficients of dependent and independent variables of 16 Nepalese commercial banks for the study period of 2016/17 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 income to shareholders' 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, LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposit, in percentage), DG (Deposit growth as measured by the annual percentage increase in total customer deposits, in percentage), DER (Debt to equity ratio measured by the ratio of total debt to total equity, in percentage), DAR (Debt to equity ratio as measured by the ratio of total debt by total assets, in percentage) and AG (Assets growth as measured by the percentage change in total assets from one year to the next, in percentage).

Variables	ROA	ROE	DER	DAR	AG	DG	LDR	CAR
ROA	1							
ROE	0.387**	1						
DER	-0.188*	0.248**	1					
DAR	-0.112	-0.030	0.027	1				
AG	-0.060	0.052	0.155	-0.096	1			
DG	0.026	-0.065	-0.083	0.009	0.206*	1		
LDR	-0.160	-0.051	0.164	-0.083	0.269**	0.067	1	
CAR	0.425**	0.169	-0.263**	-0.036	-0.175*	-0.077	-0.362**	1

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

Table 3 shows that 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. Likewise, debt to assets ratio has a negative relationship with return on assets. It indicates that increase in debt to assets ratio leads to decrease in return on assets. However, the study shows that loan to deposit ratio is negatively correlated to return on assets. It reveals that increase in loan to deposit ratio leads to decrease in return on assets. Similarly, there is a negative relationship of debt-to-equity ratio with return on assets. It indicates that higher the debt-to-equity ratio, lower would be the return on assets. Similarly, asset growth has a negative relationship with return on assets. It indicates that increase in asset growth leads to decrease in return on assets. The result also reveals that deposit growth has a positive relationship with return on assets. It indicates that increase in deposit growth leads to increase in return on assets.

Similarly, the study reveals that debt to assets ratio has a negative relationship with return on equity. It indicates that increase in debt to assets ratio leads to decrease in return on equity. Likewise, 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, debt-to-equity ratio is positively correlated to return on equity. It indicates that increase in debt-to-equity ratio leads to increase in return on equity. However, the study shows that asset growth has a positive relationship with return on equity. It reveals that increase in asset growth leads to increase in return on equity. Similarly, there is a negative relationship of loan to deposit with return on equity. It indicates that higher the loan to deposit ratio, lower would be the return on equity. The result also reveals that deposit growth has a negative relationship with return on equity. It indicates that increase in deposit growth 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 debt to equity ratio, debt to assets ratio, asset growth, deposit growth, loan to deposit ratio and capital adequacy ratio with return on assets of Nepalese commercial banks.

Table 4

Estimated regression results of debt to equity ratio, debt to assets ratio, asset growth, deposit growth, loan to deposit ratio and capital adequacy ratio with return on assets of Nepalese commercial banks

The results are based on panel data of 16 Nepalese commercial banks with 128 observations for the period of 2016/17-2023/24 by using the linear regression model and the model is $ROA = \beta_0 + \beta_1 DER + \beta_2 DAR + \beta_3 AG + \beta_4 DG + \beta_5 LDR + \beta_6 CAR + e_{it}$ 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 CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage, LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposit, in percentage), DG (Deposit growth as measured by the annual percentage increase in total customer deposits, in percentage), DER (Debt to equity ratio measured by the ratio of total debt to total equity, in percentage), DAR (Debt to equity ratio as measured by the ratio of total debt by total assets, in percentage) and AG (Assets growth as measured by the percentage change in total assets from one year to the next, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		DER	DAR	AG	DG	LDR	CAR			
1	1.794 (11.401)**	-0.042 (2.150)*						0.280	0.544	4.621
2	2.802 (2.650)*		-0.015 (1.260)					0.005	0.551	1.587
3	1.512 (18.184)**			-0.003 (0.668)				0.004	0.552	0.446
4	1.450 (16.553)**				0.001 (0.293)			0.007	0.553	0.860
5	2.303 (5.012)**					-0.010 (1.819)		0.018	0.546	3.308
6	-0.015 (0.052)						0.104 (5.271)**	0.474	0.501	27.784
7	3.059 (2.913)**	-0.041 (2.120)*	-0.015 (1.219)					0.301	1.543	3.062
8	3.093 (2.909)**	-0.040 (2.032)*	-0.015 (1.224)	-0.002 (0.469)				0.026	0.544	2.105
9	3.084 (2.887)**	-0.040 (1.981)*	-0.015 (1.227)	-0.003 (0.509)	0.001 (0.240)			0.018	0.546	1.581
10	3.919 (3.335)**	-0.035 (1.757)	-0.016 (1.340)	-0.001 (0.115)	0.001 (0.291)	-0.010 (1.652)		0.032	0.542	1.828
11	1.376 (1.120)	-0.017 (0.868)	-0.013 (1.139)	-0.001 (0.115)	0.003 (0.610)	-0.002 (0.279)	0.099 (4.496)**	0.165	0.503	5.135

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 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 Iloska (2014). Likewise, the beta coefficients for debt-to-equity ratio are negative with return on assets. It indicates that debt-to-equity ratio has a negative impact on return on assets. This finding is similar to the findings of Alarussi and Alhaderi (2018). Similarly, the beta coefficients for loan to deposit ratio are negative with return on assets. It indicates that loan to deposit ratio has a negative impact on return on assets. This finding is consistent with the findings of Golubeva et al. (2019). Likewise, the beta coefficients for deposit growth are positive with return on assets. It indicates that deposit growth has a positive impact on return on assets. This finding contradicts with the findings of Ozgur and Gorus (2016). Furthermore, the beta coefficients for asset growth are negative with return on assets which indicates that asset growth has a negative impact on return on assets. This finding is consistent with the findings of Chronopoulos et al. (2015). Likewise, the beta coefficients for debt to assets ratio are negative with return on assets. It indicates that debt to assets ratio has a negative impact on return on assets. This finding is similar to the findings of Staikouras and Wood (2004).

Table 5 shows the regression results of debt to equity ratio, debt to assets ratio, asset growth, deposit growth, loan to deposit ratio and capital adequacy ratio with return on equity of Nepalese commercial banks.

Table 5

Estimated regression results of debt to equity ratio, debt to assets ratio, asset growth, deposit growth, loan to deposit ratio and capital adequacy ratio with return on equity of Nepalese commercial banks

The results are based on panel data of 16 Nepalese commercial banks with 128 observations for the period of 2016/17 -2023/24 by using the linear regression model and the model is $ROE = \beta_0 + \beta_1 DER + \beta_2 DAR + \beta_3 AG + \beta_4 DG + \beta_5 LDR + \beta_6 CAR + e_{it}$ where, the dependent variable is ROE (Return on equity as measured by the ratio of net income to shareholders' 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, LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposit, in percentage), DG (Deposit growth as measured by the annual percentage increase in total customer deposits, in percentage), DER (Debt to equity ratio measured by the ratio of total debt to total equity, in percentage), DAR (Debt to equity ratio as measured by the ratio of total debt by total assets, in percentage) and AG (Assets growth as measured by the percentage change in total assets from one year to the next, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		DER	DAR	AG	DG	LDR	CAR			
1	8.665 (6.014)**	0.516 (2.878)**						0.054	4.982	8.282
2	15.884 (1.608)		-0.037 (0.332)					0.007	5.141	0.110
3	12.170 (15.957)**			0.027 (0.583)				0.005	5.069	0.233
4	13.108 (16.141)**				-0.031 (0.736)			0.004	5.132	0.542
5	15.068 (3.491)**					-0.030 (0.572)		0.005	5.137	0.327
6	7.116 (2.466)*						0.385 (1.928)	0.021	5.069	3.717
7	12.673 (1.311)	0.518 (2.879)**	-0.046 (0.419)					0.048	4.999	4.202
8	11.890 (1.229)	0.508 (2.815)**	-0.038 (0.348)	0.006 (0.119)				0.041	4.952	2.777
9	12.090 (1.246)	0.496 (2.718)**	-0.036 (0.327)	0.012 (0.243)	-0.024 (0.569)			0.035	4.965	2.152
10	18.327 (1.710)	0.529 (2.883)**	-0.045 (0.414)	0.027 (0.551)	-0.022 (0.529)	-0.072 (1.351)		0.042	4.943	2.098
11	3.674 (0.312)	0.637 (3.476)**	-0.026 (0.243)	0.034 (0.708)	-0.015 (0.363)	-0.025 (0.467)	0.570 (2.707)**	0.089	4.824	3.061

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 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 Ogboi and Unuafe (2013). 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 similar to the findings of Al Omar and Al Mutairi (2008). Similarly, the beta coefficients for loan to deposit ratio are negative with return on equity. It indicates that loan to deposit ratio has a negative impact on return on equity. This finding is consistent with the findings of Suroso

(2022). Likewise, the beta coefficients for deposit growth are negative with return on equity. It indicates that deposit growth has a negative impact on return on equity. This finding contradicts with the findings of Kundid and Bilic (2016). Furthermore, the beta coefficients for asset growth are positive with return on equity which indicates that asset growth has a positive impact on return on equity. This finding is consistent with the findings of Gul et al. (2011). Likewise, the beta coefficients for debt to assets ratio are negative with return on equity. It indicates that debt to assets ratio has a negative impact on return on equity. This finding is similar to the findings of Nurlatipah et al. (2022).

4. Summary and conclusion

Commercial banks operate with a capital structure that significantly influences their ability to meet obligations to depositors and sustain profitability. The proportion of debt and equity financing in a bank's capital structure can be affected by various factors such as government policies, prevailing economic conditions, and internal management decisions. An imbalanced capital structure whether due to excessive leverage or insufficient equity, can weaken a bank's financial resilience and reduce its capacity to support lending activities. Therefore, commercial banks must carefully evaluate the determinants of their capital structure and adopt strategies that optimize the mix of debt and equity, thereby enhancing performance, strengthening stability, and contributing to the overall soundness of the financial system and the economy as a whole.

This study attempts to examine the impact of capital structure and growth on the profitability in Nepalese commercial banks. The study is based on secondary data of 16 commercial banks with 128 observations for the study period from 2016/17 to 2023/24.

The major conclusion of this study is that debt to equity ratio, asset growth and capital adequacy ratio have positive impact on return on equity. However, debt to assets ratio, deposit growth and loan to deposit ratio have negative impact on return on equity. Likewise, deposit growth and capital adequacy ratio have positive impact on return on assets. However, debt to assets ratio, debt to equity ratio, asset growth and loan to deposit ratio have negative impact on return on assets. The study also concluded that capital adequacy ratio is the most influencing factor that explains the changes in the return on asset in the context of Nepalese commercial banks. Similarly, the study also concluded that debt-to-equity ratio is the most influencing factor that explains the changes in the return on equity in the context of Nepalese commercial banks.

References

Abor, J., 2005. The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. *The Journal of Risk Finance 6*(5), 438-445.

Alarussi, A. S., and S. M. Alhaderi, 2018. Factors affecting profitability in Malaysia. *Journal of Economic Studies 45*(3), 442-458.

AL-Omar, H., and A. AL-Mutairi, 2008. Bank-specific determinants of profitability: The case of Kuwait. *Journal of Economic and Administrative Sciences 24*(2), 20-34.

Astuti, D., and A. A. Haerunnisa, 2025. The effect of capital structure and liquidity on profitability of pharmaceutical companies in 2020-2024. *Akrab Juara: Jurnal Ilmu-ilmu Sosial 10*(2), 639-650.

Ayalew, Z. A., 2021. Capital structure and profitability: Panel data evidence of private banks in Ethiopia. *Cogent Economics and Finance* 9(1), 195-206.

Bintara, R., 2020. The effect of profitability, capital structure and sales growth on stock return. *International*

Journal of Management Studies and Social Science Research 2(4), 231–245.

Bourke, P., 1989. Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of banking and Finance 13*(1), 65-79.

Brock, P. L., and L. R. Suarez, 2000. Understanding the behavior of bank spreads in Latin America. *Journal of development Economics 63*(1), 113-134.

Chaurasiya, S., Ghimire, S. R., and Shrestha, B., 2024. Leveraging capital structure for profitability: Insights from Nepal's commercial banks. *Management and Finance Bulletin* 2(1), 7–18.

Chronopoulos, D. K., H. Liu, F. J. McMillan, and J. O. Wilson, 2015. The dynamics of US bank profitability. *The European Journal of Finance 21*(5), 426-443.

Gill, A., N. Biger, and N. Mathur, 2011. The effect of capital structure on profitability: Evidence from the United States. *International Journal of Management*, *28*(4), 3-15.

Golubeva, O., 2021. Firms' performance during the COVID-19 outbreak: international evidence from 13 countries. *Corporate Governance: The International Journal of Business in Society 21*(6), 1011-1027.

Gul, S., F. Irshad, and K. Zaman, 2011. Factors Affecting Bank Profitability in Pakistan. *Romanian Economic Journal*, *14*(39), 201-215.

Haron, R., and N. M. Nomran, 2016. Determinants of working capital management before, during, and after the global financial crisis of 2008: Evidence from Malaysia. *The Journal of Developing Areas 50*(5), 461-468.

Iloska, N., 2014. Determinants of net interest margins-the case of Macedonia. *Journal of Applied Economics and Business 2*(2), 17-36.

Irawati, N., A. Maksum, I. Sadalia, and I. Muda, 2019. Financial performance of Indonesian's banking industry: the role of good corporate governance, capital adequacy ratio, non-performing loan and size. *International Journal of Scientific and Technology Research 8*(4), 22-26.

Isayas, Y. N., 2022. Determinants of banks' profitability: Empirical evidence from banks in Ethiopia. *Cogent Economics and Finance* 10(1), 203-214.

Juul Andersen, T., 2009. Effective risk management outcomes: exploring effects of innovation and capital structure. *Journal of Strategy and Management 2*(4), 352-379.

Khatri, D., 2024. Impact of capital structure and growth on the profitability of Nepalese commercial banks. *Nepalese Journal of Business* 11(4), 126–142.

Kundid, A., and B. Bilic, 2016. Do students in Croatia care about corporate social responsibility performance of banks? *Management: Journal of Contemporary Management Issues 21*(2), 223-248.

Mendell, B. C., T. Sydor, and N. Mishra, 2006. Capital structure in the United States forest products industry: The influence of debt and taxes. *Forest Science 52*(5), 540-548.

Mohanty, B. K., and R. Krishnankutty, 2018. Determinants of profitability in Indian banks in the changing scenario. *International Journal of Economics and Financial Issues 8*(3), 235-247.

Ngoc, N. M., Tien, N. H., and Thu, T. H., 2021. The impact of capital structure on financial performance of logistic service providers listed on Ho Chi Minh City Stock Exchange. *PalArch's Journal of Archaeology of Egypt/Egyptology* 18(2), 14-26.

Nguyen, H. T., and Nguyen, A. H., 2020. The impact of capital structure on firm performance: Evidence from Vietnam. *The Journal of Asian Finance, Economics and Business* 7(4), 97–105.

Nurlatipah, W. S., F. Rahman, and M. Toha, 2022. Analysis of financial ratios on the performance of Muamalat Indonesia Bank. *Majapahit Journal of Islamic Finance and Management 2*(1), 54-77.

Oberholzer, M., and G. Van der Westhuizen, 2004. An empirical study on measuring efficiency and profitability of bank regions. *Meditari: Research Journal of the School of Accounting Sciences 12*(1), 165-178.

Ogboi, C., and O. K. Unuafe, 2013. Impact of credit risk management and capital adequacy on the financial performance of commercial banks in Nigeria. *Journal of emerging issues in economics, finance and banking 2*(3), 703-717.

Ozgur, O., and M. S. Gorus, 2016. Determinants of deposit bank profitability: evidence from Turkey. *Journal of Applied Economics and Business Research 6*(3), 218-231.

Pham, N. H., T. M. Hoang, and N. T. H. Pham, 2022. The impact of capital structure on bank profitability: evidence from Vietnam. *Cogent Business and Management 9*(1), 209-216.

Qayyum, A., T. Hussain, and M. S. Khan, 2020. Determinants of Islamic Bank Profitability in Pakistan: Using Economic Value Added (EVA) Approach. *Paradigms 14*(2), 166-175.

Rosita, H., and N. Nuryaman, 2025. Factors influencing capital structure and its impact toward profitability in consumer goods manufacturing companies listed in the IDX for the 2019-2023 Period. *Journal of Accounting and Finance Management 5*(6), 1734-1747.

Shubita, M. F., and J. M. Alsawalhah, 2012. The relationship between capital structure and profitability. *International Journal of Business and Social Science 3*(16), 104-112.

Singh, N. P., and M. Bagga, 2019. The effect of capital structure on profitability: An empirical panel data study. *Jindal Journal of Business Research 8*(1), 65-77.

Staikouras, C. K., and G. E. Wood, 2004. The determinants of European bank profitability. *International Business and Economics Research Journal 3*(6), 114-124.

Suroso, S., 2022. Analysis of the effect of capital adequacy ratio and loan to deposit ratio on the profits of Go Public Banks in the Indonesia Stock Exchange (IDX) Period 2016–2021. *Economit Journal: Scientific Journal of Accountancy, Management and Finance 2*(1), 45-53.

Xu, J., 2012. Profitability and capital structure: Evidence from import penetration. *Journal of Financial Economics 106*(2), 427-446.

Zarrouk, H., K. Ben Jedidia, and M. Moualhi, 2016. Is Islamic bank profitability driven by same forces as conventional banks? *International Journal of Islamic and Middle Eastern Finance and Management 9*(1), 46-66.