Impact of Capital Structure and Growth on the Profitability of Nepalese Commercial Banks

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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 selected as the dependent variables. The selected independent variables are debt to equity ratio, debt to asset ratio, asset growth, deposit growth, loan to deposit ratio and capital adequacy ratio. The study is based on secondary data of 12 commercial banks with 108 observations for the period from 2013/14 to 2021/22. 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 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. However, deposit growth has a negative effect on return on equity and return on assets. It indicates that increase in deposit growth leads to decrease in return on equity and return on assets. In addition, loan to deposit ratio has a negative effect on return on equity. It indicates that increase in loan to deposit ratio leads to decrease in return on equity. Further, this study showed that there is a positive impact of capital adequacy ratio and return on assets. It means that larger capital adequacy ratio, higher would be the return on assets.

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

1. Introduction

The banking industry has been playing a significant role in the economy of the developing country as well as the whole world. The growth of the bank profitability is a very crucial indicator for each bank. Higher bank profitability helps the bank to perform better and grow faster among the competitors. Bank profitability is associated with bank capitalization, high lending activities, low credit risk and efficient cost management (Ramadan *et al*., 2011). Profitability in the banking world is very important for owners, depositors, government and society (Garcia-Herrero, 2009). Therefore, banks need to maintain profitability in order to remain stable or even increase. Profitability

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is important for banks and is used to measure the effectiveness of a bank in generating profits by utilizing its total assets (Oral and Yolalan, 1990). Capital structure is the framework of different types of financing employed by banks to acquire resources for its operations and growth; commonly it includes equity capital and long-term loan capital. The decision on capital structure is crucial for both managers and regulators as well as for the interest of shareholders. Therefore, banks must consider whether they want to increase the equity or debt capital in order to maximize shareholders' wealth. In addition to capital structure, growth is the main determinant of profitability. Asset growth, equity growth, deposit growth and loans growth affect the bank profits in both negative and positive way (Ngurah and Panji, 2021).

Anggari and Dana (2020) examined the effect of capital adequacy ratio, third party funds, loan to deposit ratio, bank size on the profitability in banking companies on IDX. The study found that loan to deposit ratio has a positive and insignificant effect on the profitability of banking companies. Ahamed (2017) investigated asset quality, non-interest income, and bank profitability. The results showed that private foreign banks earn more risk-adjusted profits compared to public sector and private domestic banks. Furthermore, the study found that income diversification benefits more to the banks that have lower asset quality compared to the banks that have higher asset quality. The study concluded that ensuring diversification activities enhances bank profitability, in particular for the banks that have lower asset quality. Ozgur and Gorus (2016) examined the determinants of deposit bank profitability. The result showed that equity over total assets, non-performing loans to total cash loans, net interest revenues to average total assets, and central bank policy interest rate have a significant impact over return on assets while non-interest income over total assets, market share of deposit banks in banking sector, operational expenses to average total assets, and exchange rate are not statistically significant. Isik *et al.* (2018) assessed the impact of size and growth decisions on Turkish banks' profitability. The result showed that there exists a nonlinear (concave) association between different size measures and profitability. In spite of the fact that growth rate tends to be positively associated with profitability, the impact of this variable is not statistically significant.

Qamara *et al.* (2020) examined the influence of current ratio, debt to equity ratio, and total asset turnover ratio on the profitability of transportation companies listed on Indonesia stock exchange. The results showed that current ratio and debt to equity ratio does not affect profitability (ROA). Manullang *et al.* (2020) investigated the effect of debt-to-equity ratio and current ratio to the probability of manufacturing companies. The results

of the study indicated that debt to equity ratio has insignificant effect on profitability. However, current ratio has significant effect on profitability (Return on asset). Tarigan *et al. (*2021) investigated the effect of debt-to-equity ratio and current ratio on earnings per share moderated by return on equity. The results showed that the liquidity ratio proxied by the current ratio has a positive and significant effect on earnings per share. Leverage ratio proxied by debt-to-equity ratio has a negative and significant effect on earnings per share. Similarly, Ayalew (2021) revealed that 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. Endri *et al.* (2021) found that debt to equity ratio has no relationship to return on assets and earning per share, while debt to assets ratio has a significant negative effect on return on asset and earnings per share. Moreover, long term debt to total equity has positive significant relationship to return on equity. Long term debt to total capital has negative significant relationship to return on asset, while return on equity and earnings per share have no relationship. Musah (2018) examined the impact of capital structure on profitability of commercial banks in Ghana. The regression result showed that total debt ratio was positively associated with profitability of Banks in Ghana. The results showed that commercial banks in Ghana reliance on short term financing (deposits) reduces banks profitability. The results showed that the right mix of short term and long-term debt that will maximize profitability of bank.

Hafidh (2022) examined the effect of capital structure on the banks' performance. The results of the analysis showed that the two independent variables (short term debt to equity ratio and equity to total asset ratio) have the positive and significant relationship with return on assets. However, long term debts to total assets have a negative and significant relationship with return on assets. Meng and Ugut (2022) analyzed the commercial bank performance in Indonesia and China. The results showed that loan to deposit ratio, assets growth and debt to assets have positive and significant influences on return on assets, while debt to assets and capital adequacy ratio have positive significant relationship with return on equity in Indonesian banks. Only assets growth has a negative significant impact on both return on assets and return on equity. Debt to assets and capital adequacy ratio have positive significant impact on return on assets, while loan to deposit ratio has significant relationship on return on equity in the context of commercial banks in China. Hassan and Ali (2023) examined the determinants of the

capital structure. The results of the study showed that size, profitability, and investment opportunities available to the bank are positively related to the debt ratio (financial leverage). Conversely, liquidity proportion is negatively associated with the debt ratio. The study revealed that assets tangibility and assets growth did not show any relationship with the bank debt ratios.

In context of Nepal, Budhathoki *et al.* (2020) investigated the impact of liquidity, leverage, and total assets size of the bank on profitability. The study showed that higher equity to assets ratio (lower leverage) positively affect two profitability measures, ROA and NIM, and was statistically significant but was negatively related to ROE and statistically insignificant. Likewise, Tiwari *et al*. (2022) assessed the effect of financial ratios, firm size and cash flow from operating activities on the profitability of Nepalese commercial banks. The study showed that liquidity and CAR have positive impact on return on assets of Nepalese commercial banks. Similarly, firm size, cash flow from operating activities, liquidity and leverage have positive impact on return on equity. However, firm size, cash flow from operating activities, leverage and non-performing loans have negative impact on return on assets. In addition, Pradhan and Kafle (2021) examined the impact of capital structure on the profitability of Nepalese commercial banks. The study found that there is significant positive relation between bank size and return on assets.

The above discussion shows that empirical evidences vary greatly across the studies on the impact of impact of capital structure and growth on bank profitability. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The main purpose of the study is to analyze the impact of capital structure and growth on the profitability of Nepalese commercial banks. Specifically, it examines the relationship of debt equity ratio, debt to asset ratio, asset growth, deposit growth, loan to deposit ratio and capital adequacy ratio with return on assets and return on equity of Nepalese commercial banks.

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

2. Methodological aspects

The study is based on the secondary data which were collected from 12 Nepalese commercial banks for the study period from 2013/14 to 2021/22, leading to a total of 108 observations. The study has employed purposive

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
	Public Banks		
1	Nepal Bank Limited	2013/14 – 2021/22	9
2	Agricultural Development Bank Limited	2013/14 – 2021/22	9
3	Rastriya Banijya Bank Limited	2013/14 – 2021/22	9
	Joint Venture Banks		
4	NMB Bank Limited	2013/14 – 2021/22	9
5	Everest Bank Limited	2013/14 – 2021/22	9
	Private Banks		
6	NIC Asia Bank Limited	2013/14 – 2021/22	9
7	Machhapuchchhre Bank Limited	2013/14 – 2021/22	9
8	Sanima Bank Limited	2013/14 – 2021/22	9
9	Prime Bank Limited	2013/14 – 2021/22	9
10	Siddhartha Bank Limited	2013/14 – 2021/22	9
11	Nepal SBI Bank Limited	2013/14 – 2021/22	9
12	Laxmi Bank Limited	2013/14 – 2021/22	9
Total number of observations			**108**

Thus, the study is based on 108 observations.

The model

The model used in this study assumes that the profitability depends upon 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 equity ratio, debt to asset ratio, asset growth, deposit growth, loan to deposit ratio and capital adequacy ratio. Therefore, the model takes the following form:

Profitability = f (DER, DAR, LDR, CAR, AG and DG)

More specifically,

$ROA = ß_{0+} ß_1 DER + ß_2 DAR + ß_3 LDR + ß_4 CAR + ß_5 AG + ß_6 DG +_{it}$

$ROE = ß_0 + ß_1 DER + ß_2 DAR + ß_3 LDR + ß_4 CAR + ß_5 AG + ß_6 DG +_{it}$

Where,

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

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

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

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

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

CAR = Capital adequacy ratio as measured by the ratio of Tier I capital + Tier II capital to total risk weighted assets, in percentage.

AG = Assets growth as measured by ratio of assets growth to total assets, in percentage.

DG = Deposit growth as measured by ratio of total deposit growth to total assets, in percentage.

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

Debt to equity ratio

Profitability is negatively correlated to debt-to-equity ratio of Nigerian deposit money banks (Otekunrin *et al.*, 2020). Similarly, Shah and Khan (2007) stated that debt to equity ratio is negatively related to bank performance. Likewise, Taani (2013) found that the bank performance, which is measured by net profit, return on capital employed and net interest margin is significant and negatively related total debt to equity ratio. Likewise, Rahman *et al.* (2019) revealed that long term debt to assets and debt to equity ratio have negative impact on the profitability of the banks. Based on it the study develops the following hypothesis:

H_1: There is a negative relationship between debt-to-equity ratio and profitability.

Debt to assets ratio

Total debt to total assets indicates the extent to which total assets are financed by debtsGill *et al*. (2011) indicated that debt to total assets ratio

has a negative impact on profitability. Likewise, Sathyamoorthi *et al.* (2020) examined the financial risk management practices on financial performance of commercial banks in Botswana. The study showed that there is negative relationship between debt to assets and profitability. Similarly, Ulzanah and Murtaqi (2015) revealed that debt to equity ratio has a negative significant impact towards profitability (ROA). Abubakar (2015) found debt-equity ratio and return on equity (ROE) a proxy for financial performance is significantly negatively related. Based on it, the study develops the following hypothesis:

H_2: There is negative relationship between debt to assets ratio and profitability.

Asset growth

Mei (2019) examined the credit risk and bank profitability of commercial banks in Ghana. The study showed that assets growth ratio has a statistically significant positive connection with firm's profitability measured by return on assets. Likewise, Sulistiana *et al*. (2023) revealed that assets growth has a positive and significant effect on bank's profitability. Al Ali (2019) showed that assets growth has positive and insignificant effect on profitability. Nguyen and Liu (2020) showed that there is positive impact of asset growth on bank's profitability. Based on it, the study develops the following hypothesis:

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

Deposit growth

Begum *et al.* (2022) investigated the effect of liquidity management on the profitability of Bangladesh banks. The study found that capital adequacy ratio and bank deposits have a positive and statistically significant influence on the performance of the bank. Likewise, Wuave *et al.* (2020) examined the effect of liquidity management on financial performance of banks in Nigeria. The study found that liquidity ratio (LQR) and bank deposits have positive and significant effect on financial performance. In addition, Thi Thanh Tran and Phan (2020) examined the relationship between bank size, credit risk and profitability of Vietnam's commercial banks. The result revealed that bank size and bank deposits have positive impact on profitability. Based on it, the study develops the following hypothesis:

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

Loan to deposit ratio

Loan to deposit ratio is the most important ratio to measure the liquidity condition of the bank. Suroso (2022) showed that loan to deposit ratio has a negative effect on ROA and ROE. Similarly, Vellanita *et al.* (2019) revealed a negative relationship between loan to deposit ratio and return on equity.

Likewise, Golubeva *et al.* (2019) showed that loan to deposit ratio has a negative relationship with return on equity. In addition, Mohanty and Krishnankutty (2018) showed that return on asset has a negative and significant relationship with loan to deposit ratio. Moreover, Mehta and Bhavani (2017) concluded that loan to deposit ratio is negatively related to return on assets and return on equity. Based on it, this study develops the following hypothesis:

H_5: There is a negative relationship between loan to deposit and profitability.

Capital adequacy ratio

Capital adequacy requirement improves the soundness and safety of the banking sector and consequently its profitability. Moussa (2015) found that there is a positive relationship between capital and financial performance. Kosmidou (2008) revealed that capital adequacy has a positive association with banks' profitability. Agbeja *et al*. (2015) showed that there is a positive relationship between capital adequacy ratio and bank's profitability. Nguyen (2020) explored the impact of capital adequacy on bank profitability in the context of Vietnam. The study showed that bank capital adequacy has a positive impact on return on assets of small-sized banks in Vietnam. Moreover, Ikpefan (2013) examined capital adequacy, management and performance in the Nigerian commercial bank. The study found that capital adequacy ratio has a positive impact on return on assets. Based on it, this study develops the following hypothesis:

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

3. Result and discussion

Descriptive statistics

Table 2 present the descriptive statistics of selected dependent and independent variables during the period of 2013/14 to 2021/22.

Table 2

Descriptive statistics

This table shows the descriptive statistics of dependent and independent variables of 12 Nepalese commercial banks for the study period from 2013/14 to 2021/22. 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 DER (Debt to equity ratio as measured by total debt to total equity, in percentage), DAR (Debt to assets ratio as measured by total debt to total assets, in percentage), AG (Assets growth as measured by ratio of assets growth to total assets, in percentage.), DG (Deposit growth as measured by ratio of total deposit growth to total assets, in percentage), LDR (Loan to deposit ratio as measured by the ratio of total loan to total deposits, in percentage) and CAR (Capital adequacy ratio as measured by the ratio of

Tier I capital + Tier II capital to total risk weighted assets, in percentage).

Variables	Minimum	Maximum	Mean	Std. Deviation
ROE	0.87	76.96	14.72	9.60
ROA	0.16	3.57	1.47	0.56
DER	0.22	92.03	9.81	8.91
DAR	0.75	6.49	0.98	0.55
AG	-2.96	83.08	20.89	13.63
DG	-6.45	83.66	19.43	13.69
LDR	0.53	1.09	0.84	0.10
CAR	4.55	20.41	13.27	2.44

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 coefficient matrix

This table shows the bivariate Pearson's correlation coefficients of dependent and independent variables of 12 Nepalese commercial banks for the study period from 2013/14 to 2021/22. 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 DER (Debt to equity ratio as measured by total debt to total equity, in percentage), DAR (Debt to assets ratio as measured by total debt to total assets, in percentage), AG (Assets growth as measured by ratio of assets growth to total assets, in percentage.), DG (Deposit growth as measured by ratio of total deposit growth to total assets, in percentage), LDR (Loan to deposit ratio as measured by the ratio of total loan to total deposits, in percentage) and CAR (Capital adequacy ratio as measured by the ratio of Tier I capital + Tier II capital to total risk weighted assets, in percentage).

Variables	ROE	ROA	DER	DAR	AG	DG	LDR	CAR
ROE	1							
ROA	0.477**	1						
DER	0.069	-0.122	1					
DAR	0.125	0.024	0.926**	1				
AG	-0.021	-0.067	-0.06	-0.094	1			
DG	-0.007	-0.073	-0.03	-0.069	0.939**	1		
LDR	-0.499**	-0.020	-0.215*	-0.135	0.066	0.045	1	
CAR	-0.465**	0.128	-0.253**	-0.141	-0.146	-0.150	0.487**	1

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

Table 3 shows that debt to equity ratio has a positive relationship

with return on equity. It means that increase in debt-to-equity ratio leads to increase in return on equity. Likewise, there is a positive relationship between debt to asset ratio and return on equity. It means that increase in debt to asset ratio leads to increase in return on equity. In contrast, there is a negative relationship between assets growth and return on equity. It shows that higher the assets growth, lower would be the return on equity. However, there is a negative relationship between deposit growth and return on equity. It indicates that increase in deposit growth leads to decrease in return on equity. In addition, loan to deposit ratio has a negative relationship with return on equity. It indicates that increase in loan to deposit ratio leads to decrease in return on equity. Further, this study shows that there is a negative relationship between capital adequacy ratio and return on equity. It means that increase in capital adequacy ratio leads to decrease in return on equity.

Similarly, the result also shows that debt to equity has a negative relationship with return on assets. It means that increase in debt to equity leads to decrease in return on assets. Likewise, there is a positive relationship between debt to asset ratio and return on assets. It means that increase in debt to asset ratio leads to increase in return on assets. In contrast, assets growth has a negative relationship with return on assets. It shows that higher the assets growth, lower would be the return on assets. However, there is a negative relationship between deposit growth and return on assets. It indicates that increase in deposit growth leads to decrease in return on equity. In addition, loan to deposit ratio has a negative relationship with return on assets. It indicates that increase in loan to deposit ratio leads to decrease in return on assets. Further, this study shows that there is a positive relationship between capital adequacy ratio and return on assets. It means that larger capital adequacy ratio, higher would be the return on assets.

Regression analysis

Having indicated the Pearson's correlation coefficients, the regression analysis has been carried out and results are presented in Table 4 and Table 5. More specifically, Table 4 shows the regression results of debt-to-equity ratio, debt to assets ratio, assets growth, deposit growth, loan to deposit ratio and capital adequacy ratio with return on equity and return on assets.

Table 4

Estimated regression results of debt-to-equity ratio, debt to assets ratio, assets growth, deposit growth, loan to deposit ratio and capital adequacy ratio with return on equity

The results are based on panel data of 12 commercial banks with 108 observations for the study period from 2013/14 to 2021/22 by using linear regression model. The model is ROE_{it}

$= \beta_0 + \beta_1 DER_{it} + \beta_2 DAR_t + \beta_3 AG_t + \beta_4 DG_{it} + \beta_5 LDR + \beta_6 CAR_t + e_{it,}$ 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 DER (Debt to equity ratio as measured by total debt to total equity, in percentage), DAR (Debt to assets ratio as measured by total debt to total assets, in percentage), AG (Assets growth as measured by ratio of assets growth to total assets, in percentage), DG (Deposit growth as measured by ratio of total deposit growth to total assets, in percentage), LDR (Loan to deposit ratio as measured by the ratio of total loan to total deposits, in percentage) and CAR (Capital adequacy ratio is measured by the ratio of Tier I capital + Tier II capital to total risk weighted assets, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		DER	DAR	AG	DG	LDR	CAR			
1	13.993 (10.136)**	0.75 (0.714)						0.050	9.623	0.510
2	12.593 (6.683)**		2.157 (1.297)					0.006	9.570	1.682
3	15.038 (8.824)**			-0.015 (0.219)				0.009	9.644	0.48
4	14.821 (9.170)**				-0.005 (0.073)			0.009	9.646	0.005
5	54.890 (8.035)**					-47.736 (5.921)**		0.241	8.362	35.053
6	38.988 (8.553)**						-1.828 (5.411)**	0.209	8.538	29.280
7	10.898 (4.739)**	0.350 (1.278)	7.341 (1.675)					0.012	9.542	1.663
8	10.910 (3.816)**	0.350 (1.268)	7.338 (1.658)	-0.001 (0.007)				0.003	9.588	1.098
9	10.937 (3.809)**	0.356 (1.285)	7.400 (0.099)	-0.074 (0.711)	-0.078 (0.695)			0.005	9.627	0.855
10	54.394 (7.640)**	0.740 (3.060)**	11.837 (3.107)**	-0.017 (0.103)	-0.047 (0.283)	-53.140 (6.492)**		0.282	8.137	9.388
11	61.557 (9.045)**	0.972 (4.218)**	14.657 (4.073)**	-0.065 (0.418)	-0.049 (0.317)	-36.914 (4.348)**	-1.531 (4.239)**	0.384	7.535	12.121

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 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 Taani (2013). Similarly, the beta coefficients for debt to assets are positive with return on equity. It indicates that debt to asset ratio has a positive impact on return on equity. This finding is consistent with the findings of Sathyamoorthi *et al.* (2015). Likewise, the beta coefficients for assets growth are negative with return on equity. It indicates that assets growth has a negative impact on return on equity. This finding is consistent with the findings of Sulistiana *et al*. (2023). Moreover, 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 is consistent with the findings of Thi Thanh Tran and Phan (2020). 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 similar to the findings of Vellanita *et al.* (2019).

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

Table 5

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

The result are based on panel data of 12 commercial banks with 108 observations for the study period from 2013/14 to 2021/22 by using linear regression model. The model is $ROA_{it} = \beta_0 + \beta_1 DER_{it} + \beta_2 DAR_t + \beta_3 AG_t + \beta_4 DG_{it} + \beta_5 LDR + \beta_6 CAR_t + e_{it,}$ where the dependent variable is ROA (Return on asset as measured by the ratio of net profit to total asset, in percentage). The independent variables are DER (Debt to equity ratio as measured by total debt to total equity, in percentage), DAR (Debt to assets ratio as measured by total debt to total assets, in percentage), AG (Assets growth as measured by ratio of assets growth to total assets, in percentage.), DG (Deposit growth as measured by ratio of total deposit growth to total assets, in percentage), LDR (Loan to deposit ratio as measured by the ratio of total loan to total deposits, in percentage) and CAR (Capital adequacy ratio is measured by the ratio of Tier I capital + Tier II capital to total risk weighted assets, in percentage).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		DER	DAR	AG	DG	LDR	CAR			
1	1.550 (19.130)**	-0.008 (1.266)						0.006	0.564	1.604
2	1.450 (12.947)**		0.024 (0.244)					0.009	0.568	0.059
3	1.532 (15.269)**			-0.003 (0.689)				0.050	0.567	0.474
4	1.532 (16.114)**				-0.003 (0.751)			0.004	0.567	0.564
5	1.571 (3.380)**					-0.115 (0.210)		0.009	0.568	0.044
6	1.081 (3.589)**						0.030 (1.325)	0.007	0.564	1.755
7	1.140 (8.952)**	-0.064 (4.218)**	0.972 (4.003)**					0.129	0.528	8.929
8	1.179 (7.451)**	-0.063 (4.160)**	0.961 (3.924)**	-0.002 (-0.414)				0.122	0.530	5.963
9	1.179 (7.411)**	-0.063 (4.128)**	0.961 (3.900)**	-0.001 (0.069)	-0.001 (0.078)			0.114	0.533	4.431
10	1.710 (3.674)**	-0.068 (4.309)**	1.015 (4.064)**	-6.867 (0.006)	-0.001 (0.112)	-0.650 (1.215)		0.118	0.532	3.856
11	1.634 (3.391)**	-0.066 (4.021)**	0.986 (3.868)**	0.000 (0.040)	-0.001 (0.114)	-0.823 (1.369)	0.016 (0.637)	0.113	0.533	3.262

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 5 shows that 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 equity. This finding is similar to the findings of Rahman *et al.* (2019). Similarly, the beta coefficients for debt to assets are positive with return on assets. It indicates that debt to asset ratio has a positive impact on return on equity This finding is consistent with the findings of Ulzanah and Murtaqi (2015). Likewise, the beta coefficients for assets growth are negative with return on assets. It indicates that assets growth has a negative impact on return on assets. This finding is consistent with the findings of Nguyen and Liu (2020). Moreover, 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 Ikpefan (2013).

4. Summary and conclusion

The capital structure decision is one of the most important decisions made by financial managers in this modern era. The capital structure decision is at the center of many other decisions in the area of corporate finance and banks. Banking system plays a crucial role in promoting growth of an economy and the predominant role of capital ratios in prudential regulation that helps to understand the factors which drive the capital structure decision of banks. Banks play a pivotal role in the shaping up of the economy of a country, given the relationship between the wellbeing of the banking sector and the growth of the economy. In recent years, banking has developed into a crucial component that helps people with their finances, and it is becoming more and more active every day.

This study attempts to analyze the impact of capital structure and growth on the profitability of Nepalese commercials banks. The study is based on secondary data of 12 commercial banks with 108 observations for the period from 2013/14 to 2021/22.

The study showed that debt to equity ratio and debt to asset ratio have positive impact on return on equity of commercial banks of Nepal. However, asset growth, deposit growth, loan to deposit ratio and capital adequacy ratio have negative impact on return on equity. On the other hand, the results shows that debt to asset ratio and capital adequacy ratio have positive impact on return on assets of commercial banks of Nepal. Commercial banks with higher debt ratios tend to have higher ROEs. This is because debt is a cheaper source of capital than equity, so using more debt to finance a bank's assets can increase the bank's profits. However, it is important to note that there is

a risk associated with using too much debt, as the bank may not be able to repay its debts if its profits decline. The study concluded that loan to deposit ratio and capital adequacy ratio are the most influencing factor that explains the changes in return on equity in context of Nepalese commercial banks. The study also concluded that debt to asset ratio is the most influencing factor that explains the changes in the return on asset of Nepalese commercial banks.

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