Impact of Equity Capital on the profitability of Nepalese Commercial Banks

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Abstract

This study examines the impact of equity capital on the profitability of Nepalese commercial banks. Return on assets and return on equity are the selected dependent variables. The selected independent variables are capital adequacy ratio, equity to assets ratio, debt ratio, deposit to assets ratio, loan to deposit ratio and bank size. The study is based on secondary data of 13 commercial banks with 104 observations for the study period from 2015/16 to 2022/23. 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 equity capital on the profitability of Nepalese commercial banks.

The results showed that bank size has a positive impact on return on assets and return on equity. It means that increase in bank size leads to increase in return on assets and return on equity. Similarly, capital adequacy ratio has a positive impact on return on assets and return on equity. It means that increase in capital adequacy ratio leads to increase in return on assets and return on equity. In contrast, deposit to assets ratio has a negative impact on return on assets and return on equity. It means that increase in deposit to assets ratio leads to decrease in return on assets and return on equity. Likewise, debt ratio has a negative impact on return on assets and return on equity. It shows that higher the debt ratio, lower would be the return on assets and return on equity. Moreover, loan to deposit ratio has a positive impact on return on assets and return on equity. It indicates that increase in loan to deposit ratio leads to increase in return on assets and return on equity. Further, equity capital ratio has a positive impact on return on assets and return on equity. It indicates that increase in equity capital ratio leads to increase in return on assets and return on equity.

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

1. Introduction

Equity capital plays a crucial role in the effective management of various types of risks, including credit risk, market risk, and operational risk.

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By providing a buffer, equity capital helps banks manage these risks without jeopardizing their solvency. Adequate equity capital enhances depositor confidence. When depositors believe that a bank has sufficient capital to cover potential losses, they are more likely to trust the bank and continue their relationship with it. The stability of the banking system and the adequacy of equity capital are essential for the effective functioning of the overall financial system. They ensure financial stability, promote confidence and trust, support effective risk management, facilitate regulatory compliance, and contribute to economic growth. A robust equity capital base is vital for maintaining the health and resilience of the banking sector and, by extension, the broader financial system and economy (Mokhova et al., 2018).

The capital in the banking industry serves critical functions by absorbing losses, enhancing depositor confidence, signaling the bank's risk appetite, and providing a cost-effective means of financing. These roles are vital for the stability and efficiency of both individual banks and the broader financial system. Banks aim to balance debt and equity in their capital structure to optimize financing costs while meeting regulatory requirements and maintaining financial stability. Capital in the banking industry plays a multifaceted role, much like in other for-profit businesses, but with some distinct characteristics that are crucial for the banking sector. Capital acts as a cushion to absorb losses that arise from the bank's operations. When a bank incurs losses, these are first absorbed by the bank's capital, protecting depositors and other creditors from losses. Adequate capital levels help build depositor confidence, as it signals the bank's ability to absorb unexpected losses and continue operations smoothly. High capital levels reassure depositors that their funds are safe (Anvarovich, 2022). Capital serves as a financial buffer to absorb losses from bad loans, operational failures, or other unforeseen events. This is essential for maintaining the bank's solvency and ensuring that it can continue to operate even in times of financial distress. The capital held by a bank reflects its capacity to bear risks. Higher capital levels enable banks to undertake more substantial lending and investment activities by providing a cushion against potential losses. This capability is crucial for the bank's growth and profitability. capital is one of the most important conditions for a commercial bank to conduct business. It acts as a foundation for regulatory compliance, loss absorption, risk management, depositor and market confidence, operational stability, and compliance with financial supervision. Without adequate capital, a bank cannot effectively function or maintain the trust of its customers and stakeholders. Bank capital is also a main source of

capital in the economy. A commercial bank's operation is fundamentally the same as that of a business. The primary goal of the corporation is to maximize shareholder wealth, so the issue of bank profitability is always a problem in achieving this goal because profitability is a key component in stock prices and influences bank investor decisions. The capital of a bank, among other things, has an impact on its profitability (Ha, 2020).

The structure and administration of capital in a commercial bank is a critical issue and a top priority, not only for the benefit of the bank's customers but also for the sake of the banking industry's whole economy and the development of a country (Altunbas et al., 2007). The effective management of capital not only benefits the bank's customers but also has far-reaching implications for the banking industry, the overall economy, and the development of a country. Proper capital management ensures the bank's stability and solvency, which is essential for maintaining trust among depositors and investors. A well-capitalized bank is better positioned to withstand financial shocks and economic downturns. Well-capitalized banks can more effectively extend credit to businesses and individuals, which is crucial for economic growth and development. By providing loans and financing, banks support entrepreneurship, job creation, and infrastructure development. A bank's capital structure influences its creditworthiness and the terms on which it can borrow in the interbank market. Strong capital positions lead to better borrowing terms and lower costs, which can be passed on to customers through better rates and services. The structure and administration of capital in a commercial bank are of paramount importance not only for the bank's customers but also for the stability and health of the entire banking sector, the economy, and the country's development. Proper capital management supports financial stability, regulatory compliance, economic growth, customer confidence, risk management, and overall industry competitiveness. A commercial bank is a specific sort of business that deals with money and credit, so capital is one of the most important conditions for a bank to do business (Saleh and Afifa, 2020).

Equity ownership is sometimes interrelated with corporate governance and capital structure because the board of directors and shareholders together may decide not to further fragment the ownership of the firm by issuing new shares, which, in turn, will steer the request for funding toward other solutions. Large shareholders play a positive role in capital markets by lowering monitoring costs and thus reducing the agency costs of debt. Muller (2008) suggested that company growth and capital structure are immediately

affected by ownership due to their finding that owners who want to stay in control may give up growth opportunities. Chowdhury (2015) assessed the effect of increasing equity capital in domestic banks of the United Arab Emirates (UAE). The study also examined whether the relationship differs by bank size particularly at the time of financial crisis. The results exhibited that increasing equity capital improves bank profitability in the UAE, and thus high equity capital is a critical value-driver for UAE banks. The evidence also showed that the Dubai debt crisis had an insignificant effect on bank performance. The study, however, do not find significant evidence that high equity capital of domestic banks is used as a buffer to absorb financial shock. Georgakopoulos et al. (2022) analyzed the interrelation between capital structure, corporate governance, equity ownership, and how they affect firm performance of 10 leading-energy-sector companies traded in the NYSE. The impact of the key parameters of capital structure, corporate governance, and equity ownership was tested using regression analysis (panel data method) on firm performance, measured by profitability. The results support a significant relation among major capital structure and corporate governance parameters and firm performance, whereas no evidence was found to support a significant impact of equity ownership on the dependent variable. Furthermore, the findings support that pecking order and agency cost theories play an important role in the financing of these firms, while static trade and irrelevance theory find no support.

Quoc and My (2023) examined the effect of bank capital on bank profitability using data gathered from 22 Vietnam commercial banks from 2011 to 2020, employing Pooled OLS, FEM, REM, and GMM methodologies. The results showed that bank capital has a negative relationship with bank profitability. Bank profitability is also positively affected by bank size, credit risk, credit growth, and capital adequacy ratio. From 2008 to 2019, Thanh Xuan et al (2021) examined the effect of equity capital on the profitability of 24 Vietnamese commercial banks. The findings showed that the equity capital ratio (CAP) has a statistically significant positive effect on the ROA while having a negative effect on the ROE. Between 2013 and 2019, the CAP variable has a positive effect on the ROA and ROE, indicating that banks with a larger equity capital ratio achieved higher profitability. Furthermore, the deposits-to-assets ratio and loan-loss reserves ratio both have a negative effect on both proxies for bank profitability, although bank size has a negligible effect on bank profits in the majority of circumstances. Additionally, the rate of GDP growth and inflation have a beneficial effect on the bank's profitability. Chan

and Karim (2010) analysed the effects of profitability and equity capital on bank efficiency of commercial banks in the developing countries. To achieve the objectives, the stochastic frontier approach is used in the first stage of the analysis to obtain cost and profit efficiency scores. In the second stage, the efficiency scores obtained are regressed with a measure of bank's equity capital and profitability by using the Tobit regression model. The results showed that equity to total assets ratio has a negative effect on efficiency indicating that either the use of debts in financing bank operations or less regulatory condition contribute to higher efficiency. The results also found that return on assets have a positive effect on profit efficiency suggesting the needs for efficient utilization of banks assets.

In the context of Nepal, Gautam (2019) identified that credit to deposit ratio is positively related to return on assets and return on equity but it is not statistically significant. Further, the study found that non-performing loans has a positive and significant relationship with return on assets but negative and insignificant relationship with return on equity of Nepalese commercial banks. In addition, Shahi (2023) concluded that loan ratio followed by capital adequacy ratio and GDP growth rate is the most influencing factor that explains the changes in the profitability in terms of return on assets.

The above discussion shows that empirical evidences vary greatly across the studies on the effect of equity capital on bank's 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 effect of equity capital on the profitability of Nepalese commercial banks. More specifically, the study examines the effect of capital adequacy ratio, equity to assets ratio, debt ratio, deposit to assets ratio, loan to deposit ratio and bank size on the 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 section draws the conclusion.

2. Methodological aspects

The study is based on the secondary data which were collected from 13 Nepalese commercial banks for the study period from 2015/16 to 2022/23,

leading to a total of 104 observations. The study employed convenience sampling method. The main sources of data collected from the Bank Supervision Report published by Nepal Rastra Bank (NRB) and annual reports of the selected commercial banks. This study is based on descriptive as well as causal comparative research designs. Table 1 shows the list of commercial banks selected for the study along with the study period and number of observations.

Table 1

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

S . N.	Name of the commercial banks	Study period	Observations
1	Siddharth Bank Limited	2015/16 - 2022/23	8
2	Citizens Bank International Limited	2015/16 - 2022/23	8
3	Standard Chartered Bank Nepal Limited	2015/16 - 2022/23	8
4	Himalayan Bank Limited	2015/16 - 2022/23	8
5	Rastriya Banijya Bank Limited	2015/16 - 2022/23	8
6	Prime Commercial Bank Limited	2015/16 - 2022/23	8
7	Everest Bank Limited	2015/16 - 2022/23	8
8	NMB Bank Limited	2015/16 - 2022/23	8
9	Nepal SBI Bank Limited	2015/16 - 2022/23	8
10	Agricultural Development Bank Limited	2015/16 - 2022/23	8
11	Machhapuchchhre Bank Limited	2015/16 - 2022/23	8
12	Sanima Bank Limited	2015/16 - 2022/23	8
13	Nepal Bank Limited	2015/16 - 2022/23	8
Total number of observations			**104**

Thus, the study is based on 104 observations.

The model

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

$$ROA_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 EAR_{it} + \beta_3 CAR_{it} + \beta_4 DAR_t + \beta_5 BS_{it} + \beta_6 LDR_{it} + e_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 EAR_{it} + \beta_3 CAR_{it} + \beta_4 DAR_t + \beta_5 BS_{it} + \beta_6 LDR_{it} + e_{it}$$

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 shareholders' equity, in percentage.

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

EAR = Equity capital ratio is measured by the ratio of total equity to total assets, in percentage.

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

DAR= Deposit to assets ratio as measured by the ratio of total deposits to total assets, in percentage.

BS = Bank size as measured by total assets, Rs. in billion.

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

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

Debt ratio

Obamuyi (2012) determined the relationship of different bank specific and macro-economic variable with profitability of 20 commercial banks of Nigeria using employed fixed effect model. The study reported that bank capital, size, interest income and expense management efficiency and favorable economic conditions contribute to higher bank performance and growth. However, debt ratio and nonperforming loans have negative influence on bank growth. Abbadi and Abu-Rub (2012) found that that leverage negatively

and significantly affects banks' profitability. Bunyaminu et al. (2021) also concluded that there is a negative relationship between profitability and leverage ratio. Based on this, this study develops the following hypothesis:

H_1: There is a negative relationship between debt ratio and bank profitability.

Equity capital ratio

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 total debt and total equity ratios on firm's profitability. Chowdhury (2015) examined the equity capital and bank profitability of the United Arab Emirates. The study revealed that there is a positive relationship between equity capital and bank profitability due to the numerous benefits that adequate capital provides in terms of risk management, operational stability, regulatory compliance, market confidence, financial flexibility, and long-term sustainability. Bace (2016) stated that strong equity capital supports consistent and stable earnings over time, as the bank can better weather economic cycles and downturns. This stability is attractive to investors and can lead to a higher valuation. Based on this, this study develops the following hypothesis:

H_2: There is a positive relationship between equity capital and bank profitability.

Capital adequacy ratio

Jadhav et al. (2021) found that capital adequacy ratio has a positive impact on profitability. Likewise, Ebenezer et al. (2017) stated that CAR has a positive and significant effect on bank profitability. In addition, Olalekan and Adeyinka (2013) showed a positive and significant relationship between capital adequacy and profitability of bank. Fidanoski et al. (2018) reported a positive impact of capital adequacy ratio on bank profitability. These findings suggested that higher capital adequacy is associated with increased profitability, as it enhances the perceived safety of banks. Based on this, this study develops the following hypothesis:

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

Deposit to assets ratio

Hirindu Kawshala (2009) examined the effect of bank specific factors of profitability in Sri Lankan domestic commercial banks. The study revealed that capital ratio and deposit ratio are significant bank specific determinants of bank profitability in Sri Lanka. There is a positive relationship between those factors and bank profitability. Moreover, Sari and Septiano (2004) found a significant positive relationship between deposit ratio and profitability. Ramchandani and Jethwani (2016) assessed the effect of credit deposit ratio on the profitability of commercial banks of India. The study argued that deposit ratio has a positive impact on profitability measured by net interest margin and return on assets. Based on this, this study develops the following hypothesis:

H_4: There is a positive relationship between deposit to asset ratio and bank profitability.

Bank size

Kapaya and Raphael (2016) assessed the effects of bank-specific, industry-specific, and macroeconomic determinants on banks' profitability. The study argued that bank size has a positive impact on profitability measured by net interest margin and return on assets. Mule et al. (2015) examined corporate size, profitability and market value using an econometric panel analysis of listed firms in Kenya. The study revealed that there is a positive significant relationship between firm size and profitability implying that a unit change in firm size leads to an increase in return on equity of firms. Sufian and Habibullah (2009) examined the determinants of the profitability of the Chinese banking sector during the post-reform period of 2000–2005. The study revealed that the more diversified and relatively better capitalized CITY tends to exhibit higher profitability levels. Based on this, this study develops the following hypothesis:

H_5: There is a positive relationship between bank size and bank profitability.

Loan to deposit ratio

Suroso (2022) analyzed the effect of capital adequacy ratio (CAR) and loan to deposit ratio (LDR) on the profits of public banks in the Indonesia stock exchange. The study identified that loan to deposit ratio has a positive effect on profitability. In addition, Lukorito et al. (2014) found that loan to deposit ratio has a statistically significant and positive relationship with

banks' profitability. Likewise, Marozva (2015) found that there is a positive relationship between loan to deposit ratio and return on assets. Based on this, this study develops the following hypothesis:

H_6: There is a positive relationship between loan to deposit 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 2015/16 to 2022/23.

Table 2

Descriptive statistics

This table shows the descriptive statistics of dependent and independent variables of 13 Nepalese commercial banks for the study period from 2015/16 to 2022/23. 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 total 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), DR (Debt ratio as measured by the ratio of total debt to total assets ratio, in percentage), EAR (Equity capital ratio is measured by the ratio of total equity to total assets, in percentage), DAR (Deposit to assets ratio as measured by the ratio of total deposits to total assets, in percentage), BS (Bank size as measured by total assets, Rs. in billion) and LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage).

Variables	Minimum	Maximum	Mean	Std. Deviation
ROA	0.47	2.79	1.58	0.51
ROE	3.78	23.38	13.82	4.58
CAR	10.20	22.99	14.31	2.46
EAR	0.07	119.43	7.82	27.68
DR	0.06	698.88	49.90	176.36
DAR	0.08	856.93	59.91	211.89
LDR	0.09	7.98	1.14	1.30
FS	18.44	26.70	25.14	1.85

Source: SPSS output

Correlation analysis

Having indicated the descriptive statistics, Pearson's correlation

coefficients are computed and the results are presented in Table 3.

Table 3

Pearson's correlation coefficients matrix

This table shows the bivariate Pearson's correlation coefficients of dependent and independent variables of 13 Nepalese commercial banks for the study period from 2015/16 to 2022/23. 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 total 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), DR (Debt ratio as measured by the ratio of total debt to total assets ratio, in percentage), EAR (Equity capital ratio is measured by the ratio of total equity to total assets, in percentage), DAR (Deposit to assets ratio as measured by the ratio of total deposits to total assets, in percentage), BS (Bank size as measured by total assets, Rs. in billion) and LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage).

Variables	ROA	ROE	CAR	EAR	DR	DAR	LDR	FS
ROA	1							
ROE	0.607**	1						
CAR	0.341**	0.141	1					
EAR	0.025	0.058	-0.167	1				
DR	-0.031	-0.059	-0.175	0.796**	1			
DAR	-0.028	-0.065	-0.175	0.593**	0.799**	1		
LDR	0.050	0.173	-0.085	-0.066	-0.066	-0.068	1	
FS	0.108	0.190	0.155	-0.748**	-0.552**	-.853**	0.065	1

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

Table 3 shows that bank size has a positive relationship with return on assets. It means that increase in bank size leads to increase in return on assets. Similarly, capital adequacy ratio has a positive relationship with return on assets. It means that increase in capital adequacy ratio leads to increase in return on assets. In contrast, there is a negative relationship between deposit to assets ratio and return on assets. It means that increase in deposit to assets ratio leads to decrease in return on assets. Likewise, debt ratio has a negative relationship with return on assets. It shows that higher the debt ratio, lower would be the return on assets. Moreover, loan to deposit ratio has a positive relationship with return on assets. It indicates that increase in loan to deposit ratio leads to increase in return on assets. Further, equity capital ratio has a positive relationship with return on assets. It indicates that increase in equity

capital ratio leads to increase in return on assets.

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

Regression analysis

Having indicated 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 capital adequacy ratio, equity to assets ratio, debt ratio, deposit to assets ratio, loan to deposit ratio and bank size on the return on assets of Nepalese commercial banks.

Table 4

Estimated regression results of capital adequacy ratio, equity to assets ratio, debt ratio, deposit to assets ratio, loan to deposit ratio and bank size on the return on assets

The results are based on panel data of 13 commercial banks with 104 observations for the period of 2015/16 to 2022/23 by using linear regression model. The model is $ROA_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 EAR_{it} + \beta_3 CAR_{it} + \beta_4 DAR_t + \beta_5 BS_{it} + \beta_6 LDR_{it} + e_{it}$ 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), DR (Debt ratio as measured by the ratio of total debt to total assets ratio, in percentage), EAR (Equity capital ratio is measured by the ratio of total equity to total assets, in percentage), DAR (Deposit to assets ratio as measured by the ratio of total deposits to total assets, in percentage), BS (Bank size as measured by total assets, Rs. in billion) and LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage).

Model	Intercepts	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		CAR	EAR	DR	DAR	LDR	FS			
1	0.563 (1.904)	0.072 (3.519)**						0.107	0.489	12.384
2	1.591 (28.812)		0.001 (0.240)					0.010	0.520	0.058
3	1.592 (28.832)			-0.001 (0.303)				0.001	0.520	0.092
4	1.592 (28.821)				-0.001 (0.268)			0.001	0.520	0.072
5	1.610 (22.770)					0.020 (0.486)		0.001	0.520	0.236
6	2.351 (3.249)						0.030 (1.058)	0.001	0.518	1.119
7	0.541 (1.781)	0.073 (3.509**)	0.002 (0.336					0.098	0.492	6.190
8	0.540 (1.773)	0.073 (3.503)**		-0.001 (0.831)	0.004 (0.845)			0.096	0.493	4.342
9	12.107 (5.49)				-0.003 (4.637)**	0.020 (0.547)	0.409 (4.762)**	0.174	0.471	7.691
10	12.197 (5.614)		0.016 (0.808)	-0.007 (2.120)*			0.414 (4.882)**	0.185	0.468	8.174
11	1.614 (21.932)		0.023 (0.989)	-0.011 (1.225)	0.006 (1.039)	0.019 (0.466)		0.023	0.524	0.469
12	10.792 (5.173)	0.069 (3.734)**			-0.003 (4.602)		0.398 (4.957)**	0.281	0.439	13.361
13	10.797 (5.130)	0.068 (3.607)**	0.014 (0.727)	-0.009 (1.218)	0.003 (0.530)	0.006 (0.185)	0.397 (4.904)**	0.269	0.443	6.832

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 bank size are positive with return on assets. It indicates that bank size has a positive impact on return on assets. This finding is similar to the findings of Kapaya and Raphael (2016). Likewise, 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 Jadhav et al. (2021). However, the beta coefficients for equity to assets ratio are positive with return on assets. It indicates that equity to assets ratio has a positive impact on return on assets. This finding is similar to the findings of Singh and Bagga (2019). Similarly, the beta coefficients for deposit to assets ratio are negative with return on assets. It indicates that deposit to assets ratio has a negative impact on return on assets. This finding is consistent with the findings of Sari and Septiano (2004). In addition, the beta coefficients for loan to deposit ratio are positive with return on assets. It indicates that loan to deposit ratio has a positive impact on return on assets. This finding is similar to the findings of Marozva (2015).

Estimated regression results of capital adequacy ratio, equity to assets

ratio, debt ratio, deposit to assets ratio, loan to deposit ratio and bank size on return on equity of Nepalese commercial banks are presented in Table 5.

Table 5

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

The results are based on panel data of 13 commercial banks with 104 observations for the period of 2015/16 to 2022/23 by using linear regression model. The model is $ROE_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 EAR_{it} + \beta_3 CAR_{it} + \beta_4 DAR_t + \beta_5 BS_{it} + \beta_6 LDR_{it} + e_{it}$ where, the dependent variable is ROE (Return on equity as measured by the ratio of net income to total 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), DR (Debt ratio as measured by the ratio of total debt to total assets ratio, in percentage), EAR (Equity capital ratio is measured by the ratio of total equity to total assets, in percentage), DAR (Deposit to assets ratio as measured by the ratio of total deposits to total assets, in percentage), BS (Bank size as measured by total assets, Rs. in billion) and LDR (Loan to deposit ratio as measured by the ratio of total loans to total deposits, in percentage).

Model	Intercepts	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		CAR	EAR	DR	DAR	LDR	FS			
1	17.568 (6.372)	0.261 (1.376)						0.009	4.566	1.893
2	13.754 (28.156)		0.006 (0.563)					0.007	4.604	0.316
3	13.752 (28.153)			-0.002 (0.571)				0.007	4.604	0.325
4	13.745 (28.149)				-0.001 (0.628)			0.006	4.602	0.395
5	13.132 (21.260)					0.611 (1.708)		0.0198	4.541	2.916
6	25.698 (4.061)						0.472 (1.881)	0.026	4.527	3.537
7	17.364 (6.128)	0.250 (1.293)	0.006 (0.340)					0.000	4.587	0.996
8	17.319 (6.123)	0.247 (1.280)		-0.075 (1.267)	-0.063 (1.284)			0.007	4.572	1.217
9	101.906 (5.272)				-0.027 (4.130)**	0.633 (1.942)*	3.467 (4.601)**	0.191	4.127	8.462
10	104.995 (5.408)		0.003 (0.019)	-0.034 (1.196)			3.560 (4.701)**	0.170	4.178	7.500
11	12.998 (20.317)		0.086 (0.431)	-0.101 (1.275)	-0.074 (1.422)	0.644 (1.792)		0.015	4.554	1.351
12	107.759 (5.462)	0.279 (1.588)			-0.028 (4.265)**		3.510 (4.623)**	0.180	4.154	7.952
13	106.747 (5.487)	0.252 (1.445)	0.075 (0.421)	-0.101 (1.419)	0.0459 (0.970)	0.602 (1.853)	3.513 (4.694)**	0.204	4.092	5.059

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 bank size are positive with return on equity. It indicates that bank size has a positive impact on return on equity. This finding is similar to the findings of Sufian and Habibullah (2009). Likewise, beta coefficients for capital adequacy ratios 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 Fidanoski et al. (2018). However, the beta coefficients for equity to assets ratio are positive with return on equity. It indicates that equity to assets ratio has a positive impact on return on equity. This finding is similar to the findings of Bace (2016). Similarly, the beta coefficients for deposit to assets ratio are negative with return on equity. It indicates that deposit to assets ratio has a negative impact on return on equity. This finding is consistent with the findings of Ramchandani and Jethwani (2016). In addition, the beta coefficients for loan to deposit ratio are positive with return on equity. It indicates that loan to deposit ratio has a positive impact on return on equity. This finding is similar to the findings of Suroso (2022).

4. Summary and conclusion

An essential component of the financial industry is the measurement of bank performance, which offers information about the stability, efficacy, and efficiency of bank operations. For a variety of stakeholders, including investors, regulators, policymakers, and bank management, knowing and assessing bank performance is crucial because it enables them to make well-informed decisions about risk management, investments, and regulatory compliance.

This study attempts to determine the relationship of equity capital with the profitability of Nepalese commercial banks. The study is based on secondary data of 13 commercial banks with 104 observations for the period from 2015/16 to 2022/23.

The study showed that capital adequacy ratio, equity to assets ratio, loan to deposit ratio and bank size have positive effect on return on equity and return on equity of Nepalese commercial banks. Similarly, debt ratio and deposit to assets ratio have negative effect on return on equity and return on equity. High levels of debt lead to higher interest payments. These interest expenses reduce net income. The study also concluded that bank size and capital adequacy ratio play significant role in determining the profitability of Nepalese commercial banks.

References

Abbadi, S. M., and N. Abu-Rub, 2012. The effect of capital structure on the performance of Palestinian financial institutions. *British Journal of Economics, Finance and Management Sciences* 3(2), 92-101.

Altunbas, Y., S. Carbo, E. P. Gardener, and P. Molyneux, 2007. Examining the relationships between capital, risk and efficiency in European banking. *European Financial Management* 13(1),49-70.

Anvarovich, N. E., 2022. Improving the risk management system in a commercial bank as a condition for minimizing credit risks. *European Journal of Business Startups and Open Society* 2(2), 43–45.

Bace, E., 2016. Bank profitability: Liquidity, capital and asset quality. *Journal of Risk Management in Financial Institutions* 9(4), 327-331.

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.

Chan, S. G., and M. Z. A. Karim, 2010. Bank efficiency, profitability and equity capital: evidence from developing countries. *American Journal of Finance and Accounting* 2(2), 181-195.

Chowdhury, R. H., 2015. Equity capital and bank profitability: evidence from the United Arab Emirates. *Afro-Asian Journal of Finance and Accounting* 5(1), 1-20.

Ebenezer, O. O., W. A. W. B. Omar, and S. Kamil, 2017. Bank specific and macroeconomic determinants of commercial bank profitability: Empirical evidence from Nigeria. *International Journal of Finance and Banking Studies* 6(1), 25-38.

Fidanoski, F., M. Choudhry, M. Davidović, and B. S. Sergi, 2018. What does affect profitability of banks in Croatia? *Competitiveness Review: An International Business Journal 28*(4), 338-367.

Gautam, K. S., 2019. Impact of capital adequacy and bank operational efficiency on profitability of Nepalese commercial bank. *SSSRG International Journal of Economics and Management Studies* 6(8), 213-218.

Georgakopoulos, G., K. Toudas, E. I. Poutos, T. Kounadeas, and S. Tsavalias, 2022. Capital structure, corporate governance, equity ownership and their impact on firms' profitability and effectiveness in the energy sector. *Energies* 15(10),

3625-3634.

Ha, V. D., 2020. Does bank capital affect profitability and risk in Vietnam? *Accounting*, 6(3), 273–278.

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

Jadhav, J. J., A. Kathale, and S. Rajpurohit, 2021. An impact of capital adequacy ratio on the profitability of private sector banks in India– A study. *International Journal of Engineering and Management Research* 5(11), 37-45.

Kapaya, S. M., and G. Raphael, (2016). Bank-specific, industry-specific and macroeconomic determinants of banks profitability: Empirical evidence from Tanzania. *International Finance and Banking* 3(2), 100-119.

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

Marozva, G., 2015. Liquidity and bank performance. *International Business and Economics Research Journal* 14(3), 453-562.

Mokhova, N., M. Zinecker, and T. Meluzín, 2018. Internal factors influencing the cost of equity capital. *Entrepreneurship and Sustainability Issues* 5(4), 827-845.

Mueller, E., 2008. Benefits of control, capital structure and company growth. *Applied Economics* 40(21), 2721-2734.

Mule, K. R., M. S. Mukras, and O. M. Nzioka, 2015. Corporate size, profitability and market value: An econometric panel analysis of listed firms in Kenya. *European Scientific Journal* 11(13), 346-396.

Obamuyi, T. M., 2012. Financial development and economic growth in emerging markets: The Nigerian Experience. *Indian Journal of Finance* 6(4), 16-27.

Olalekan, A., and S. Adeyinka, 2013. Capital adequacy and banks' profitability: Empirical evidence from Nigeria. *American International Journal of Contemporary Research* 3(10), 87-93.

Quoc, A. N., and S. T. My, 2023. Bank capital and bank profitability of Vietnam commercial banks. *International Journal of Business and Society* 24(1), 56-65.

Ramchandani, K., and D. Jethwani, 2017. Impact of credit deposit ratio on bank profitability: Evidence from scheduled commercial banks of

India. *KAAV International Journal of Economics, Commerce and Business Management* 4(4), 183-190.

Saleh, I., and M. Abu Afifa, 2020. The effect of credit risk, liquidity risk and bank capital on bank profitability: Evidence from an emerging market. *Cogent Economics and Finance* 8(1), 181-194.

Sari, L., and R. Septiano, 2020. Effects of intervening loan to deposit ratio on profitability. *Journal of Accounting and Finance Management* 1(5), 228-241.

Shahi, B., 2023. Bank-related, industry-related and macroeconomic factors affecting profitability of Nepalese Commercial Banks. *Perspectives in Nepalese Management* 1(1), 137-152.

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.

Sufian, F., and M. S. Habibullah, 2009. Determinants of bank profitability in a developing economy: Empirical evidence from Bangladesh. *Journal of Business Economics and Management* 10(3), 207-217.

Suroso, S., 2022. Analysis of the effect of capital adequacy ratio (CAR) and loan to deposit ratio (LDR) on the profits of go public banks in the Indonesia stock exchange. *Scientific Journal of Accountancy, Management and Finance* 2(1), 45-53.

Thanh Xuan, N., B. Phuong Linh, and L. Minh Huong, 2021. The impact of equity capital on the bank's profitability: Evidence from Vietnam's Banking System. *Journal of Banking and Financial Economics* 2(16), 56-71.