Impact of Firm Size and Capital Structure on the Profitability of Nepalese Commercial Banks

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Abstract

The study examines the impact of firm size and capital structure on the profitability of Nepalese commercial banks. Return on equity and return on assets are selected as the dependent variables. The selected independent variables are debt to equity ratio, debt to assets ratio, capital adequacy ratio, loan to deposits ratio, assets tangibility and firm size. The study is based on secondary data of 13 commercial banks with 104 observations for the period from 2014/15 to 2021/22. The data were collected from Banking and Financial Statistics published by Nepal Rastra Bank, publications and websites of 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 firm size and capital structure on the profitability of Nepalese commercial banks.

The study showed that capital adequacy ratio has a positive impact on return on assets. It means that increase in capital adequacy ratio leads to increase in return on assets. Likewise, debt to equity ratio has a negative impact on return on assets and return on equity. It means that increase in debt-to-equity ratio leads to decrease in return on assets and return on equity. Further, this study showed that assets tangibility has a positive impact on return on assets and return on equity. It means that increase in assets tangibility leads to increase in return on assets and return on equity. Moreover, firm size has a positive impact on return on equity. It indicates that increase in firm size leads to increase in return on equity. Similarly, debt to assets ratio has a positive impact on return on equity. It means that increase in debt to assets ratio leads to increase in return on equity.

Keywords: firm size, capital structure, debt to equity ratio, debt to assets ratio, firm size, return on equity, return on assets

1. Introduction

The capital structure decision is one of the most important decisions faced by firm management. In pursuit of maximizing firm value, financial managers are charged with two main responsibilities: investment decisions and capital structure choices. The capital structure of a company is particularly important because it impact on the ability of the firm to take up investment opportunities. The decision on capital structure is crucial for both managers and regulators as well as for the shareholders (Tarek *et al.,* 2014). Diamond

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and Raghuram (2000) stated that the capital structure affects the stability of the bank. It is imperative to understand the factors which drive the capital structure decision of banks. Myers (2001) has argued that there is no universal theory of the debt/equity choice and no reason to expect one. Capital structure is the way that firm generates the money to finance its operations. Capital structure of a firm describes the way in which a firm raises capital needed to establish and expand its business activities. 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. One of the many objectives of a corporate financial manager is to ensure low cost of capital and thus maximize the wealth of shareholders. Hence, capital structure is one of the effective tools of management to manage the cost of capital.

Ebaid (2009) examined the capital structure and performance of firms to check the relationship between debt level and financial performance of companies listed at Egyptian stock exchange during the period of 1997 to 2005. The study found that there is negative significant influence of short-term debt and the total debt on the financial performance measured by the return on asset. According to Ronoh and Ntoiti (2015), capital structure has negative effect on the financial performance of commercial banks. The study showed that deposits, debt and equity are negative and significantly related to financial performance of listed commercial banks in Kenya as measured by return on assets. Bokhari et al. (2012) argued that capital adequacy ratio helps the banks to ensure their capacity to meet their liabilities and other risks like credit risk, market risk and operational risk. Capital adequacy is one of the most important elements of banks stability and solidarity. Nikoo (2015) observed a significant positive effect of capital structure choice on the performance of the sampled banks. Umar *et al*. (2012) used data on 100 listed firms over a period of 2006–2009 and observed a significant positive association between the performance of a firm and capital structure. The study used return on assets (ROA), earnings per share (EPS) and net profit margin as proxies to measure the performance and short-term debt obligations to total asset (STDTA), long-term debt obligations to total asset (LTDTA), and total debt obligations to total asset (TDTA) as the capital structure variables. Salteh *et al*. (2012) inspected the influence of capital structure decision on the profitability of 28 firms from the Tehran stock exchange. The study found significant impact of capital structure variables on the performance of the firms. 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.

Hasan et al. (2020) explored the determinants of bank profitability with size as moderating variable. Internal ratio and macroeconomics variable are used to determine bank profitability. The study found that net interest margin, ratio of operational expenses to operational profit, capital adequacy ratio and loan to deposits ratio significantly influence the bank profitability. Net interest margin, non-performing loan, ratio of operational expenses to operational profit, and loan to deposits ratio significantly the bank profitability. Jaishi (2020) examined the relationship between capital structure and the financial performance of Nepalese insurance companies. The result revealed that insurance companies having a high debt ratio have better financial performance. Similarly, Semuel and Widjojo (2016) investigated the nexus between debt ratio and profitability of property and construction-related firms from 2009 to 2013. The estimated result showed a significant positive nexus between debt ratios and the firms' profitability. Adam *et al.* (2018) analyzed the influence of company size, liquidity and operational efficiency on bank profitability with problem credit risk as a moderating variable at commercial banks that are listed on the Indonesia stock exchange. The results of the study found that the size of the company negatively affected profitability, whereas operational efficiency negatively affected profitability. Moreover, operational efficiency has a positive effect on problem credit risk. Chien (2013) revealed a positive effects of capital structure measured by debt ratio on the corporate performance of Taiwan listed Photovoltaic Companies. Khan (2009) assessed the relationship of capital structure decisions with firm performance of the engineering sector of Pakistan. The study revealed that there is a negative relationship between equity and firm performance. Employment of debt in capital structure shows that managers have better expectations about the future performance whereas equity sends bad news about the firm performance in the future. A negative relationship between total equity to total assets and firm performance could imply that as the proportion of equity financing decreases in relation to total assets, firm performance improves (Salim and Yadav, 2012).

Mboi et al. (2018) revealed that lower equity ratio may indicate higher financial leverage (more debt relative to equity). While this can magnify returns for shareholders in good times, it also increases financial risk. If the company is unable to cover its debt obligations, it might experience financial distress, negatively impacting performance. Husna and Satria (2019) determined the effect of return on assets, debt to asset ratio (DAR), current ratio (CR), firm size, and dividend payout ratio (DPR) to the firm value of manufacturing companies listed in Indonesia Stock Exchange for the period

2013-2016. The study found that the return on asset and firm size have effects on firm value. However, current ratio and leverage ratio have negative effects on firm value. Javed et al. (2015) assessed the effect of financial leverage on efficiency of firms in Pakistan. The regression results showed that leverage has negative association with the efficiency of firms. Harris and Raviv (1991) found that the amount of leverage in a firm's capital structure affects the agency conflicts between managers and shareholders by constraining or encouraging managers to act more in the interest of shareholders and, thus, can alter manager's behaviors and operating decisions, which means that the amount of leverage in capital structure affects firm performance. Dogan (2013) found that financial leverage ratio negatively affects the return on assets. In addition, Pham (2021) showed that banks' characteristics, bank size and financial leverage have negative impact on bank performance. Fumani (2015) examined the effect of capital structure on firm value, the rate of return on equity and earnings per share of listed companies in Tehran stock exchange. The study showed that there is a significant negative relationship between return on equity and leverage ratio.

In the context of Nepal, Bariya *et al*. (2016) revealed that there is a positive relationship of return on assets with financial leverage, asset quality and liquidity ratio which indicates that increase in financial leverage, assets quality and liquidity ratio leads to increase in profitability. Pandey (2023) showed that loan to deposit ratio and capital adequacy ratio have a positive impact on return on assets. However, asset growth, non-performing loans, loan loss provision and bank size have a negative impact on return on assets. Similarly, capital adequacy ratio, loan to deposit ratio and non-performing loans and loan loss provision have a positive impact on net interest margin. In addition, Darlami (2023) analyzed the impact of credit risk, operational risk and liquidity risk on the profitability of Nepalese commercial banks. The study showed that non-performing loan, loan loss provision, leverage ratio, loan to deposit ratio and cost to income ratio have negative impact on return on assets. However, capital adequacy ratio has positive impact on return on assets. Likewise, capital adequacy ratio, non-performing loan, loan loss provision, leverage ratio, loan to deposit ratio and cost to income ratio have negative impact on return on equity.

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

The main purpose of the study is to analyse the effect of firm size and capital structure on the profitability of Nepalese commercial banks. Specifically, it examines the relationship of debt-to-equity ratio, debt to assets ratio, capital adequacy ratio, loan to deposits ratio, assets tangibility and firm size with return on equity and return on assets in the context 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 gathered from 13 Nepalese commercial banks for the study period from 2014/15 to 2021/22, leading to a total of 104 observations. The study has employed purposive sampling method. The main sources of data include Banking and Financial Statistics published by Nepal Rastra Bank, reports published by Ministry of Finance and the annual report of respective 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	Nepal Bank Limited	2014/15-2021/22	8
2	Rastra Banijya Bank Limited	2014/15-2021/22	8
3	Agricultural Development Bank Limited	2014/15-2021/22	8
4	Everest Bank Limited	2014/15-2021/22	8
5	NMB Bank Limited	2014/15-2021/22	8
6	Nepal SBI Bank Limited	2014/15-2021/22	8
7	Citizens Bank International Limited	2014/15-2021/22	8
8	Prime Commercial Bank Limited	2014/15-2021/22	8
9	Siddartha Bank Limited	2014/15-2021/22	8
10	Machhapuchchhre Bank Limited	2014/15-2021/22	8
11	Standard Chartered Bank Nepal Limited	2014/15-2021/22	8
12	Sanima Bank Limited	2014/15-2021/22	8
13	NIC Asia Bank Limited	2014/15-2021/22	8
Total number of observations			**104**

Thus, the study is based on the 104 observations.

The model

The model used in this study assumes that the performance of Nepalese commercial banks depends upon the capital structure and firm size. The dependent variables selected for the study are return on assets and return on equity. Similarly, the selected independent variables are of debt-to-equity ratio, debt to assets ratio, capital adequacy ratio, loan to deposits ratio, assets tangibility and firm size. The following model equations are designed to test the hypothesis.

$$ROA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LDR_{it} + \beta_3 DTA_{it} + \beta_4 DTE_{it} + \beta_5 FS_{it} + \beta_6 AT_{it} + e_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LDR_{it} + \beta_3 DTA_{it} + \beta_4 DTE_{it} + \beta_5 FS_{it} + \beta_6 AT_{it} + e_{it}$$

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 shareholder's 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 measured by the ratio of total loan to total deposit, in percentage.

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

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

AT= Assets tangibility measured by ratio of tangible assets to total assets, in percentage.

FS= Firm size as measured by the total assets, Rs. in million.

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

Capital adequacy ratio

Banks with higher capital are capable of absorbing any negative shocks and assumed to possess less insolvency. Higher capital may also incentivize shareholders to monitor management activities, therefore lower the probability

of taking an excessive risk by managers (Ahemed, 2017). Bank capital is considered as one of the important factors affecting bank profitability. The bank's equity capital directly influenced the rate of return on equity. Pervez and Bansal (2019) found a significant positive relationship between CAR and ROE in banks in India. Similarly, Getahun *et al.* (2015) showed a positive relationship between capital adequacy ratio and banks performance measured by return on assets, return on equity and net interest margin. In addition, Khalid *et al.* (2021) also showed that there is a positive relationship between the banks' financial performance and capital adequacy ratio. Based on it, this study develops the following hypothesis:

H_1: There is a positive relationship between capital adequacy ratio and bank profitability.

Loan to deposit ratio

Al-Qudah and Jaradat (2013) found that there is positive association between ROE and total loans to total deposits. Shingiergji (2013) stated that credit to deposit ratio has a positive and significant association with bank performance. Likewise, Kosmidou *et al.* (2008) revealed a positive relationship between loan to deposit ratio and profitability ratio. Similarly, Sharifi and Akhter (2016) showed that there is a positive relationship between CD ratio and profitability. Likewise, Prasanjaya and Ramantha (2013) found that loan deposit ratio has a significant positive effect on return on assets of the bank. Albulescu (2015) found that return on asset has a negative and significant relationship with credit to deposit ratio. Similarly, Rosyid and Noor (2018) revealed that there is a positive relationship of loan to deposit ratio with the profitability of firms listed in Indonesia Stock Exchange. Based on it, this study develops the following hypothesis:

H_2: There is a positive relationship between loan to deposit ratio and bank profitability.

Debt to asset ratio

Saeed and Amjad (2013) found a significant negative relationship between debt ratio and financial performance of companies. However, Muathe *et al*. (2014) revealed that debt ratio has statistically positive relationship with firm's performance measured by return on equity and return on assets. James (1987) reported a positive influence of leverage on firm performance. Similarly, Gill *et al.* (2011) indicated that short-term debt to total assets; long-term debt to total assets; and total debt to total assets had positive impact on

profitability in both the service and manufacturing industries. Based on it, this study develops the following hypothesis:

H_3: There is positive relationship between debt to assets ratio and bank profitability

Debt to equity ratio

Profitability is negatively correlated to debt-to-equity ratio (Shah *et al*., 2004). Similarly, Amato and Burson (2007) stated that debt to equity ratio is negatively related to performance. 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 total assets, total debt to total assets and debt to equity ratio have negative impact on the profitability of the banks. Based on it, this study develops the following hypothesis:

H_4: There is a negative relationship between debt-to-equity ratio and bank profitability.

Assets tangibility

Bhutta and Hasan (2013) explored the impact of firm specific factors on profitability of companies listed in food sector of Karachi stock market in the presence of food inflation by employing multivariate regression analysis in common effect setting for the period of 2002-2006. The results showed that tangibility, growth of the firm and food inflation are positively related to profitability. Musah et al. (2019) examined the nexus between asset tangibility and firms' financial performance using panel study of non-financial firms listed on the Ghana Stock Exchange (GSE). The study showed that there is direct connection between asset tangibility and firms' financial performance. Boadi et al. (2013) analysed the determinants of profitability of insurance firms in Ghana. The study revealed that firm with higher asset tangibility is likely to lower external financing costs, leading higher financial performance.

H_5: There is positive relationship between assets tangibility and bank profitability

Firm 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. Hirindu (2017) proved that bank size is positive and it is statistically significant determinants of profitability for ROA models. Rudhani *et al.* (2016) asserted that bank size has a positive correlation with profitability. Maina *et al.* (2019) showed that firm size as measured by customer deposits and loans advance have a positive relationship with profitability of commercial banks in Kenya. Gul *et al.* (2011) showed that there is direct relationship between the size of banks and profitability. Based on it, this study develops the following hypothesis:

H_6: There is a positive relationship between firm size and bank profitability.

3. Results and discussion

Descriptive statistics

Table 2 presents the descriptive statistics of selected dependent and independent variables during the period 2014/15 to 2020/21.

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 2014/15 to 2021/22. The dependent variables are ROA (Return on assets as measured by the ratio of net income to total assets, in percentage) and ROE (Return on equity as measured by the ratio of net income to shareholder's 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 measured by the ratio of total loan to total deposit, in percentage), DAR (Debt to equity ratio measured by the ratio of total debt to total assets, in percentage), DER (Debt to assets measured by the ratio of total debt to total equity, in percentage), AT (Assets tangibility measured by ratio of tangible assets to total assets, in percentage) and FS (Firm size as measured by the total assets, Rs. in million).

Variables	Minimum	Maximum	Mean	Std. Deviation
ROA	0.01	1.08	0.02	0.10
ROE	0.08	14.59	0.60	2.20
CAR	7.49	22.99	14.05	2.60
FS	29.38	346.17	114.83	59.72
AT	0.00	0.10	0.01	0.01
LDR	48.92	97.68	83.08	10.20
DAR	0.09	1.00	0.90	0.13
DER	0.75	89.30	13.07	15.53

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 13 Nepalese commercial banks for the study period from 2014/15 to 2021/22. The dependent variables are ROA (Return on assets as measured by the ratio of net income to total assets, in percentage) and ROE (Return on equity as measured by the ratio of net income to shareholder's 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 measured by the ratio of total loan to total deposit, in percentage), DAR (Debt to equity ratio measured by the ratio of total debt to total assets, in percentage), DER (Debt to assets measured by the ratio of total debt to total equity, in percentage), AT (Assets tangibility measured by ratio of tangible assets to total assets, in percentage) and FS (Firm size as measured by the total assets, Rs. in million).

Variables	ROA	ROE	CAR	FS	AT	LDR	DAR	DER
ROA	1							
ROE	0.372**	1						
CAR	0.055	-0.015	1					
FS	-0.127	0.059	0.084	1				
AT	0.027	0.075	-0.010	-0.002	1			
LDR	-0.057	0.067	0.031	-0.066	0.143	1		
DAR	-0.013	0.014	-0.051	0.012	-0.133	-0.213*	1	
DER	-0.035	-0.272	-0.136	-0.027	-0.117	-0.153	0.169	1

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

Table 3 shows that 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. Loan to deposit ratio has a negative relationship with return on assets. It shows that higher the loan to deposit ratio, lower would be the return on assets. Likewise, debt to equity ratio has a negative relationship with return on assets. It means that increase in debt-to-equity ratio leads to decrease in return on assets. Further, this study shows that there is a positive relationship between assets tangibility and return on assets. It means that increase in assets tangibility leads to increase in return on assets. Moreover, there is a negative relationship between firm size and return on assets. It indicates that increase in firm size leads to decrease in return on

assets. Similarly, debt to assets ratio has a negative relationship with return on assets. It means that increase in debt to assets ratio leads to decrease in return on assets.

The results also show that capital adequacy ratio has a negative relationship with return on equity. It means that increase in capital adequacy ratio leads to decrease in return on equity. Loan to deposit ratio has a positive relationship with return on equity. It shows that higher the loan to deposit ratio, higher would be the return on equity. Likewise, debt to equity ratio has a negative relationship with return on equity. It means that increase in debt-to-equity ratio leads to decrease in return on equity. Further, this study shows that there is a positive relationship between assets tangibility and return on equity. It means that increase in assets tangibility leads to increase in return on equity. Moreover, there is a positive relationship between firm size and return on equity. It indicates that increase in firm size leads to increase in return on equity. Similarly, debt to assets ratio has a positive relationship with return on equity. It means that increase in debt to assets ratio leads to increase in return on equity.

Regression analysis

Having indicated the Pearson's correlation coefficients, the regression analysis has been carried out and the results are presented in Table 4 and Table 5. More specifically, Table 4 shows the regression results of debt to equity ratio, debt to assets ratio, capital adequacy ratio, loan to deposits ratio, assets tangibility and firm size with return on assets in Nepalese commercial banks.

Table 4

Estimated regression results of debt-to-equity ratio, debt to assets ratio, capital adequacy ratio, loan to deposits ratio, assets tangibility and firm size with return on assets of Nepalese commercial banks

The results are based on panel data of 13 banks with 104 observations for the period of 2014/15 to 2021/22 by using linear regression model. The model $ROA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LDR_{it} + \beta_3 DTA_{it} + \beta_4 DTE_{it} + \beta_5 FS_{it} + \beta_6 AT_{it} + e_{it}$ *where dependent variable is ROA (Return on assets as measured by the ratio of net income to total assets, in percentage). The independent variables are CAR (Capital adequacy ratio as measured by the ratio of total capital to total risk weighted exposure, in percentage), LDR (Loan to deposit ratio measured by the ratio of total loan to total deposit, in percentage), DAR (Debt to equity ratio measured by the ratio of total debt to total assets, in percentage), DER (Debt to assets measured by the ratio of total debt to total equity, in percentage), AT (Assets tangibility measured by ratio of tangible assets to total assets, in percentage) and FS (Firm size as measured by the total assets, Rs. in million).*

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		CAR	FS	AT	LDR	DAR	DER			
1	2.226 (7.466)**	0.001 (1.187)						0.026	0.452	3.964
2	1.970 (3.984)**		-0.004 (0.673)					0.005	0.458	0.453
3	1.890 (12.845)**			0.006 (1.789)				0.019	0.453	3.202
4	4.926 (2.230)*				-0.297 (1.488)			0.011	0.455	2.215
5	1.563 (19.489)**					-0.005 (1.114)		0.002	0.457	1.241
6	1.641 (31.507)**						-0.004 (0.090)	0.009	0.459	0.008
7	2.141 (4.305)**	0.001 (0.196)	-0.001 (0.213)					0.017	0.454	1.987
8	2.679 (4.738)**	0.002 (1.710)	-0.002 (0.358)	0.007 (1.922)				0.041	0.484	2.589
9	1.402 (0.406)	0.003 (1.339)	-0.001 (0.190)	0.007 (1.950)	-0.123 (0.375)			0.033	0.450	1.961
10	1.543 (0.448)	0.003 (1.090)	-0.004 (0.535)	0.008 (2.243)	-0.114 (0.351)	-0.006 (1.364)		0.041	0.448	1.954
11	1.651 (0.475)	0.004 (1.047)	-0.004 (0.474)	0.008 (2.248)	-0.100 (0.303)	-0.006 (1.385)	-0.018 (0.335)	0.033	0.450	1.633

Notes:

i. Figures in parenthesis are t-values.

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

iii. Return on asset is the dependent variable.

Table 4 shows that the beta coefficients for capital adequacy ratio are positive with return on assets. It means that capital adequacy ratio has a positive impact on return on assets. This finding is similar to the findings of Khalid *et al.* (2021). Further, 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 Prasanjaya and Ramantha (2013). Similarly, the beta coefficients for debt-to-equity ratio ratio are negative with return on assets. It indicates that the debt-to-equity ratio has a negative impact on return on assets. This finding is similar to the findings of Taani (2013). Further, this study shows that the beta coefficients for debt to assets ratio are negative with return on assets. It indicates that the debt to assets ratio has a negative impact on return on assets. This finding is inconsistent with the findings of Gill *et al.* (2011). Likewise, the beta coefficients for firm size are also negative with return on assets. It indicates that the firm size has negative impact on return on assets. This finding is consistent with the findings of Kapaya and Raphael (2016).

Table 5 shows the regression results of debt-to-equity ratio, debt to assets ratio, capital adequacy ratio, loan to deposits ratio, assets tangibility and firm size with return on equity in Nepalese commercial banks.

Table 5

Estimated regression results of debt-to-equity ratio, debt to assets ratio, capital adequacy ratio, loan to deposits ratio, assets tangibility and firm size with return on equity of Nepalese commercial banks

The results are based on panel data of 13 banks with 104 observations for the period of 2014/15 to 2021/22 by using linear regression model. The model $ROE_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LDR_{it} + \beta_3 DTA_{it} + \beta_4 DTE_{it} + \beta_5 FS_{it} + \beta_6 AT_{it} + e_{it}$ *where dependent variable is ROE (Return on equity as measured by the ratio of net income to shareholder's 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 measured by the ratio of total loan to total deposit, in percentage), DAR (Debt to equity ratio measured by the ratio of total debt to total assets, in percentage), DER (Debt to assets measured by the ratio of total debt to total equity, in percentage), AT (Assets tangibility measured by ratio of tangible assets to total assets, in percentage) and FS (Firm size as measured by the total assets, Rs. in million).*

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		CAR	FS	AT	LDR	DAR	DER			
1	29.985 (7.401)**	-0.003 (3.412)**						0.087	6.139	11.640
2	45.731 (7.190)**		0.348 (4.644)**					0.156	5.903	21.568
3	12.313 (5.984)**			0.094 (2.028)*				0.027	6.338	4.112
4	27.640 (0.883)				1.023 (0.362)			0.008	6.452	0.131
5	14.174 (12.812)**					0.139 (2.286)*		0.037	6.308	5.227
6	16.005 (21.945)**						-0.516 (0.745)	0.004	6.439	0.555
7	47.726 (7.437)**	-0.002 (1.691)	0.287 (3.462)**					0.170	5.854	12.396
8	43.816 (5.938)**	-0.002 (1.784)	0.260 (2.998)**	0.048 (1.071)				0.171	5.850	8.657
9	-41.448 (0.935)	-0.004 (2.648)**	0.192 (2.087)*	0.034 (0.751)	8.199 (1.949)*			0.192	5.775	7.611
10	-38.139 (0.881)	-0.004 (2.237)*	0.253 (2.722)**	0.004 (0.089)	8.004 (1.951)	0.148 (2.547)*		0.232	5.633	7.689
11	-42.169 (0.970)	-0.004 (2.324)*	0.268 (2.845)**	0.015 (0.329)	8.541 (2.064)*	0.142 (2.433)*	-0.671 (1.000)	0.232	5.633	6.582

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 negative with return on equity. It means that capital adequacy ratio has a negative impact on return on equity. This finding is similar to the findings of Getahun *et al.* (2015). Further, the beta coefficients for loan to deposit ratio are positive with return on equity. It indicates that loan to deposit ratio has a positive impact on return on equity. This finding is consistent with the

findings of Kosmidou *et al.* (2008). Similarly, the beta coefficients for debt-to-equity ratio ratio are negative with return on equity. It indicates that the debt-to-equity ratio has a negative impact on return on equity. This finding is similar to the findings of Amato and Burson (2007). Further, this study shows that the beta coefficients for debt to assets ratio are positive with return on equity. It indicates that the debt to assets ratio has a positive impact on return on equity. This finding is inconsistent with the findings of James (1987). Likewise, the beta coefficients for firm size are also positive with return on equity. It indicates that the firm size has positive impact on return on equity. This finding is consistent with the findings of Rudhani *et al.* (2016).

The study results indicate that between the two econometric estimation models, Hausman specification test recommended the estimation of the fixed effects model. According to the fixed effect model result firm's size is positively related to profitability measure of return on assets. Further this study reveals those total debt ratio has a negative relationship with firm's profitability.

This research explores the influence of firm's size on firm's profitability in listed firms of Sri Lankan hotels and travels sector firms and laid some contribution to the existing literature as Sri Lankan firms' context. Moreover that observed findings could assist the corporate sector management as well as policy makers to take appropriate decisions in their fields.

Based on the knowledge of authors, this is the first study that reveals the influence of firm's size on firm's profitability in listed firms of Sri Lankan hotels and travels sector firms. Moreover, influence of firm's size on firm's profitability is misty;

4. Summary and conclusion

The capital structure refers to how the company finances its assets, both internally and externally. In other words, debt financing is short-term debt and long-term debt. The second source is equity financing, which is retained earnings and capital paid by the owners. The Company must choose the right mix of stocks, debt or securities. This mix is called the optimal capital structure that increases the interest of the company where the cost of capital is reduced, and the value of the company rises.

This study attempts to analyse the impact of capital structure and firm size on profitability of Nepalese commercial banks. The study is based on secondary data of 13 commercial banks for the study period from 2014/15 to 2021/22, leading to a total of 104 observations.

The study showed that total capital adequacy ratio and assets tangibility have positive effect on return on assets of Nepalese commercial banks. Similarly, debt-to-equity ratio, debt to assets ratio, loan to deposits ratio and firm size have negative effect on return on assets. Moreover, capital adequacy ratio and debt-to-equity ratio have negative effect on return on equity of Nepalese commercial banks. Similarly, debt to assets ratio, loan to deposits ratio and firm size have positive effect on return on equity. Larger firms may have economies of scale and scope, allowing them to operate more efficiently and generate higher profits. The study concluded that larger firms may be perceived as being more stable and less risky by investors, which can lead to a higher valuation and a higher ROE The study also concluded that firm size is the most influencing variable that explain the changes in return on equity of Nepalese commercial banks.

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