

Evaluating the Effect of Capital Structure on the Performance of Commercial Banks in Nepal

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Abstract

This study explores the impact of capital structure on the financial performance of selected commercial banks of Nepal. A simple random sampling technique was used to select 10 commercial banks for the study. The descriptive and causal research design was used and the secondary data was obtained from the annual reports of the selected banks from 2017/18 to 2023/24. Descriptive and inferential statistical techniques were used for analyzing data. Pooled Ordinary Least Squares (POLS), Fixed Effects Model (FEM) and Random Effects Model (REM) were used. To determine the most suitable regression model the Redundant Fixed Effects Test and Correlated Random Effects (Hausman) Test were employed. The results revealed that in the case of the commercial banks in Nepal, the effect of capital structure is significant on the financial performance of the commercial banks. The total equity has a positive and significant relationship with Return on Assets (ROA), suggesting that banks which increase equity financing can increase their profitability. Long-term debt is also negatively correlated with ROA, and total assets are also negatively correlated with ROA, implying that too much borrowing and too much investment could negatively impact profitability. There is a positive but not statistically significant relationship between total debt and ROA. But all the above-mentioned components of capital structure do not show any significant impact on the Return on Equity (ROE). The results show the importance of having a proper ratio between equity capital and debt capital, and how this ratio should be managed in order to improve financial performance in commercial banks. The study offers valuable implications for bank managers, investors, policymakers and regulators in making financial sustainability, financing, lending, and investment decisions.

Keywords: Capital Structure, Return on Assets, Return on Equity, Random Effect Model, Fixed Effect Model.

I. Introduction

Capital structure refers to the composition of debt and equity used by a firm to finance its assets and operations. The choice of financing sources involves trade-offs between financing costs, financial risk, and expected returns. Debt financing generally includes borrowings and other interest-bearing liabilities, whereas equity financing comprises paid-up capital, preference shares, reserves, and retained earnings. The combination of these sources can influence a firm's risk, profitability, and value (Birru, 2016). Abor (2005) argues that financing decisions are closely associated with a firm's ability to generate returns and maintain competitiveness. An appropriate capital structure is therefore expected to balance financing costs and financial risk while providing sufficient resources to support investment and growth.

The relationship between capital structure and firm performance has been a longstanding issue in corporate finance. Modigliani and Miller (1958) proposed that, under perfect capital market assumptions, financing decisions do not affect firm value. However, these assumptions are rarely satisfied in practice because firms operate under taxes, information asymmetry, agency problems, financial distress costs, and regulatory constraints. Consequently, subsequent research has focused on how financing choices affect firm value and performance under imperfect market conditions. The capital structure decision may influence profitability through the cost of debt, financial leverage, risk exposure, and the ability of firms to undertake productive investments. Thus, financial managers need to consider the relationship between financing costs and expected returns when determining the appropriate financing mix (Gitman & Zutter, 2010).

The relationship is particularly important in the banking sector because banks operate with relatively high financial leverage and rely substantially on deposits and other liabilities to finance their assets. Unlike non-financial firms, banks are also subject to prudential regulations and minimum capital requirements, which constrain their financing decisions.

Consequently, the composition and adequacy of bank capital can affect both profitability and financial stability (Al-Kayed et al., 2014). While greater leverage can potentially enhance shareholders' returns when asset returns exceed the cost of borrowed funds, excessive leverage can increase financial risk and financing costs. Therefore, banks need to maintain an appropriate balance between external financing and equity capital to support their operations while controlling financial risk (Chandra & Sharma, 2015).

The issue is particularly relevant in developing banking systems, where banks play a central role in financial intermediation and economic development. Banks mobilize deposits from surplus units and allocate financial resources through loans, advances, and investments. Their profitability and stability therefore have implications not only for shareholders but also for depositors, borrowers, and the broader economy. Evidence from developing economies suggests that capital structure and leverage can have significant implications for bank profitability. For example, Al-Kayed et al. (2014) examined the relationship between capital structure and bank performance and emphasized the importance of financing decisions in determining bank profitability. Similarly, Rajakumaran and Yogendrarajah (2015) examined capital structure and profitability using debt-to-equity and debt-to-assets ratios as measures of capital structure and profitability indicators including gross profit, net profit ratio, and return on capital employed.

The appropriate financing structure is therefore an important consideration for banks because both excessive leverage and insufficient capital can adversely affect performance. While debt and deposits provide resources for expanding lending and investment activities, excessive dependence on external funds may increase financial risk and reduce profitability. Conversely, maintaining sufficient equity capital can strengthen financial resilience but may affect the benefits associated with leverage. The optimal financing structure consequently depends on bank-specific characteristics, regulatory requirements, market conditions, and the efficiency with which financial resources are employed (Thapa & Gautam, 2021).

Problem Statement

The Capital structure is one of the important financial decisions which has an impact on how a business will get capital for its operations, investment as well as long-term development. It is usually the sum of the long-term fund sources of the firm, such as debt and equity capital, that are employed to finance its assets and activities. Equity could be ordinary share, preference share, debt could be long term loans, debentures, other borrowing. The mix of financing a firm chooses can have an impact on the firm's financial risk, cost of capital, profitability, and sustainability. If the need for finance and funding options are not assessed correctly in a competitive business environment, it might cause financial pressures and can have a negative impact on the firm's future operations.

The significance of capital structure is especially pronounced in the banking industry because commercial banks are the focal point for the mobilization of savings and for financial resources to various sectors of the economy. This makes the study of the relationship between capital structure and profitability significant in the context of financial strength and sustainability of the commercial banks in Nepal. Bank capital allocation and management may affect the financial stability of the banks, as well as their operating efficiency and ability to continue profitable operations. However, little attention has been paid on how individual elements of capital structure is related to profitability of commercial banks in Nepal. The Nepalese banking sector has experienced considerable changes in recent years due to changing economic conditions, financial market developments, and regulatory reforms. Such changes have posed challenges and opportunities for commercial banks, and have made it more important than ever to understand the effects that financing decisions have on a commercial bank's financial performance.

While there has been some research on various aspects of the banking system, the link between capital structure decisions and the performance of commercial banks has received relatively less research attention (Shakya and Subba, 2018). This research gap makes it challenging for policy makers, banking professionals, and other stakeholders to have evidence based guidance to choose the right capital structure for the Nepalese commercial banks. An improved knowledge of this relationship might help to design financing strategies that help to ensure profitability and financial stability. Previously, the research has also focused on the liquidity and financial risk aspects of banks, with little attention paid to the direct effect of capital structure on bank profitability (Shrestha, 2021; Rai, 2023).

It is, therefore, important to explore the issue of capital structure and profitability in the context of commercial banks in Nepal in detail. This study can be a valuable addition to the present literature with the aim of determining the primary

constituent elements of capital structure and analyzing the impact of the different constituent elements on the cash-flow indicators of financial performance. ROA and ROE are particularly useful measures to understand the profitability of banks. Knowing these impacts of various financing arrangements may be useful for bank management when deciding on capital and financing issues. The results could also be relevant for the development and regulation of the banking system, as well as for investors and other stakeholders.

The capital structure theory is of great importance, but it has not been studied empirically yet in the case of Nepalese commercial banks. There may be variations in banking institutions' philosophy of financing and capital management, based on their institutional policies, financial needs, regulatory needs and cost of capital. Some institutions might have more access to equity, while others could have more access to debt or use both types of funding. Therefore, the capital structure of various institutions is affected by their objectives and policies, as well as by the relative cost and availability of various sources of funds. No single financing structure exists which can be adopted by all commercial banks. The benefit of equity financing is that it will reduce the interest burden that the company will suffer in the early stages of business, whereas debt financing can be more appealing when companies need more funds for expansion or investment.

Against this backdrop, the present study focuses on the capital structure and its impact on financial performance of the selected commercial banks in Nepal. The study centres on the link between the components of capital structure and profitability indicators with special reference to ROA and ROE. It is hoped the findings would give empirical backing to commercial banks' capital structure decision making and help policy makers and regulators to draw suitable policy and regulatory measures to ensure a sound and sustainable banking system. This study aims to answer the following research questions:

- What is the relationship between capital structure and financial performance?
- What is the impact of capital structure on financial performance?

Objectives of the study

The general objective is to examine the effect of capital structure on the financial performance of commercial bank in Nepal. The specific objectives are:

- To examine the relationship between debt to equity ratio, debt to total assets, equity to total assets, and long term debt ratio and the financial performance (ROA and ROE) of commercial banks in Nepal.
- To analyze the effect debt to equity ratio, debt to total assets, equity to total assets and long-term debt ratio and the financial performance (ROA and ROE) of commercial banks in Nepal.

Hypothesis of the Study

The relationship between dependent and independent variables is examined in this hypothesis.

- H₁: There is a significant effect of Debt-to-Equity Ratio on Return on Assets.
- H₂: There is a significant effect of Debt-to Total Assets Ratio on Return on Assets.
- H₃: There is a significant effect of Equity-to-Total Assets Ratio on Return on Assets.
- H₄: There is a significant effect on Long-term Debt to Total Assets Ratio on Return on Assets.
- H₅: There is a significant effect of Debt-to-Equity Ratio on Return on Equity.
- H₆: There is a significant effect of Debt-to-Total Assets Ratio on Return on Equity.
- H₇: There is a significant effect of Equity-to-Total Assets Ratio on Return on Equity.
- H₈: There is a significant effect of Long-term Debt to Total Assets Ratio and Return on Equity.

II.Literature Review

The empirical literature on the relationship between capital structure and financial performance provides inconsistent and sometimes contradictory findings, indicating that the effect of financing decisions on profitability is highly context-specific. The debate originates from the proposition of Modigliani and Miller (1958), who argued that capital structure is irrelevant under perfect market conditions; however, subsequent empirical studies have demonstrated that financing choices can influence firm performance because of taxes, financial costs, agency problems, risk, and differences in

institutional and economic environments. Evidence from different countries shows that the direction and magnitude of this relationship vary considerably. For instance, Abor (2005) found that short-term debt was positively associated with ROE and that total debt was positively related to profitability, while long-term debt had a negative relationship with ROE, suggesting that the maturity structure of debt is important in determining its effect on performance. In contrast, Khan (2012) reported a significant negative relationship between leverage and firm performance, arguing that greater dependence on debt increases financial costs and consequently reduces profitability. Similarly, Huang and Song (2006) found a negative relationship between long-term debt, total debt, and ROA in China. However, Taani (2013), focusing specifically on commercial banks in Jordan, found that total debt had a significant positive relationship with net profit, return on capital employed, and net interest margin, although its relationship with ROE was statistically insignificant. These contrasting findings indicate that the effect of leverage may differ substantially between non-financial firms and banks and may also depend on the particular profitability indicator used.

The evidence from Nepal further demonstrates the lack of a consistent relationship between capital structure and financial performance. Poudel (2018), using panel data from 15 Nepalese commercial banks for 2002/03–2014/15, found that capital structure had a significant negative impact on profitability, while capital adequacy ratio, total assets, and GDP growth were significant positive determinants of profitability. In contrast, Acharya (2019), based on 11 Nepalese commercial banks during 2008–2015, found statistically significant relationships between selected capital structure measures, including long-term debt-to-assets and total debt-to-assets, and ROA and ROE. Similarly, Parajuli (2016) reported positive and significant relationships between capital adequacy and ROA, ROE, and NIM, while liquidity and bank size were also positively associated with profitability among domestic and foreign commercial banks. Shrestha (2017) further found that capital adequacy ratio, cost per loan asset, and asset growth were positively associated with ROA and ROE, suggesting that stronger capital positions and effective asset-related management may contribute to improved bank profitability.

The international evidence also reinforces the importance of considering different dimensions of capital structure and different measures of financial performance rather than assuming a uniform effect. Goyal (2013) found an inverse relationship between capital structure and profitability in Indian public-sector banks, suggesting that increased reliance on certain forms of debt may adversely affect profitability. Conversely, Zafar et al. (2016) reported a positive relationship between capital structure and overall banking-sector performance in Pakistan, emphasizing that appropriate capital structure management can enhance bank performance. Singh and Bagga (2019), examining Indian firms, found that an increase in total debt reduced ROA, whereas greater equity financing increased ROA. Likewise, Salim and Yadav (2012) found negative relationships between short-term, long-term, and total debt and ROA, ROE, and EPS, while Tobin's Q was positively related to debt measures, demonstrating that leverage may affect accounting-based and market-based performance differently.

Several studies also suggest that the relationship between capital structure and profitability may be weak or statistically insignificant under particular circumstances. Ebaid (2009) found relatively little evidence that capital structure decisions significantly affected ROA, ROE, and gross profit margin among Egyptian firms. Similarly, San and Heng (2011) reported only a modest relationship between leverage and ROA and ROE among Malaysian construction companies during the financial crisis, while Qamara et al. (2020) found that the debt-to-equity ratio did not significantly influence ROA among Indonesian transportation companies. These findings suggest that leverage alone may not adequately explain variations in financial performance and that industry characteristics, economic conditions, liquidity, firm size, asset structure, and other firm-specific factors may influence the relationship.

The Nepalese literature also provides evidence that bank-specific characteristics interact with capital structure in determining profitability. Pradhan and Kafle (2021) reported a high positive relationship between bank size and ROA, indicating that larger commercial banks may benefit from economies of scale and greater financial resources. Pradhan (2016), however, found that while capital ratio was positively related to ROE, liquidity and quick ratios were negatively related to both ROE and ROA, indicating that maintaining higher liquidity does not necessarily translate into higher profitability. Timilsina (2020) also found that bank size and asset tangibility were positively related to the debt-to-assets ratio, whereas ROA, asset growth, and liquidity were negatively related to debt-to-assets and debt-to-equity ratios. Thus, financing decisions appear to be associated not only with profitability but also with the internal characteristics and financial position of banks.

Theoretical Framework and Definitions of variables

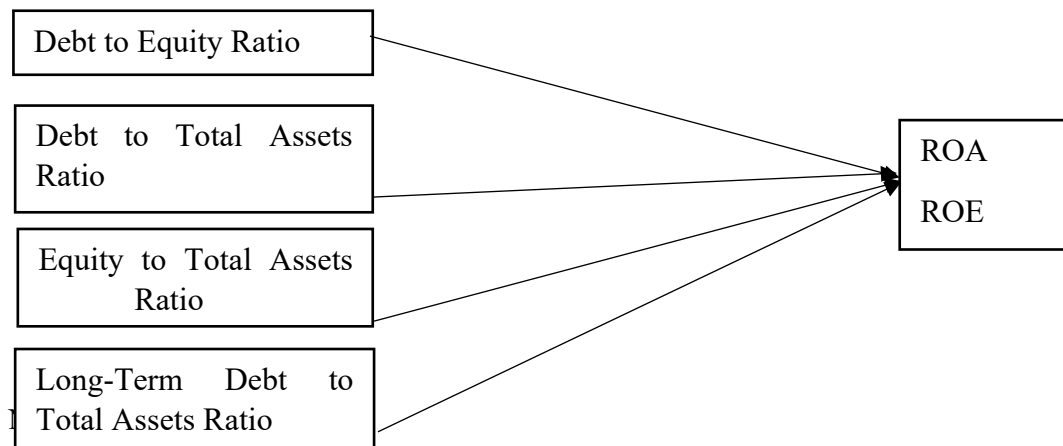
The conceptual model includes variables used in the research and the relationship that can be predicted between variables. This research used the financial performance as two dependent variables: Return on Assets (ROA) and Return on Equity (ROE). The independent variables are different aspects of capital structure such as Debt-to-Equity Ratio, Debt-to-Total Assets Ratio, Equity-to-Total Assets Ratio and Long-Term Debt to Total Assets Ratio. The framework makes the assumption that such measures of capital structure could affect the financial performance of commercial banks.

Figure 1

Theoretical Framework

Independent Variables

Dependent Variables



Definition of Variables

Return on Assets (ROA)

Return on Assets (ROA) indicates the proportion of a company's net income to total assets. It indicates the profit that a company can make by employing its assets. A higher ROA typically means that the company is more efficient in generating revenues with its assets. ROA is thus a typical measure of the overall financial performance and operating efficiency of a company.

Return on Equity (ROE)

Return on Equity (ROE) is a way to gauge the relationship between a firm's net profits after interest and tax (NPAT) and its shareholders' capital stock (SE). It shows the profit earned on the amount invested by the investors of the firm. The ratio is an indication of the profitability of a company's management in utilizing the investments of its shareholders to generate profits, once the operating costs, interest payments and taxes are deducted. The higher the ROE the more that the company's shareholders' money is being utilized to produce profits. It is also advantageous to shareholders for determining the profitability of their investment.

Independent Variables

Debt-to-Equity Ratio

Debt to Equity Ratio is a ratio that indicates the relationship between the total amount of debt and the shareholders' equity held by a company. Shareholders' equity is primarily made up of paid-up capital and retained earnings, whereas debt is primarily comprised of interest-bearing borrowings. The ratio shows the mix of debt financing and equity financing of the firm's assets. It is of value in evaluating the long-term financing policy of the firm and financial leverage. A higher ratio of debt to equity means that the company is relying more heavily on debt financing and could have a higher financial risk.

Debt-to-Total Assets Ratio

Also known as the debt ratio, the Debt-to-Total Assets Ratio shows what percentage of a company's assets are backed by debt. It indicates to creditors the amount that they supply to finance the assets of the firm. The higher the ratio, the more money they need to borrow and the more their obligations are going to be. Generally, the lower the debt ratio, the

better it is for creditors, as they are better protected in case of financial hardships or the liquidation. The shareholders view of debt: The more debt a firm has, the more potential returns to the shareholders, as long as the firm is generating adequate returns on the borrowed funds.

Equity-to-Total Assets Ratio

The Equity-to-Total Assets Ratio reflects the percentage of assets that are financed by the owners of the firm (the shareholders' equity). It gives a rough idea of how much the firm relies on its owners' funds as opposed to borrowed funds. The lower the equity ratio, the more reliance on debt financing; this can mean higher financial risk. Conversely, a higher equity ratio implies that a greater percentage of the company's assets came from equity, and the company has relatively less reliance on debt. The ratio is thus useful to evaluate the financial structure and degree of leverage of a company.

Long-Term Debt-to-Total Assets Ratio

Long-Term Debt to Total Assets Ratio indicates the percentage of long-term debt that a company has used to finance its assets. It indicates how much of the company's assets are financed by the use of long-term borrowing. A higher ratio shows increased reliance on borrowing in the long-term, and can lead to higher financial obligations for the firm from interest payments and repayments. If the long-term debt is high compared to the total assets, this could also be a sign of financial risk, especially if the firm's earnings or cash flow are not adequate to cover the long-term debt.

III. Research Methodology

This study employs a descriptive and causal research design to examine the effect of capital structure on the financial performance of selected commercial banks in Nepal. Descriptive statistics, including mean, standard deviation, minimum, and maximum values, are used to summarize the characteristics of the study variables, while panel regression analysis is employed to examine the effect of capital structure on profitability measured by Return on Assets (ROA) and Return on Equity (ROE).

The population comprises 20 commercial banks in Nepal, from which 10 banks were selected using simple random sampling: Global IME Bank Limited (GBIME), Himalayan Bank Limited (HBL), Everest Bank Limited (EBL), Nabil Bank Limited (NABIL), Siddhartha Bank Limited (SBL), Citizens Bank International Limited (CZBIL), Agricultural Development Bank Limited (ADBL), Kumari Bank Limited (KBL), NIC Asia Bank Limited (NICA), and Sanima Bank Limited (SANIMA). The study uses secondary data for seven fiscal years from 2017/18 to 2023/24, obtained primarily from the annual reports and financial statements of the selected banks, with supplementary information from Nepal Rastra Bank and Nepal Stock Exchange.

The resulting dataset contains observations across banks and years and therefore constitutes panel data. Panel regression is employed to account for both cross-sectional differences among banks and variations over time. Three alternative specifications Pooled Ordinary Least Squares (POLS), Fixed Effects Model (FEM), and Random Effects Model (REM) are considered. The Redundant Fixed Effects Test is used to determine whether fixed effects are required relative to pooled OLS, while the Hausman Test is used to select between the Fixed and Random Effects models. Based on these specification tests, the Random Effects Model is selected for both ROA and ROE.

The empirical models are specified as follows:

Model 1:

$$ROA_{it} = \alpha + \beta_1 DE_{it} + \beta_2 DTA_{it} + \beta_3 ETA_{it} + \beta_4 LTD_{it} + \mu_{it} + \varepsilon_{it}$$

Model 2:

$$ROE_{it} = \alpha + \beta_1 DE_{it} + \beta_2 DTA_{it} + \beta_3 ETA_{it} + \beta_4 LTD_{it} + \mu_{it} + \varepsilon_{it}$$

where,

i=Bank

t=Year

ε_{it} =Error term

ROA= Return on Assets

ROE= Return on Equity

DE= Debt-to-equity Ratio

DTA= Debt-to-Total Assets

ETA= Equity-to-Total Assets

LTD=Long-term Debt Ratio

I.Results and Conclusion

Correlation Analysis

The direction and strength of the relationship among the financial performance variables and capital structure variables are explored through correlation analysis. The ROA and ROE are used in this study as indicators of financial performance, whereas the Total Assets, Total Debt, Total Equity and Long-Term Debt are used as indicators of financial and capital structure variables.

Table 1

Correlation Analysis

Correlation						
Probability	ROA	ROE	Total_Assets	Total_Debt	Total_Equity	Long_Term_Debt
ROA	1					
ROE	0.748139	1				
Total Assets	-0.459145	-0.357734	1			
Total Debt	-0.513809	-0.340085	0.644063	1		
Total Equity	-0.270595	-0.382099	0.906569	0.563545	1	
Long Term Debt	-0.551613	-0.380357	0.594918	0.951814	0.503967	1

The correlation analysis indicates a strong positive relationship between ROA and ROE ($r = 0.748$), suggesting that banks with higher returns on assets also tend to generate higher returns on equity. In contrast, ROA is negatively correlated with Total Assets ($r = -0.459$), Total Debt ($r = -0.514$), Total Equity ($r = -0.271$), and Long-Term Debt ($r = -0.552$). Similarly, ROE shows negative correlations with Total Assets ($r = -0.358$), Total Debt ($r = -0.340$), Total Equity ($r = -0.382$), and Long-Term Debt ($r = -0.380$). These results suggest that greater asset size, debt, equity, and long-term debt are associated with lower bank profitability at the bivariate level.

Regression Analysis

To study the relationship between capital structure and financial performance, taking into account the differences between banks and the changes over time, the author uses panel data regression analysis. Three estimation methods are discussed: Pooled Ordinary Least Squares (POLS), Fixed Effects Model (FEM) and Random Effects Model (REM). Model selection tests are employed to determine which model best fits the data.

The Redundant Fixed Effects Test compares the pooled regression with the fixed-effects model and the Hausman Test helps to determine which model, fixed-effects or random-effects, is more suitable.

Table 2

Panel Model Selection for ROA and ROE

Test	ROA	ROE	Interpretation
Redundant Fixed Effects	$F = 6.754, p < 0.001$	$F = 8.171, p < 0.001$	Fixed Effects preferred over Pooled OLS
Hausman Test	$\chi^2 = 7.676, p = 0.104$	$\chi^2 = 5.595, p = 0.232$	Random Effects preferred over Fixed Effects

The model selection results indicate that the Random Effects Model (REM) is appropriate for both ROA and ROE. The Redundant Fixed Effects Test is significant for both ROA and ROE, indicating significant cross-sectional effects and rejecting the pooled OLS model. The Hausman Test is insignificant for ROA and ROE, suggesting no systematic difference between the Fixed and Random Effects estimators. Therefore, the Random Effects Model is selected for both the ROA and ROE regressions.

Table 3

Random Effect Model-ROA

Variables	ROA Coefficient	ROA p-value	ROE Coefficient	ROE p-value
Total Equity	0.000000	0.0175**	0.000000	0.9885
Total Debt	0.000000	0.2141	0.000000	0.1477
Total Assets	0.000000	0.0022***	0.000000	0.2269
Long-Term Debt	0.000000	0.0054***	0.000000	0.0512
Constant	1.8724***	<0.001	18.1966***	<0.001
R-squared	0.5981		0.4162	
Adjusted R-squared	0.5734		0.3803	
F-statistic	24.1854		11.5842	
Prob. (F-statistic)	<0.001		<0.001	
Durbin-Watson	1.2739		1.5041	

Note: ***, ** denote statistical significance at the 1% and 5% levels, respectively.

The Random Effects regression results indicate that the explanatory variables jointly have a statistically significant relationship with both ROA ($F = 24.1854, p < 0.001$) and ROE ($F = 11.5842, p < 0.001$). The ROA model explains approximately 59.81% of the variation in ROA, while the ROE model explains approximately 41.62% of the variation in ROE.

For ROA, Total Equity has a positive and statistically significant relationship with profitability ($p = 0.0175$), whereas Total Assets ($p = 0.0022$) and Long-Term Debt ($p = 0.0054$) have statistically significant relationships in the negative direction. Total Debt is statistically insignificant ($p = 0.2141$). These findings suggest that equity strength is associated with improved asset profitability, while greater asset size and reliance on long-term debt are associated with lower ROA.

For ROE, none of the capital structure variables is statistically significant at the 5% level. Total Equity ($p = 0.9885$), Total Debt ($p = 0.1477$), and Total Assets ($p = 0.2269$) are insignificant. Long-Term Debt is borderline insignificant at the 5% level ($p = 0.0512$), although it would be considered significant at the 10% level if your study adopts a 10% significance threshold. Thus, the effect of capital structure on financial performance differs depending on whether profitability is measured by ROA or ROE.

Discussion

This study examines the effect of capital structure on the financial performance of selected commercial banks in Nepal, using Return on Assets (ROA) and Return on Equity (ROE) as measures of financial performance. The Random Effects Model results indicate that the relationship between capital structure and bank profitability varies across capital structure components and performance measures.

The results indicate that Total Equity has a positive and statistically significant effect on ROA. This finding is consistent with Berger (1995), who reported a positive association between bank capitalization and profitability. It is also consistent with Chalise and Adhikari (2022) and Panta (2018), who found that stronger equity positions contribute positively to the financial performance of Nepalese commercial banks. In contrast, Total Assets have a negative and statistically significant effect on ROA. The finding is consistent with Bhandari (2024) and is broadly in line with Rajan and Zingales (1995), suggesting that greater firm size does not necessarily lead to superior financial performance. The negative relationship may also reflect differences in asset utilization and operational efficiency among the sampled banks. Similarly, Long-Term Debt has a negative and statistically significant effect on ROA. This finding is consistent with Jaishi and Poudel (2019) and is broadly consistent with Titman and Wessels (1988) regarding the potential adverse consequences of higher leverage. The coefficient of Total Debt is positive but statistically insignificant with ROA. This finding is consistent with Chalise and Adhikari (2022), who reported that not all debt-related measures significantly affect the profitability of Nepalese commercial banks.

The results for ROE differ from those obtained for ROA. None of the explanatory variables is statistically significant at the 5% level. Total Equity, Total Debt and Total Assets have statistically insignificant relationships with ROE. Long-Term Debt is also insignificant at the 5% level, although the result is marginal at the 10% significance level. This finding is consistent with Bhandari (2024), who reported a weak relationship between capital structure and ROE among Nepalese commercial banks, but differs from Berger (1995), who found a positive association between bank capitalization and performance.

Conclusion

The findings indicate that capital structure has a significant relationship with ROA. Total equity has a positive and statistically significant effect on ROA, suggesting that a stronger equity base is associated with improved asset profitability. In contrast, total assets and long-term debt have significant negative effects on ROA, indicating that increases in bank size and reliance on long-term debt may be associated with lower profitability. Total debt also shows a negative relationship with ROA, although its effect is statistically insignificant. These findings suggest that the composition and level of financing are important considerations in determining the profitability of Nepalese commercial banks.

For ROE, the estimated capital structure variables do not exhibit statistically significant effects. This difference between the ROA and ROE results suggests that the relationship between capital structure and financial performance may vary depending on the performance measure used. While capital structure appears to be an important determinant of profitability when measured through asset returns, its effect is less evident when performance is evaluated from the shareholders' perspective.

The findings have implications for bank managers, investors, and regulators. Bank managers should maintain an appropriate balance between equity and debt financing and carefully evaluate the cost and repayment obligations associated with long-term debt. The positive and significant effect of total equity on ROA suggests that strengthening the equity base through retained earnings and appropriate capital enhancement strategies may support profitability. At the same time, banks should avoid excessive reliance on long-term debt that could increase financing costs and place pressure on profitability.

The findings also provide useful implications for Nepal Rastra Bank and other regulatory authorities in formulating policies concerning bank capitalization, leverage, and financial stability. For investors, the findings highlight the importance of considering banks' capital structure alongside profitability when evaluating investment decisions.

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