Journal of Economics and Management ISSN: 2350-8779
DOI: https://doi.org/10.3126/jem.v5i1.86946

Impact of Capital Structure Management on Profitability of Commercial Banks in Nepal

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Abstract
This in-depth article examines the complex interplay between capital structure and profitability in many Nepalese commercial banks. The statistical analysis of the study incorporates secondary data. Descriptive and casual comparative analyses were performed using SPSS software, utilizing data collected from bank websites and employing correlations and multiple regression models for hypothesis testing. The study utilizes regression and correlation analysis to assess the influence of Short-term Debt Ratio (STDR), Long-term Debt Ratio (LTDR), Total Debt to Assets Ratio (TDAR), Total Debt-equity Ratio (TDER), and Return on Equity (ROE) by analysing data from various financial accounts. The results show that there are strong links between the parts of capital structure and measures of profitability. The findings from this research offer significant assistance for strategic financial decision-making, emphasizing the complex relationships that influence the interaction between capital structure decisions and business profitability among Nepalese commercial banks. There is significant relationship between STDR, LTDR, TDAR and TDER with ROA of commercial banks in Nepal.

Keywords: *Return on Equity, Total Debt to Assets Ratio, Short Term Debt Ratio, Long Term Debt Ratio, Total Debt-equity Ratio*

Introduction

Capital structure is a term that revolves around the organization and arrangement of various financial components within a business. Essentially, it pertains to how a company secures its long-term funds from different sources. The amalgamation of equity share capital, preference share capital, debentures, long-term loans, retained earnings, and other sources of long-term funds constitutes the capital structure of a firm. This intricate combination of debt and equity securities outlines how a company finances its assets over the long haul. Financial structure, on the other hand, involves the relative proportion of diverse sources of funds employed by a business. While capital structure specifically deals with long-term financing, financial structure encompasses the broader array of funding sources. It's about arranging these financial sources in a manner that is proportionate and reflective of their relative magnitude. The permanency associated with capital structure distinguishes it from short-term borrowing, underlining its long-term nature. Hypothesis Formulation, H1: There is significant impact of DTAR on ROE of commercial banks in Nepal. H2: There is significant relationship between STDR and ROE of commercial banks in Nepal. H1: There is significant impact of LTAR on ROE of commercial banks in Nepal. H2: There is significant relationship between TDER and ROE of commercial banks in Nepal.

Review of literature

Pham, Hoang, and Pham (2022) performed study on capital structure and bank profitability: evidence from Vietnam by. Clear and convincing This research investigates the impact of capital structure on the profitability of Vietnamese commercial banks. This study analyses the correlation between capital structure and profitability utilizing an unbalanced panel dataset of Vietnamese commercial banks from 2012 to 2018, a pivotal era for the execution of the Prime Minister's directive (254/QD-TTg) aimed at restructuring the banking system. The authors use client deposits and non-deposit liabilities to show how Vietnamese commercial banks are structured. A study of 30 Vietnamese commercial banks indicated that deposits from customers hindered the banks' revenues, whereas debts that aren't

deposits benefitted them. The study suggests that Vietnamese commercial banks need to be more thorough and fairer when they look at assets and loans before giving out credit. Investment projects and long-term loans need to be reviewed very closely to make sure that bank assets are strong. This study investigates the influence of capital structure on the profitability of Vietnamese commercial banks, addressing a gap in the existing literature. Sahibzada (2022) investigated the impact of capital structure on the profitability of Afghan commercial banks. This study investigates the impact of capital structure on the profitability of Afghan commercial banks. We used quantitative methods to reach the goal. The panel data was derived from the audited financial statements of nine commercial banks spanning the years 2013 to 2017. The model for linear regression.

Ayalew (2021) examined the capital structure and profitability of Ethiopian private banks through the use of panel data. The study employed panel fixed effects to analyse the empirical relationship between capital structure, as represented by total and short-term debt ratios, and the profitability of private banks in Ethiopia from 2013/14 to 2018/19. The study examines 16 private banks. Regression analysis indicates that capital structure determinants and various bank-specific characteristics significantly influence banks' profitability. When earnings go up, the return on assets, net interest margin, total and short-term debt ratios, loan-to-deposit ratios, and credit risks frequently go up as well. Banks that have been around longer make more money than newer ones. The size is bad for the ROA model, which suggests that Ethiopian private banks aren't doing as well as they could be. The coefficient estimates for the cost–income ratio and employee productivity differed. was used to look at SPSS 22.0 panel data. This study reveals that Afghan banks obtain their money from deposits. This means that these banks have a lot of debt. This study indicates a statistically insignificant positive correlation between the debt-to-total-assets ratio and the net interest margin. But the loan-to-deposit and deposit-to-asset ratios have a huge impact on how much money commercial banks make from interest. On the other hand, the size and growth of the assets were carefully picked when the financing structure was being set up. Ultimately, increasing the size of the bank, reducing loans and non-deposit liabilities, increasing equity financing, and properly using deposits can all help the bank make more money and be worth more.

Otekunrinetal. (2020) looked into the capital structure and profits of Nigerian deposit money organisations. The profitability of eight Nigerian Deposit Money Banks was analysed from 2003 to 2018 (16 years) to assess the impact of capital structure on profitability. This study utilised a descriptive research methodology and regression analysis. The study utilised secondary data obtained from the annual reports of selected Nigerian Deposit Money Banks for the years 2003 to 2018. The research revealed a negative correlation between capital structure (debt-to-equity ratio and leverage ratio) and profitability (returns on equity). The debt-equity ratio and leverage ratio can have a major effect on profits if they aren't managed well. According to the trade-off theory and the agency theory, a corporation should identify the appropriate capital structure (a mix of debt and equity) in order to produce more money, raise its value for shareholders, and minimize agency costs. You could also think about using retained earnings (money you already have).

Zaman, Ullah, and Ali (2020) looked into how capital structure and profitability are related from the point of view of two banks. We examined 250 financial statements from 2006 to 2016 to analyse the profitability and financial status of Islamic and conventional banks listed on the Karachi Stock Exchange. The study examines the link through regression analysis. In ordinary banks, the D/E ratio and ROA were closely related, but not in Islamic institutions. All deposits are seen as debts in the conventional banking system. Islamic banks only see current accounts as debts, which makes the outcomes easier to understand. Deposits in Islamic banks that are based on Modaraba are seen as equity. This book conceptually contributes to the existing literature on Islamic financing in Pakistan. The study suggests that Islamic banks could increase savings deposits due to their risk-free and equity-like attributes. Bhatt and Jain (2020) looked into the capital structure and performance of Nepalese banks. For a country's economy to grow, it needs a financial system that works. The Islamic banking industry in Pakistan has grown a lot in the recent few years. It still has issues with financial stability, though. This study investigates the impact of working capital and financial structure on the profitability of banks in Pakistan. The study utilised the GLS estimation method on five Islamic banks from 2006 to 2014 and on fifteen conventional banks from 2008 to 2014. Working capital and the quantity of bank credit are independent factors, while ROA, ROE, and NI are dependent variables. To

lessen discrepancies and collinearity, control factors include the size of the bank, the deposit ratio, GDP, and CPI. The research indicated that both Islamic and conventional banks have reduced profitability when their working capital increases. Statistically, Islamic banks generate more money when they use financial leverage, but normal banks do the opposite.

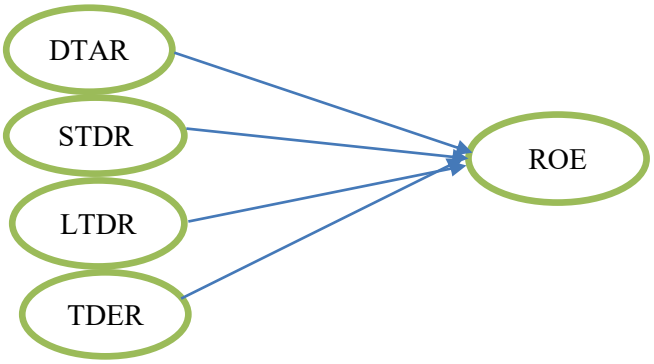
Noreen (2019) A study of the capital structure and profitability of both Islamic and regular banks in Pakistan. This study examines the impact of capital structure on the profitability of Islamic and conventional banks. It also looks into if their capital structures are the same. From 2006 to 2016, a sample of ten banks was taken. We utilised a t-test to compare the capital structures of Islamic and conventional banks. We also conducted a regression analysis (Fixed effects model) to see how capital structure affects profitability. Both types of banks had the same capital structure, but they were substantially different in size. The capital arrangements of both Islamic and conventional banks had a detrimental effect on ROA. ROE showed a strong link to the capital structures of both Islamic and traditional banks. Furthermore, two explanatory factors had a positive correlation with EPS for both Islamic and conventional banks, whilst two others displayed a negative correlation. This research examines economies of scale and two principal capital structure theories pecking order and trade-off with relation to conventional and Islamic banks in Pakistan. Musah (2018) looked into the capital structure and profitability of Ghanaian commercial banks. We examined the capital structure (the ratios of short-term debt to long-term debt and total debt) and profitability (the ratios of Return on Assets and Return on Equity) of commercial banks in Ghana. A six-year examination of 23 banks from 2010 to 2015 based on annual reports. The analysis employed descriptive statistics, correlation, and panel regression techniques. Even if the minimum equity capital has gone enhanced, Ghanaian banks are still very leveraged. Debt financing makes up 84% of their total capital, and short-term loans make up 77% of that. The regression analysis indicated that the profitability of Ghanaian banks is adversely correlated with both short-term and long-term debt ratios. The profitability of Ghanaian banks showed a positive relationship with the overall debt ratio. The control factors indicated that company size, foreign ownership, and bank age were positively correlated with profitability. On the other side, an increase in consumer deposits was bad for profits. The data reveal that Ghanaian commercial banks need to find alternative ways to obtain money besides deposits because deposits impair their revenues. The results reveal that businesses should use the correct mix of short- and long-term financing to make banks more money.

Research Methodology

Research Design, this study has utilized a descriptive research design and causal-comparative research design to address the issues raised in the study that impact the performance of the selected commercial banks in Nepal. The descriptive research design aids in fact-finding, seeking sufficient information about the components of Capital Structure Management and the performance of Nepalese Commercial Banks. This design involves the systematic collection and presentation of data to provide a clear depiction of the situation. Descriptive statistics are employed to describe the nature of data for the commercial banks during the fiscal years 2015 to 2024. *Population and sample,* the population of my study consists of all the data points or observations relevant to the financial performance, risk management indicators, and other variables of whole Nepalese Banking Industry. Similarly, the sample in my study are collected from selected Commercial Banks (selected among 20 number of commercial banks) i.e., PCBL, NABIL, and PBL over the span of 10-years period.

Data collection

Figure1: Conceptual Framework



Data collection processing procedure and data analysis method

The primary objective of this study is to investigate the correlation between Capital Structure Management and bank performance within the Nepalese banking context. To elucidate the relationship between Capital Structure Management and bank performance, the study employs the following models. Model 1 In this model, the dependent variable is the return on equity, and the independent variables encompass DTA, STDR, LTDR and TDE

$ROE = \beta 0 + \beta 1 DTA + \beta 2 STDR + \beta 3 LTDR + \beta 4 TDE + e$

Where,

DTA= Debt to Assets

STDR = Short Term Debt Ratio

LTDR = Long Term Debt Ratio

TDE = Total Debt to Equity Ratio

ROE = Return on Equity

Table 1: Descriptive Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
STD		.03	.93	.8513	.13893
LTD		.00	.03	.0139	.00810
TDA		.06	.95	.8652	.13588
TDE		.52	17.16	8.7468	3.67537
ROE		.10	.27	.1634	.04145

Table 1 provides a detailed glimpse into the financial landscape, presenting descriptive statistics for various key metrics across a set of entities. These metrics include Standard Deviation (STD), Long-Term Debt (LTD), Total Assets (TDA), Total Debt to Equity (TDE), and Return on Equity (ROE). Each metric is accompanied by essential statistical measures: Minimum, Maximum, Mean, and Standard Deviation.

Table 2: Correlation Analysis**,** Correlation Analysis on ROE

	STD	LTD	TDA	TDE	ROE
STD	1				
LTD	-.401*	1			
TDA	.999**	-.351*	1		
TDE	0.170	-.430**	0.149	1	
ROE	.013*	-.196**	.131*	.280**	1
*. Correlation is significant at the 0.05 level (2-tailed).					
**. Correlation is significant at the 0.01 level (2-tailed).					

Table 2 presents a correlation analysis focusing on Return on Equity (ROE) as the dependent variable and four independent variables representing various aspects of capital structure: Short-Term Debt Ratio (STD), Long-Term Debt Ratio (LTD), Total Debt to Assets Ratio (TDA), and Total Debt to Equity

Ratio (TDE). Understanding these correlations is essential for unraveling the complex interplay between capital structure management and profitability.

Regression Analysis

Table 3: Model Summary (ROE)

Model	R	R Square	Adjusted R Square	S.E of Estimate
1	.797[a]	.676	.618	4.229

The model summary reveals that the regression model has a R value of 0.797. This means that there is a strong positive link between the dependent variable and the collection of predictors. The R Square score of 0.676 shows that the independent variables in the model explain around 67.6% of the changes in the dependent variable. The Adjusted R Square of 0.618 shows that the model still explains 61.8% of the variability, even after taking into account the number of predictors. This means that the model fits well. The Standard Error of Estimate (4.229) shows how far off the predicted values are from the regression line on average. A lower value would mean a more accurate model, but in this case, it shows a middling level of prediction accuracy. In general, the model shows that it can explain things rather well.

Table 4: ANOVA(ROE)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1463.9	4	413.265	22.376	.000[b]
Residual	625.4	36	22.929		
Total	2089.3	40			

The ANOVA findings show that the regression model utilised in the study is statistically significant. The regression sum of squares is 1463.9 with 4 degrees of freedom, and the residual sum of squares is 625.4 with 36 degrees of freedom. This gives the regression a mean square value of 413.265 and the residual a mean square value of 22.929. The F-value of 22.376 is substantially greater than the essential F-value at the 5% significance level, while the significance level (Sig. = .000) is below 0.05. This shows that the entire model is very important, which means that the independent variables have a strong and statistically significant effect on the dependent variable. In other words, the model's predictors account for a large part of the changes in the dependent variable.

Table 5: Coefficients (ROE)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-15.831	7.963		-1.983	.055
STDR	3.110	.702	.613	4.456	.000c
LTDR	6.235	2.138	.317	2.765	.000c
TDA	1.135	1.571	.135	0.684	.001c
TDE	-2.135	2.561	-.235	-2.684	.006c

Dependent Variable: Return on Equity

The regression investigates the complex interplay of several elements of capital structure and Return on Equity (ROE). In this case, the independent variables are the Short-Term Debt Ratio (STDR), the Long-Term Debt Ratio (LTDR), the Total Debt to Assets Ratio (TDA), and the Total Debt to Equity Ratio (TDE). The dependent variable is ROE. The goal of the investigation is to find out how managing capital structure affects the Return on Equity profitability statistic. Starting with Table 3, the Model Summary gives a full picture of how well the regression model works. The R Square value of 0.676 shows that the independent variables explain about 67.6% of the changes in ROE. The Adjusted R

Square of 0.618, taking into account the number of predictors in the model, gives a more cautious estimate of how well the model fits the data. The Standard Error of Estimate (S.E) of 4.229 shows how close the predicted values are to the actual values, which shows how accurate the model is. Table 4 shows the ANOVA table, which tells us how statistically significant the regression model is. The F-statistic of 22.376 and the p-value of .000 show that the overall model is statistically significant. This indicates that at least one of the independent variables significantly influences the variability seen in ROE. The Regression Sum of Squares (1463.9) shows how much the model can explain the variability, while the Residual Sum of Squares (625.4) shows how much variability is left over. The Total Sum of Squares (2089.3) shows how much the dependent variable changes overall. Table 5, the Coefficients table, goes into more detail on how each independent variable affects ROE. It tells you about the Unstandardized Coefficients, Standardized Coefficients (Beta), t-values, and how important they are. Total Debt to Equity Ratio (TDE): The unstandardized coefficient of -2.135 means that, on average, ROE will go down by 2.135 units for every one-unit rise in the total debt to equity ratio. The standardized coefficient (Beta) of -0.235 shows that the total debt to equity ratio has a negative effect on ROE. The t-value of -2.684 is statistically significant. Talk Return on Equity has a positive relationship with both the Short-Term Debt Ratio (STDR) and the Long-Term Debt Ratio (LTDR): The positive relationship between STDR and ROE implies that short term debt may be crucial in improving a company's return on equity. For Return on Equity, there is a negative correlation with the Total Debt to Equity Ratio (TDE): The negative association with TDE suggests that excessive leverage may adversely affect ROE. Return on Equity: Empirical Validation and Practical Implications

Conclusion

The conclusion of the paper, rooted in a comprehensive analysis of correlation and regression outcomes, unveil a nuanced relationship between capital structure components and key financial performance indicators Return on Equity (ROE). These indicators, pivotal for evaluating a firm's profitability and shareholder value, are influenced by the intricate dynamics of short-term debt (STDR), long-term debt (LTDR), total debt to equity ratio (TDE), and total debt to assets ratio (TDA). The impact of these findings resonates not only in theoretical constructs but has profound implications for the daily and long-term operations of firms, ultimately shaping their financial viability and sustainability.

The positive correlation between Short-Term Debt Ratio (STDR) and ROE indicates that effective management of short-term debt can potentially boost returns on equity. Conversely, the negative correlation between Long-Term Debt Ratio (LTDR) and ROE suggests, Total Debt to Equity Ratio (TDE) shows a negative correlation with ROE, emphasizing that excessive leverage might have a diminishing effect on both profitability indicators. This has implications for both daily and long-term operations. In daily operations, a high level of leverage may lead to higher interest payments, impacting net income and, consequently, returns on equity. It signals the need for firms to carefully balance their debt-equity mix to maintain optimal returns. In the long term, the negative impact on ROE suggests that managing leverage is crucial for sustaining earnings growth. It aligns with the principle that a balanced capital structure, avoiding excessive leverage, is vital for long-term financial stability.

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