International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 05 | May - 2023 SJIF 2023: 8.176 ISSN: 2582-3930

FINANCIAL PERFORMANCE ANALYSIS OF NEPALESE COMMERCIAL BANKS IN THE CAMEL FRAMEWORK

RADHA RANA

MBA Scholar

Abstract

This study has examined the financial performance analysis of Nepalese financial institutions in the framework of CAMEL. The descriptive and casual comparative research designs has been adopted for the study. Nine commercial banks has taken as a sample from the Judgmental sampling technique and has been analyzed using regression model. The regression results revealed that assets quality, capital adequacy ratio, management efficiency, return on equity has significant effect on return on assets. Return on assets has significant effect on return on equity, whereas liquid ratio, assets quality, capital adequacy ratio, management efficiency has insignificant effect on return on equity. This study concludes that capital adequacy ratio and return on assets are the most important factor that analyze the financial performance of financial institutions in the framework of CAMEL.

Key words: Return on assets, return on equity, assets quality, capital adequacy ratio, management efficiency, earning capacity and liquidity ratio

1. INTRODUCTION

Financial institutions, in particular depositary banks, collect savings from people who have savings and offer loans to people who need money. As a result, the banking industry acts as the financial sector's skeleton (Arif & Anees, 2012). By directing the necessary funds for the economy, financial institutions, often known as the banking sector, play a significant role in improving economic growth and development (Fayed, 2013). It is regarded as the world's lifeblood, and in the past 20 years, significant changes in this industry have been observed everywhere (Afroj, 2022). Due to increased rivalry within the banking industry, this trend has advanced (Srairi, 2010). Due to these financial organizations' strategy adjustments, a significant number of new markets have arisen (Ariss, 2010). As a result, in order to remain competitive, banks must demonstrate their profitability, asset quality, and managerial effectiveness (Afroj, 2022).

Following the establishment of regulations governing merger and acquisitions and the obligation to boost paid-up capital, financial institutions began to combine and acquire one another, which led to a decline in the number of banks and financial institutions (BFIs) (NRB, 2018).

In order to maintain and safeguard the interests of depositors, lenders, shareholders, and other stakeholders, regular check-up of financial institution is required. Financial performance analysis - also known as a financial health check-up of any corporate concern (Gautam, 2020).

For regulators and examiners, CAMEL is a useful instrument for analyzing financial performance (Barr, Killgo, Seims & Zimmel, 2002). The efficiency of this approach to examine the financial performance of commercial banks and financial institutions was demonstrated by studies conducted by (Gasbarro, Sadguna & Zumwalt, 2002) and (Baral, 2005). Therefore, the purpose of this study is to investigate how the financial performance analysis based on CAMEL components affects the profitability of Nepalese BFIs.

2. LITERATURE REVIEW

Gautam (2020) used the CAMEL framework to analyze the financial performance and factors affecting financial performance of Nepalese financial depositary banks. The descriptive casual comparative research design underlies this study. Financial performance is analyzed using indicators including capital adequacy ratio, asset quality, managerial effectiveness, earnings, and liquidity. According to the regression study, return on assets and capital sufficiency and return on equity have strong positive relationships, whereas return on assets and asset quality have significant negative relationships. Return on equity, or ROE, however, has a large negative association with capital adequacy while having a significant positive link with asset quality and ROA. To maximize the return on assets and earnings of financial institutions, capital sufficiency and asset quality are crucial factors.

Under the CAMEL model technique, Magoma, Mbwambo, Sallwa, and Mwasha (2022) looked at the financial performance of Tanzania's listed commercial banks. According to the findings, management effectiveness and capital adequacy ratio have the biggest effects on commercial banks that are listed on the Dar es Salaam Stock Exchange in Tanzania.

Kandel (2019) used the CAMEL framework to evaluate and analyze the performance of commercial banks. The data analysis shows that earning quality and adequate capital are the key determinants determining both ROA and ROE, whereas asset quality and liquidity have moderating effects on bank performance. According to the data, the management efficiency has little effect on ROA and ROE.

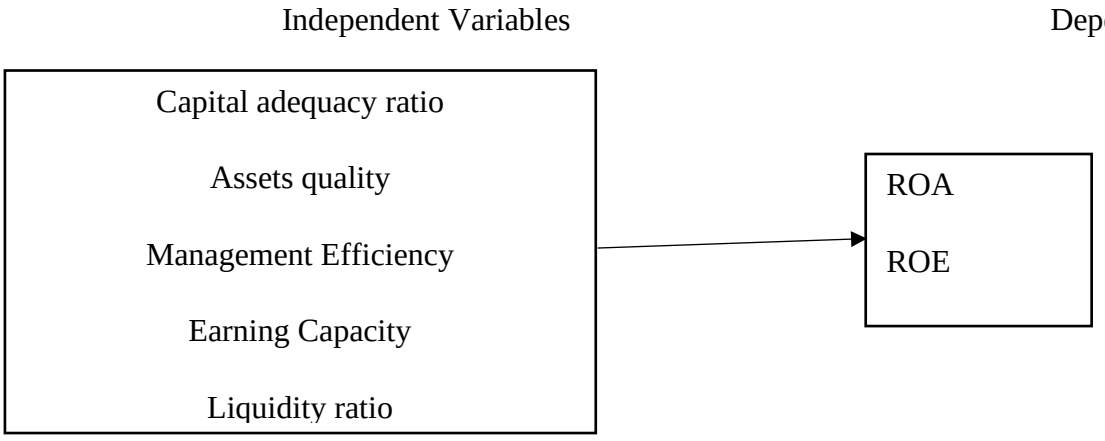
Comparative capacity of financial performance of banks in Sri Lanka is evaluated by Lebbe and Rauf (2016). All of the CAMEL model's criteria (capital sufficiency, asset quality, management quality, earning quality, and liquidity) were employed as independent variables, and return on equity and return on assets were taken into account as the indicators of financial performance. Based on the results, it can be concluded that capital sufficiency, asset quality, and earning quality were strongly connected with financial performance, whereas management effectiveness and liquidity were not.

3. RESEARCH METHODOLOGY

This study examines financial performance analysis of Nepalese financial institutions in the framework of CAMEL over the period of 10 years. This study has adopted descriptive and casual comparative research design. Capital adequacy ratio, quality assets, liquidity position, management quality, market sensitivity and earnings are independent variables in this study, while return on asset and return on equity are the dependent variables.

There are altogether 26 commercial banks as per the annual report of Nepal Rastra Bank (2022). Therefore, population of this study is all 26 commercial banks of Nepal. Out of them, 90 observations from 9 commercial bank were taken as a sample. The bank selected for the study are: Sunrise Bank, NMB Bank, Nepal Investment Bank, Kumari Bank Limited, Laxmi Bank Limited, Himalayan Bank Limited, Nepal SBI Bank Limited, Nepal Bank Limited and Everest Bank Limited. Judgemental sampling method was used in choosing the banks for the study. The required data are retrieved from the annual report of respective banks.

Research Framework



Note: Research Framework

The Model

ROA= α + β1 Assets +β2CAR + β3 Liquid ++ β4 Management+ β5 ROE + e

ROE= α + β1 Assets +β2CAR + β3 Liquid ++ β4 Management+ β5 ROA+ e

Where CAR = Capital adequacy ratio, ROA = Return on assets, ROE = Return on equity, Management = Management efficiency, Assets = Assets quality, Liquid = Liquidity ratio

Earning Performance

Profitability or earning power maintains a financial institution's good health. Different metrics of profitability exist. Commonly used profitability metrics include return on assets, return on equity, interest-spread ratio, earnings-spread ratio, gross margin, operating profit margin, and net profit margin (Hamal & Adhikari, 2020).

Capital Adequacy Ratio (CAR)

How successfully financial institutions can respond to shocks to their balance sheets is ultimately determined by their capital adequacy ratio (Hamal & Adhikari, 2020). It safeguards the bank from going bankrupt and upholds the depositors' faith in the institution. While a weak capital base results in too many faults, sound capital allows the bank to optimize profits (Kleff & Weber, 2008).

Management Efficiency

To gauge the effectiveness and efficiency of the bank's management, management efficiency is utilized. The organizational success will increase as the managerial effectiveness does, and vice versa (Gautam, 2020). Although it's challenging to assess, good management is the key to bank performance. According to Hamal and Adhikari (2020), it is essentially a qualitative characteristic that applies to specific institutions.

Assets Quality

Asset quality is a significant component of the CAMEL model, which is used to examine management evaluation and bank performance (Young, 1997). It serves as a gauge of a bank's financial stability (Whalen, 1991). Poor asset quality erodes capital base and causes financial issues. Large losses are frequently incurred by banks with underperforming assets (Gautam, 2020).

Liquidity Ratio

The term "liquidity" describes a bank's capacity to fulfill both its short-term commitments and its own lending commitments. Low liquidity endangers the bank's capacity to remain solvent, whereas high liquidity endangers the bank's ability to make a profit. Liquidity and profitability must therefore be traded off (Gautam, 2020).

Hypotheses

H_1: There is significant impact of capital adequacy ratio on return on assets

H_2: There is significant impact of Assets quality on return on assets

H_3: There is significant impact of Management Efficiency on return on assets

H_4: There is significant impact of Earning Capacity on return on assets

H_5: There is significant impact of Liquidity ratio on return on assets.

H_6: There is significant impact of capital adequacy ratio on return on equity.

H_7: There is significant impact of assets quality on return on equity.

H_8: There is significant impact of management efficiency on return on equity.

H_9: There is significant impact of earning capacity on return on equity.

H_{10}: There is significant impact of liquidity ratio on return on equity.

4. PRESENTATION AND ANALYSIS OF DATA

Descriptive Statistics

This shows descriptive statistics - mean, standard deviation, minimum and maximum values for the variables associated with 9 sample banks for the period 2012 to 2021. ROA refers to return on assets, CAR refers to Capital adequacy ratio, ROA refers to return on assets, ROE refers to return on equity and N is the number of observations.

Table 1: *Descriptive data summary of variables*

Variables	ROA	Assets	Liquid	CAR	Management	ROE
Mean	1.51222	12.74690	29.5990	12.56144	4.879262	14.10043
Max	2.79000	61.90273	41.4100	17.91000	8.467767	30.47000
Min	0.28000	-34.5684	19.3000	-5.82000	1.793075	0.000000
Std.	0.50493	14.95386	4.97931	3.108935	1.605097	5.857059
N	90	90	90	90	90	90

Source: Author's computation from E-views 12 SV, 2022

The ROA ratio of selected banks ranges from a minimum 0.2800 to 2.7900 with an average 1.51 percent. Similarly, the assets quality ranges in value from -34.5684 to 61.9027 with an average 12.74690 percent. Liquidity ratio ranges from 19.300 to 41.41 with an average 29.5990 percent. With a minimum value of CAR of -5.8200 to maximum value of 17.9100, the average value is 12.56 percent. Furthermore, management efficiency and ROE having an average value of 4.879 and 14.100 percent respectively.

Correlation Analysis

In this section, we present the correlation coefficients between dependent and independent variables and also correlation between explanatory variables to show the direction and the strength of the relationship between any pair of explanatory variables as well as the explained variables by using correlation matrix.

Correlation Matrix of Variables (ROA)

Table 2: *Correlation Matrix of Variables (ROA)*

Correlation Probability	ROA	Assets	CAR	Liquid	Management	ROE
ROA	1.00000 ----------					
Assets	-3.66973 (0.0004)	1.00000 ---------				
CAR	0.299548 (0.0041)	-0.208556 (0.0485)	1.00000 ---------			
Liquid	0.027309 (0.7983)	0.241054 (0.0221)	-0.274313 (0.0089)	1.000000 -------		
Management	-0.290423 (0.0055)	0.015724 (0.8831)	0.168618 (0.1121)	-0.236470 (0.0248)	1.00000 --------	
ROE	0.483734 (0.0000)	-0.084331 (0.4294)	-0.030430 (0.7759)	0.240847 (0.0222)	-0.337225 (0.0012)	1.00000 -------

Source: Author's computation from E-views 12 SV, 2022

The correlation coefficient shows that there is positive relationship between capital adequacy ratio, liquidity ratio, return on equity and return on assets which indicate higher the capital adequacy ratio, liquidity ratio, return on equity, higher would be the return on assets. Assets quality and management efficiency shows negative relationship with return on assets. This result also shows that assets quality, capital adequacy ratio, management efficiency, return on equity has significant relationship with return on assets.

Correlation matrix of variables (ROE)

Table 3: *Correlation Matrix of Variables (ROE)*

The

Correlation Probability	ROE	Assets	CAR	Liquid	Management	ROA
ROE	1.00000 --------					
Assets	-0.084331 (0.4294)	1.00000 --------				
CAR	-0.030430 (0.7759)	-0.208556 (0.0485)	1.000000 ---------			
Liquid	0.240847 (0.0222)	0.241054 (0.0221)	-0.274313 (0.0089)	1.00000 ----------		
Management	-0.337225 (0.0012)	0.015724 (0.8831)	0.168618 (0.1121)	-0.236470 (0.0248)	1.000000 ---------	
ROA	0.483734 (0.0000)	-0.366973 (0.0004)	0.299548 (0.0041)	0.027309 (0.7983)	-0.290423 (0.0055)	1.000000 ---------

correlation coefficient results shows that there is positive relationship between liquidity ratio, return on assets and return on equity which indicate higher the liquidity ratio, return on assets, higher would be the return on equity. Assets quality, capital adequacy ratio and management efficiency shows negative relationship with return on equity. This results shows liquidity ratio, management efficiency, return on assets has significant relationship with return on equity.

Breusch Pagan test

First, common effect regression is run. Then, Lagrange multiplier test is conducted, Breusch-Pagan (BP) test were conducted to find out which method is appropriate for this study.

Table 4: *Breusch-Pagan Langrange Multiplier Test (ROA)*

	Cross Section	Time	Both
Breusch Pagan	0.509067	13.18656	13.69563
Prob.	(0.4755)	(0.0003)	(0.0002)

Source: Author's computation from E-views 12 SV, 2022

Breusch-Pagan Langrange Multiplier test is used to select a suitable model for Panel data analysis.

Here, the p-value is 0.4755 which is greater than 0.05. So, Null hypothesis is accepted. It means that Pooled OLS method is appropriate for this study.

Table 5: *Breusch-Pagan Langrange Multiplier Test (ROE)*

	Cross Section	Time	Both
Breusch Pagan	1.743136	0.744720	2.487856
Prob.	(0.1867)	(0.3882)	(0.1147)

Source: Author's computation from E-views 12 SV, 2022

Here, the p-value is 0.1867 which is greater than 0.05. So, Null hypothesis is accepted. It means that Pooled OLS method is appropriate for this study.

Regression Analysis

This shows regression analysis result of variables of financial performance. The study of the regression model used in this study.

Regression Analysis of ROA

$$ROA = \alpha + \beta 1\ Assets + \beta 2 CAR + \beta 3\ Liquid + \beta 4\ Management + \beta 5\ ROE + e$$

Table 6: *Panel Regression analysis of ROA*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Assets	-0.009354	0.002913	-3.211498	0.0019
CAR	0.048064	0.014095	3.409916	0.0010
Liquid	0.003447	0.009205	0.374436	0.7090
Management	-0.061195	0.027981	-2.187023	0.0315
ROE	0.034104	0.007683	4.438810	0.0000
C	0.743382	0.393630	1.888529	0.0624
Model Summary				
R- squared	0.439093	Adjusted R- squared	0.405706	
F-statistic	13.15149			
Prob.	0.00000			

Source: Author's computation from E-views 12 SV, 2022

The regression result shows that assets quality, capital adequacy ratio, return on equity has significant effect on return on assets, whereas liquid ratio has insignificant effect on return on assets. Similarly, management efficiency has significant effect on return on assets.

R- squared of 0.4390 implies that the 43.90 variation in the dependent variables is explained by the independent variables and remaining variation is explained by error. Furthermore, regarding the statistical significance of the model it's p value = 0.000 is less than 5% level, indicating that the estimated model has a high statistical significance, which increases the model's reliability and validity. Capital adequacy ratio are the most important factor that analyze the return on assets of financial institution under the framework of CAMEL.

Regression Analysis of ROE

ROE= α + β1 Assets +β2CAR + β3 Liquid ++ β4 Management+ β5 ROA+ e

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Assets	0.013877	0.039418	0.352038	0.7257
CAR	-0.187054	0.191132	-0.978665	0.3306
Liquid	0.185674	0.115996	1.600686	0.1132
Management	-0.526298	0.363151	-1.449253	0.1510
ROA	5.571015	1.255070	4.438810	0.0000
C	4.920789	5.108532	0.963249	0.3382
Model Summary				
R- squared	0.319016	Adjusted R- squared	0.278481	
F-statistic	7.870187			
Prob.	0.0000004			

Source: Author's computation from E-views 12 SV, 2022

The regression result shows that return on assets has significant effect on return on equity, whereas liquid ratio, assets quality, capital adequacy ratio, management efficiency has insignificant effect on return on equity. R- squared of 0.3190 implies that the 31.90 variation in the dependent variables is explained by the independent variables and remaining variation is explained by error. Furthermore, regarding the statistical significance of the model it's p value = 0.000 is less than 5% level, indicating that the estimated model has a high statistical significance, which increases the model's reliability and validity.

5. SUMMARY AND CONCLUSION

This study reveals that assets ratio, capital adequacy ratio, management ratio, return on equity has significant effect on return on assets, whereas return on assets has significant effect on return on equity. This study concludes that capital adequacy ratio and return on assets are the most important factor that analyze the return on assets and return on equity of financial institutions in the framework of CAMEL.

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