International Journal of Finance and Commerce
www.commercejournals.com
Online ISSN: 2664-715X, Print ISSN: 2664-7141
Received: 29-08-2023, Accepted: 14-09-2023, Published: 30-09-2023
Volume 5, Issue 3, 2023, Page No. 74-82

Financial performance of nepalese finance companies in the framework of CAMEL

Roshan Thapa
MBS-F Scholar, Department of Business Administration, Lumbini Banijya Campus, Butwal, Nepal

Abstract
This study is about financial performance of Nepalese finance companies in the framework of CAMEL where dependent variables are ROA and ROE and independent variables are capital adequacy ratio, core capital ratio, non-performing loan ratio, loan loss coverage ratio, loan loss provision ratio, management efficiency ratio, cash & bank balance ratio and investment in government securities ratio. The findings of the study over the study period of 2074/75 to 2078/79 with sample selected 7 finance companies based on 35 observations. The descriptive, casual and analytical research design has been used to analyze the data of descriptive statistics, Pearson correlation coefficient and multiple regression analysis. The negligible relationship with capital adequacy, assets quality and liquidity on return on assets and return on equity and management efficiency has very high positive relation on return on assets but moderate positive relationship on return on equity. The management efficiency has positive significantly impact on financial performance but other variables are capital adequacy, assets quality and liquidity have statistically insignificant influence on financial performance.

Keywords: Capital adequacy, assets quality, management efficiency, earnings and liquidity

Introduction

By concentrating on the top line and bottom line, banks across the board have improved their profit while reducing their operational costs and more number of banks has improved their financial performance by using the concept of mergers and acquisitions. CAMEL rating is used by most banks across the world as a performance evaluation technique (Raiyani, 2010) [31]. In order to evaluate banks' overall financial condition, CAMEL supervisory rating system is built and introduced first in USA for onside monitoring. Now, it is used both on-site and off-site monitoring purposes. Generally, the financial performance of banks and other financial institutions has been measured using a combination of financial ratios analysis, benchmarking, measuring performance against budget or a mix of these methodologies (Avkiran, 1995) [5].

Micro and macro factors affect the financial health of individual FIs. Political stability and the real sector growth are major macro factors whereas capital base, quality of assets, liquidity position, management quality, market sensitivity and earnings are micro factors (Saunders & Marcia, 2004) [34]. There are so many techniques available today to evaluate financial performance of banks and financial institutions. Among them, CAMEL model of financial analysis is considered more efficient. Under CAMEL model, five (now six) critical dimensions are used to evaluate financial performance regarding bank's operations and performance (Sahajwala, 2000) [32]. CAMEL is an effective tool to analyze financial performance for examiners and regulators (Barr, Killgo, Seims, & Zimmel, 2002) [8].

Different aspects of a bank based on various information are used under CAMEL model to detect financial soundness. Hirtle and Lopez (1999) [16] stress that CAMEL model is highly confidential to project business strategy for the bank's senior management and supervisory staff. Carried out a study as a pioneer by using CAMEL model in rating bank's performance. The study carried out by Gasbarro, Sadguna, and Zumwalt. (2002) [13] and Baral (2005) [7] proved the effectiveness of this model to analyze financial performance of financial institutions. This study, therefore, attempts to examine the financial performance analysis based on CAMEL components and their influence on the profitability of the Nepalese BFIs.

Financial soundness indicators (FSIs) are indicators compiled to monitor the health and soundness of financial institutions and markets, and of their corporate and household counterparts. FSIs include both aggregated information on financial institutions and indicators that are representative of markets in which financial institutions operate. Macroprudential indicators include both FSIs and other indicators that support the assessment and monitoring of the strengths and vulnerabilities of financial systems, notably macroeconomic indicators (Sundararajan, *et al*., 2002) [38].

Finance companies are the non-depository financial institution that does not accept deposit like financial institution. Generally, they are set up to provide credit to households or firms, usually to finance the purchase of appliances or equipment. They are non-banking financial institutions that provide credit facilities to households and businesses. For households, they originate loans and leases to finance the purchase of consumer goods such as automobiles, furniture, and household appliances. For businesses, they supply short- and intermediate-term credit (including leases) for such purposes as the purchase of equipment and motor vehicles and the financing of inventories (Kohn, 2007) [23].

Problem statement

The evolution of the organizational structure of banks over the past 30 years into semiautonomous lines of business,

each with a different product, customer, distribution or geographical mandate has created issues concerning, risk management, resource allocation and most importantly performance measurement (Kimball, 1997) [21]. According to Karr (2005) [19], the above complexities therefore call for the adoption of a broader set of performance indicators that go beyond the traditional ROE and ROA based measurements to provide more insight into performance The CAMEL framework is an appropriate tool for analyzing bank performance since it incorporates not only the ROA and ROE in its analysis but other ratios touching on various aspects of bank operations as well. In the Nepalese finance company scene the supervising authorities report the CAMEL component rating for individual banks annually to the bank management but not the public hence the further need to use it to bridge the knowledge gap for purposes of preventing the information asymmetry to all concerned stakeholders.

The impact of market power is that inefficient banks can simply translate their higher costs to higher prices and still earn positive profits (Turati, 2001) [39]. Efficiency hypothesis under the scale efficiency version postulates that some firms simply produce at more efficient scales than others, and therefore have lower unit costs and higher unit profits despite both having equally good management and technology.

The development in this sector actually took place in the mid- 1980s with joint venture banks entering the Nepalese financial market reversing the monopoly of state owned banks. The licensing of non-banking financial institutions (NBFIs) in 1984 marked, with lower capital requirements, the need for more players in the market to avail access of services to the public. However, the actual proliferation of finance companies did not commence until the mid-90s (Aurora, 2007) [4]. The research questions of the study are as follows:

- Is there any relationship between capital adequacy, assets quality, management efficiency, earnings quality, liquidity and profitability (ROA and ROE)?
- Do capital adequacy, assets quality, management efficiency, liquidity affect ROA and ROE?

Objectives of the study

The main objective of the study is to examine the financial performance of Nepalese finance companies in the framework of CAMEL and compare each other. To accomplish the main objective, specific objective of the study are:

- To measure the relationship between capital adequacy, assets quality, management efficiency and liquidity position and profitability of selected finance companies.
- To evaluate the effect of capital adequacy, assets quality, management efficiency, liquidity and performance (ROA and ROE).

Hypothesis

H_1: There is a significant effect of capital adequacy on ROA.

H_2: There is a significant effect of assets quality on ROA.

H_3: There is a significant effect of management efficiency on ROA.

H_4: There is a significant effect of liquidity on ROA.

H_5: There is a significant effect of capital adequacy on ROE.

H_6: There is a significant effect of assets quality on ROE.

H_7: There is a significant effect of management efficiency on ROE.

H_8: There is a significant effect of liquidity on ROE.

Rationale of the study

The study deals with different financial performance and its indicator as well as financial viability of the finance companies. The study also significance lies mainly in identifying and comparing the financial health of finance companies in the framework of CAMEL. This study also provides necessary information of performance capability of their finance companies to the management. It provide the real picture of performance which is beneficial to potential as well as existing shareholders, about risk return and utilizing fund. The study is also useful for depositors, merchant bankers as well as other stakeholders; they can identify the overall performance of the finance companies. It will be helpful to those who want to conduct further study in this field. Mainly, the purposed study will be significance for the researchers, research group and academicians for the future in the view of review.

Empirical review

Berger and Davies (1994) [9] evaluated the impact of CAMEL rating changes on the parent holding company's stock price. They separated stock price changes into two component a 'private information' effect (which identified the public's awareness of new information discovered by examiners), and a 'regulatory discipline' effect which valued a regulators' presumed ability to force a bank to changes its behavior). Berger and Davies' empirical results provided only weak evidence of a regulatory discipline effect, but they found a strong private information effect. However, the information effect applied only to CAMEL downgrades, which tend to precede stock prices declines. Berger and Davies found no movement in the stock price following a CAMEL upgrade.

Shrestha (2011) [37] find out the "Capital Adequacy Norms for Commercial Banks and its impact of Bank of Kathmandu and Himalayan Bank Ltd." has concluded that BOK and HBL are found to be successful to comply with requirement of capital adequacy norms. The CD ratio of HBL is very much low which needs to be improved immediately and CD ratio of BOK is satisfactory. Although, the banks are successful to meet the capital adequacy requirement as per NRB directive.

Shakara (2012) [35] concluded that the importance of implementing the decisions of the Basel Committee and the CAMEL system in shedding light on the strengths and weaknesses of banking work systems, leading to directing attention towards them and achieving the goals of depositors, investors and shareholders alike, which contributes to increasing the efficiency of banking work locally and internationally. While the study of (Al-Taie and Muhammad, 2013) concluded that the CAMEL standard is one of the most important modern standards adopted in evaluating the performance of banks. According to this

criterion, the performance of banks is classified in order to identify the strengths and shortcomings in performance and to take appropriate corrective measures to improve performance as one of the early warning systems for banking crises.

Jha and Hui (2012) [18] examined financial performance of public sector, joint venture and private sector commercial banks in Nepal with the help of CAMEL model. They found that public sector banks have poor financial performance as compared to private sector and joint venture banks. Private sectors banks are equally likely as compare to joint venture banks. The regression analysis showed that capital adequacy ratio (CAR), interest expenses to total loan and net interest margin (NIM) have significant relationship with return on assets, ROA. Likewise, capital adequacy ratio has considerable effect on return on equity, ROE.

Ameur and Mhiri (2013) studied 10 commercial Tunisian banks during the period 1998 to 2011 period to identify factors explaining Tunisian bank performance. This study incorporated bank-specific as well as industry-specific and macroeconomic factors affecting bank performance. The findings suggested that the bank capitalization as well as the best managerial efficiency have positive and significant impact on the bank performance. The study also concluded that industry-specific factor such as the concentration has a negative and a significant impact on performance. Moreover, macroeconomic indicators do not have a significant impact on bank performance.

Fantal *et al* (2013) assessed the relationship between selected internal and external corporate governance mechanisms, and bank performance as measured by return on equity (ROE) and return on assets (ROA) covering the period 2005 to 2011. The study indicated that board size and existence of audit committee in the board had statistically significant negative effect on bank performance whereas bank size and capital adequacy ratio had statistically significant positive effect on bank performance.

Azizi and Sarkani (2014) [6] examined the financial performance of Mellat Bank using CAMEL model. They concluded that there is positive significant relationship between liquidity, management quality and earnings with the bank's profitability. But there is no relationship between capital adequacy and assets quality with bank financial performance. This finding was just opposite the findings of Liu (2011) [24].

Sharma (2014) [36] performed a study on "Financial Performance Analysis of Nepal SBI Bank Ltd., In the Frame work of CAMEL." The main objective of the study is to analyze the financial performance of Nepal SBI bank Ltd. Through CAMEL framework, the study was based on secondary data covering the six years from 2009 to 2014. The researcher conducts the financial tools to analyze the six years data. He concluded That Nepal SBI bank Ltd. Was well capitalized and complying with directives of NRB. The bank has maintained satisfactory level of past due loan on total loan except 2009. Earning per employees of the bank was found quite high. Net interest margin of the bank was found satisfactory. Further the liquidity position of the bank was found sound.

Ifeacho and Ngalawa (2014) [17] examined the effect of bank-specific micro variables and macroeconomic variables on bank performance as measured by return on assets (ROA) and return on equity (ROE) in South African banking sector. The study found that all bank-specific variables such as asset quality, management quality, and liquidity have significant positive relationship with ROA and ROE. The most surprising is that capital adequacy has significant negative relationship with ROA, while its relationship with ROE is significant and positive.

Karri, Meghani and Mishra (2015) [20] carried out a comparative study of public sectors - Bank of Baroda and Punjab National Bank through CAMEL model using14 CAMEL variables. They concluded that both banks maintained higher level of CAR than the prescribed level, 10%. Out of 14 ratios, Bank of Baroda is the best for (6ratios) followed by Punjab National Bank (5 ratios).

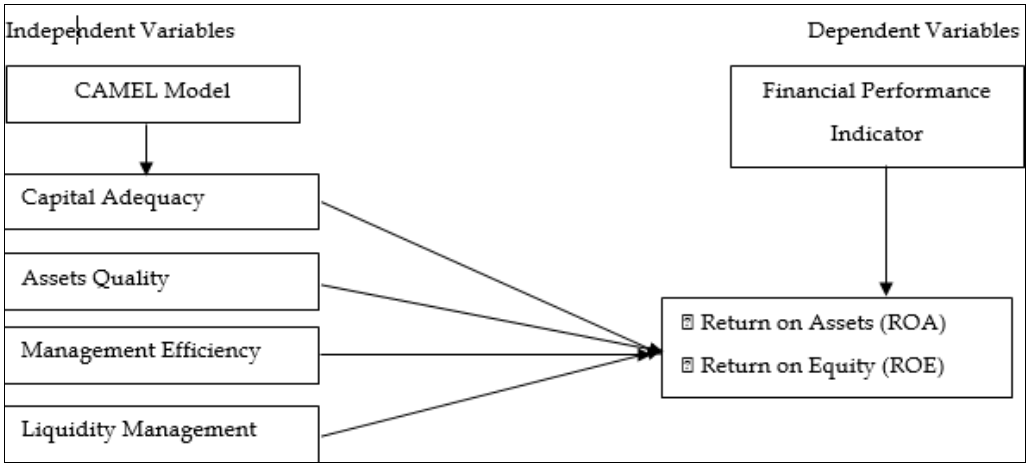
Meena (2016) [25] conducted a study on financial analysis of selected banks using CAMEL approach with reference to Indian banking. This study concluded that out of 17 CAMEL variables which are taken as independent variables, profit per employee, debt-equity ratio, total.

Yameen and El-Dahrawi (2016) [42] aimed to investigate the effect of CAMEL components on the credit risk component. The study indicates that the components of the model completely affect the credit risk component of banks, while when we examine the effect of each component of the model separately on credit risk, the results are as follows: There is an effect of credit adequacy, capital, asset quality, revenue quality and credit risk sensitive market risk. As for the elements of management quality and liquidity quality, they have no impact on credit risk.

Poudel (2016) carried out "A study on comparative analysis of financial performance between Himalayan Bank and Standard Charted Bank" the basic objectives of that study was provided comparative financial performance of SBCNL and HBL. Only five fiscal years financial performance beginning from 2011/12 through 2015/16 were analyzed. In this study financial and statistical tools were used to evaluate the performance of banks. In financial tools liquidity, activity, profitability, structural and income and expenditures ratios. Further, the research used the method of least square to find out the trend of different financial indicators he found that the performance of SCBNL is better than that of HBL.

Theoretical framework and definition of variables

Each of the components rating descriptions is divided in the three sections; and introductory paragraph; a list of the principle evaluation factors that related to that components; and a brief description of each numerical rating for the components. Some of the evaluation factors are reiterated under one or more of the other components to reinforce the interrelationship between components. The listing of evaluation factors for each component's rating is in no particular order of importance. The dependent variables of this study is camel analysis as financial performance and independent variables as capital adequacy, assets quality, management efficiency, earnings and liquidity.



Note. Designed by the researcher

Fig 1

a. Capital adequacy

Capital adequacy is one of the major components of CAMEL model. It is used to find out the bank's ability to meet operational losses. It protects bank from going to bankrupt and to maintain the confidence of the depositors in the bank. Sound capital base enable the bank to maximize profit whereas poor capital base give birth to many defects (Bhandari, 2003; Kleff & Weber, 2008) [11, 22]. In order to measure capital adequacy, bank capital is divided into Tier I and Tier II. Tier I (core/primary) capital is the summation of paid-up capital, share premium, non- redeemable preference share, general reserve fund, accumulated profit, capital redemption reserve, capital adjustment fund, and other free reserve. Amount of the goodwill, fictitious assets, and investment in the financial instruments issued by an organized organization in excess to the limit specified by NRB should be reduced to obtain core capital. Similarly, Tier II (supplementary) capital is the summation of general loan loss provision, assets revaluation reserve, hybrid capital instruments, subordinated term loan, exchange equalization reserve, excess loan loss provision, and investment adjustment reserve (NRB, 2019) [29].

b. Assets quality

Another major component of CAMEL model to analyze management evaluation and bank's performance is asset quality (Young, 1997) [43]. It is an indicator of financial solvency of banks (Whalen, 1991) [40]. Poor assets quality creates pecuniary problems and weaken capital base. Loan and advances occupy largest portion of asset side of the balance sheet and earnings made from such loans and advance take up a major part of income statement of financial institutions. Default loans have negative effects on bank's earning because these loans are not earning income. The banks with poor performing assets are often exposed to big losses. The maximum limit of fund based loan provided to a single borrower is 25 percent of its primary capital. Similar, bank can provide the non-fund base loan up to 50 percent of its core capital (NRB, 2019) [29].

c. Management efficiency

Management efficiency is used to measure efficiency and effectiveness of the bank's management. Success or failure of any organization largely depends upon managerial capability regarding business affairs. Higher the managerial efficiency, higher will be the organizational success and vice versa. There are so many parameters to judge management efficiency of the bank. It is really difficult to find an independent indicator. However, William, Looney, and Wansley (1986) and Wheelock and Wilson (2000) [41] incorporate measures of management efficiency that are also frequently used in practice.

d. Earnings quality

It is used to determine ability of the bank to earn sufficient earning to meet required rate of return of capital providers and explain the growth of earnings in future. Stable and growing earnings help banks to win confidence of stakeholders (Grier, 2007) [15]. Financial institutions must earn reasonable profit to support asset growth, build up adequate reserves and enhance shareholder's value. There is negative relationship between profitability and financial distress. Return on assets (ROA), return on equity (ROE) operating profit margin, net profit margin, absolute measures such as interest income, net interest income, no interest income, net non-interest income, non-operating income, net non-operating income are commonly used profitability indicators. Return on assets (ROA) and return on equity (ROE) are major component of profitability. This study, therefore, uses ROA (net income as a percentage of total assets) and ROE (net income as a percentage of equity) to judge the earnings efficiency of BFIs.

e. Liquidity management

Liquidity refers to the ability of a bank to meet its short-term obligations and ability to meet own loan commitment. In case of depositary FIs, liability side liquidity risk arises when depositors of FIs unexpectedly withdraw their deposit and assets side liquidity risk arises due to unexpected demand of loan of commitment holders. Both type of liquidity risk are not desirable for FIs (Jenkinson, 2008). There is negative relationship between size of liquid assets and risk of distress(Chaplin, Emblow, & Michael 2000) [12]. Similarly, Arif and Anees (2012) [3] provide empirical evidence on this. Low liquidity threatens the bank's solvency position whereas high liquidity threatens the bank's profitability. Therefore, there must be tradeoff between liquidity and profitability. Purchased liquidity and storing liquidity are the major source to fulfill liquidity requirement. Different ratios such as loan to total deposit ratio, cash and equivalents to total assets ratio, cash and equivalents to total deposit ratio, NRB balance to total

deposit ratio, liquid assets to total deposit ratio are used to measure the liquidity position of BFIs. This study uses liquid assets to total deposit ratio to evaluate liquidity position. Liquid assets includes cash balance, bank balance with NRB and other BFIs, money at call, placement up to 90 days and the investment. In order to obtain net liquid assets, borrowings repayable up to 90 days are deducted from liquid assets (NRB, 2016) [28].

f. Return on assets

This ratio measures the profitability achieved by the bank by investing its assets in various activities, and is calculated by dividing net income by total assets. ROA measures the performance of banks. It reflects the ability of the bank to generate profit from the bank assets. ROA measures the ability of the management to convert the assets of the bank into net earnings (Sarkar et. al, 1998) [33]. Higher liquidity may lead to lower return on assets but with less significant impact on overall profitability (Almumani, 2013) [2].

g. Return on equity

ROE tells what percentage of profit the company makes for every monetary unit of equity invested in the company. ROE doesn't specify how much cash will be returned to the shareholders, since that depends on the company's decision about dividend payments and on how much the stock price appreciates. However, it's a good indication of whether the company is even capable of generating a return that is worth whatever risk the investment may entail (Berman, Knight and Case, 2013) [10]. ROE is usually calculated by dividing net profit by average shareholders' equity.

Research methodology

The research designs used in this study are descriptive, casual comparative and analytical. The dependent variables are ROA and ROE and independent variables are capital adequacy, assets quality, management efficiency, earnings and liquidity. The findings of the study over the study period of 2074/75 to 2078/79 with sample selected 7 finance companies based on 35 observations. There are 17 finance companies in Nepal but the researcher is selected sample only Goodwill Finance Limited, Manjushree Finance Limited, Pokhara Finance Limited, Reliance Finance Limited, Shree Investment Finance Company Limited, Janaki Finance Company Limited and ICFC Finance Limited as using convenience sampling techniques. The descriptive, casual and analytical research design has been used to analyze the data of descriptive statistics, Pearson correlation coefficient and multiple regression analysis.

Model specification

The main aim of this study is to analyze the financial performance of Nepalese finance companies in the framework of CAMEL. The collected data has been analyzed using Microsoft office excel-2003 produced the result of descriptive statistics, correlation analysis and the result of regression analysis analyzed from different two models (Gautam, 2020) [14].

First model

In this model, ROA is taken as dependent variable and capital adequacy (CA), assets quality (AQ), management efficiency (ME), earnings (ROE), and liquidity (LIQ) are taken as independent variables. The model is presented as follows:

$ROA= \beta_0+ \beta_1 CA + \beta_2 AQ+ \beta_3 ME + \beta_4 ROE+ \beta_5 LIQ+e.$

Second model

In this model, ROE is taken as dependent variable and capital adequacy (CA), assets quality (AQ), management efficiency (ME), earnings (ROA), and liquidity (LIQ) are taken as independent variables. The model is presented as follows:

$ROE= \beta_0+ \beta_1 CA+\beta_2 AQ+\beta_3 ME+\beta_4 ROA+e.$

Analysis and results

This chapter deals with the presentation and analysis of data collected from different sources with the focus on the camel components. As stated in the theoretical prescription, financial performance of Nepalese finance companies in the framework of CAMEL are concentrated in the five components of camel i.e. capital adequacy, assets quality, management quality, earning quality and liquidity. The data collected from annual reports of respective finance have bee analyzed with the application of camel. The researcher has concluded data of camel variables as a mean, standard deviation, coefficient of variance, minimum, maximum and regression analysis.

a. Descriptive statistics

Descriptive statistics of research variables refers to a branch of inferential statistics that involves the analysis and summarization of data to provide a concise and meaningful description of its main characteristics. It aims to organize, present, and describe data in a way that allows for easier interpretation and understanding. The researcher analyzed the data from statistical tools for using CAMEL variables of finance companies of Nepal has analyzed the data from minimum, maximum, mean and standard deviation and coefficient of variance which are as presented in the following table.

Table 1: Descriptive statistics

Descriptive statistics	Minimum	Maximum	Mean	SD
ROA (%)	0.49	5.32	1.53	1.01
ROE (%)	3.46	28.30	10.11	5.00
CA (%)	11.68	86.37	22.28	12.80
AQ (%)	0.02	16.67	2.11	2.76
ME (times)	422.54	7508.59	1313.23	1297.26
LIQ (%)	1.21	50.42	18.95	12.11

Table 1 shows the descriptive statistics of research variables of CAMEL variables. The minimum value of ROA is 0.49, ROE is 3.46, CA is 11.68, AQ is 0.02, ME is 422.54 and LIQ is 1.21. The maximum value of ROA is 5.32, ROE is 28.30, CA is 86.37, AQ is 16.67, ME is 7508.59 and LIQ is 50.42. The average of ROA is 1.53, ROE is 10.11, CA is 22.28, AQ is 2.11, ME is 1313.23 and LIQ is 18.95. The standard deviation of ROA is 1.01, ROE is 5, CA is 12.80, AQ is 2.76, ME is 1297.26 and LIQ is 12.11. The standard deviation is high in ME which is greater variability and less in ROA which is less variability.

b. Pearson correlation coefficient between CAMEL and dependent variables

Having indicated the descriptive statistics, the Pearson Correlation Coefficients have been computed and results are

presented. The dependent variables are ROA and ROE. The independent variables are capital adequacy as measured by CAR, assets quality as measured by NPL ratio, management efficiency as measured by net profit to total staff ratio, earnings as measured by ROA and ROE and liquidity as measured by cash and finance balance to total deposit ratio.

Table 2: Pearson correlation coefficient between CAMEL variables with ROA

Correlation coefficient		ROA	CA	AQ	ME	LIQ
ROA	Pearson correlation	1				
CA	Pearson correlation	0.2434	1			
	Sig. (2-tailed)	0.1588				
AQ	Pearson correlation	0.0223	-0.1280	1		
	Sig. (2-tailed)	0.8988				
ME	Pearson correlation	0.9170**	0.2280	0.0867	1	
	Sig. (2-tailed)	0.0000				
LIQ	Pearson correlation	-0.0836	-0.0726	0.3496	-0.0701	1
	Sig. (2-tailed)	0.6330				
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

Table 2 shows that the Pearson correlation coefficient between independent variables on ROA. It reveals that the return on assets is positively related with capital adequacy ratio, assets quality and management efficiency. It reveals that higher the capital adequacy ratio, assets quality and management efficiency higher would be return on assets. On the other hand, return on assets is negatively related with liquidity management. It indicates that higher the assets quality lower would be return on assets. The management efficiency on return on assets has statistically significant at 0.01 (2 tailed) level of significance.

Table 3: Pearson correlation coefficient between CAMEL variables with ROE

Correlation coefficient		ROE	CA	AQ	ME	LIQ
ROE	Pearson correlation	1				
CA	Pearson correlation	0.0392	1			
	Sig. (2-tailed)	0.8233				
AQ	Pearson correlation	-0.0800	-0.1280	1		
	Sig. (2-tailed)	0.6479				
ME	Pearson correlation	0.5929**	0.2280	0.0867	1	
	Sig. (2-tailed)	0.0002				
LIQ	Pearson correlation	-0.2818	-0.0726	0.3496	-0.0701	1
	Sig. (2-tailed)	0.1009				
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

Table 3 shows that the Pearson correlation coefficient between independent variables on ROA. It reveals that the return on equity is positively related with capital adequacy ratio and management efficiency. It reveals that higher the capital adequacy ratio and management efficiency higher would be return on equity. On the other hand, return on equity is negatively related with assets quality and liquidity management. It indicates that higher the assets quality and liquidity management lower would be return on equity. The management efficiency on return on equity has statistically significant at 0.01 (2 tailed) level of significance.

c. Regression analysis

The econometric models employed in this study tries to analyze the relationship between CAMEL variables and profitability. The following regression model is used to examine relationship of CAMEL variables and profitability of BIFs. From the conceptual framework, the function of dependent variables Return on assets (ROA) and Return on equity (ROE) takes the following form:

ROA= *f* (CA, AQ, ME and LIQ)

ROE= *f* (CA, AQ, ME and LIQ)

The model estimated in the study assumes that return on assets, ROA and return on equity, ROE is the dependent variables and capital adequacy (CA), assets quality (AQ), management efficiency (ME) and liquidity (LIQ) are independent variables. To analyze the impact of independent variables on dependent variables the model has been developed as follows:

1. First model

In this model, ROA is taken as dependent variable and capital adequacy (CA), assets quality (AQ), management efficiency (ME) and liquidity (LIQ) are taken as independent variables. The model is presented as follows:

$ROA= \beta_0+ \beta_1CA + \beta_2AQ+ \beta_3ME + \beta_4LIQ+e.$

The R-square of 0.8449 indicate that the 84.49% variation of the CAMEL is explained by capital adequacy, assets quality, management efficiency and liquidity collectively. It indicates a strong positive relationship between dependent and independent variables (R=0.8243). In addition, the coefficient of determination indicates that about 84.49% of changes in CAMEL variables are explained by return on assets.

Table 4: Analysis of Variance (ANOVA) Test of Dependent Variable (ROA)

Model 1	df	SS	MS	F	Significance F
Regression	4	29.29107	7.322768	40.86762	0.000
Residual	30	5.375479	0.179183		
Total	34	34.66655			

a. Predictors: CA, AQ, ME and LIQ

b. Dependent Variable (Constant): ROA

From the ANOVA statistics, the processed data had a significance level of 0% which shows that the data is ideal for making a conclusion on the population parameters as the value of significance (p-value) is less than 5% is an indication that there were significant difference between dependent and independent variables. The significance value was less than 0.05 indicating that the overall model was significant.

ROA= 0.5817 + 0.0022CA – 0.0198AQ + 0.0007ME + 0.0001LIQ+e.

Table 6 shows the capital adequacy has positive affects on return on assets of finance company as shown by a regression coefficient of 0.0022 (p-value=0.7116). It was also found that assets quality has negative influences the ROA shown by a regression coefficient of (0.0198) (p-value=0.4941). Moreover, the results indicate that management efficiency has a positive effect and significant effect on ROA as shown by regression coefficient of 0.0007 (p-value=0.0000). Further, the results revealed that liquidity has positive effect on dependent variables (ROA) of selected finance company as shown by regression coefficient of 0.0001 (p-value=0.9851). The study further revealed that p-value is less than 5% is MER which shows that independent variable is significantly impact on ROA at 95% confident level. It means that other variables are CA, AQ and LIQ have insignificantly influence on ROA.

ii) Second model

In this model, ROE is taken as dependent variable and capital adequacy (CA), assets quality (AQ), management efficiency (ME) and liquidity (LIQ) are taken as independent variables. The model is presented as follows:

$ROE= \beta_0+ \beta_1CA + \beta_2AQ+ \beta_3ME + \beta_4LIQ+e.$

Only multi-collinear effect is identified by the Variance Inflation factor (VIF) technique, which is a statistic calculated for each variable in the model. Theoretically, a VIF greater than 10 suggest that the concerned variable is multi-collinear with others in the model and need to be excluded from the model. None of the VIFs is high except ROE with liquidity. Hence liquidity is excluded in second model.

a. Predictors: CA, AQ, ME and LIQ

b. Dependent Variable (Constant): ROE

The R-square of 0.4266 indicate that the 42.66% variation of the CAMEL is explained by capital adequacy, assets quality, management efficiency and liquidity collectively. It indicates a strong positive relationship between dependent and independent variables (R=0.3501). In addition, the coefficient of determination indicates that about 42.66% of changes in CAMEL variables are explained by return on equity (ROE).

Table 5: Analysis of variance (ANOVA) test of dependent variable (ROE)

Model 2	df	SS	MS	F	Significance F
Regression	4	361.9583	90.48958	5.579271	0.001763
Residual	30	486.5667	16.21889		
Total	34	848.525			

a. Predictors: CA, AQ, ME and LIQ

b. Dependent Variable (Constant): ROE

From the ANOVA statistics, the processed data had a significance level of 0% which shows that the data is ideal for making a conclusion on the population parameters as the value of significance (p-value) is less than 5% is an indication that there were significant difference between dependent and independent variables. The significance value was less than 0.05 indicating that the overall model was significant.

$ROE= 10.1255 – 0.0491CA – 0.1286AQ + 0.0024ME – 0.0921LIQ + e.$

Table 9 shows the capital adequacy has negative effects as shown by a regression coefficient of (0.0491) (p-value=0.3885). It was also found that assets quality negative influences on the ROE shown by a regression coefficient of (0.1286) (p-value=0.6392). Moreover, the results indicate that management efficiency has a positive effect and significant effect on ROE as shown by regression coefficient of 0.0024 (p-value=0.0002). At last, liquidity has also negative influence on ROE where regression coefficient of (0.0921) (P-value=0.1431). Furthermore, it revealed that P-value is less than 5% is MER which shows that independent variable is significant impact for this study at 95% confident level on ROE. It means that other CA, AQ and LIQ have insignificantly influence on ROE.

Discussion

The study found that the discussion of correlation has positive correlated with capital adequacy ratio, assets quality and management efficiency on ROA and ROE and assets quality has positive relation on ROA but negative on ROE. It reveals that higher the capital adequacy and management efficiency higher would be return on assets and return on equity and higher the assets quality higher would be return on assets but lower would be return on equity. On the other hand, liquidity management negatively related on return on assets and return on. It indicates that higher the liquidity management lower would be return on assets and return on equity. The management efficiency has statistically significant relation on financial performance.

Furthermore, the discussion of regression has management efficiency is positive significantly impact on financial performance. This result is consistence with the finding mentioned by Ameur and Mhiri (2013) and Al-Homaidi *et al*. (2018) but contradict with the study of Ongore and Kusa (2013) [30] and Karri, *et al*. (2015) [20], Ifeacho and Ngalawa (2014) [17] and Jha and Hui (2012) [18] but other variables are CA, AQ and LIQ have statistically insignificant influence on financial performance. This result is consistence with the finding mentioned by Alkhatib and Harsheh (2012) but contradict with the study of Al-Homaidi *et al*. (2018), Sufian & Habibullah (2009), Fantal *et al*. (2013), Ameur and Mhiri (2013) and Ongore and Kusa (2013) [30].

Conclusion

The result shows that conclusion of correlation coefficient has negligible relationship with capital adequacy, assets quality and liquidity on ROA and ROE and management efficiency has very high positive relation on ROA but moderate positive relationship on ROE. The management efficiency has positive statistically significant impact on financial performance. Therefore, it can be concluded that capital adequacy, asset quality, and liquidity have little to no direct impact on ROA and ROE, management efficiency plays a pivotal role in determining financial performance. Enhancing management efficiency can lead to a substantial improvement in ROA and a moderate improvement in ROE. These findings underscore the importance of effective management practices in achieving financial success and highlight areas for potential strategic focus for businesses and financial institutions. Further research and exploration into the specific drivers of management efficiency and its impact on financial performance may provide valuable insights for decision-makers in the financial industry.

Implications

The following recommendations are made based on the conclusions as suggestion to overcome the weakness as regard to CAMEL model of Goodwill Finance Limited, Manjushree Finance Limited, Pokhara Finance Limited, Reliance Finance Limited, Shree Investment Finance Company Limited, Janaki Finance Company Limited and ICFC Finance Limited.

- Capital Adequacy Ratio and Core Capital Ratio of all finance are as per NRB standard over the review period but are in fluctuating trend. So recommendation is provided and maintain stable if possible increase core capital fund to increase Capital Adequacy Ratio and Core Capital Ratio.
- The assets quality ratios of all finance are in satisfactory level and being better each year. So, the recommendation is to maintain non performing loan ratio as lower as possible and try to give additional

attention in recovering the doubtful and loss loan in future and try to increase its performing loan ratio.

- The management efficiency ratio of SIFC and MFIL seems to be satisfactory as compare to PFL. So, the recommendation is that the PFL should increase Net Profit after Tax and should not appoint extra employee in organization.
- The earning quality ratios of finance company like EPS, ROE and ROA are in increasing trend. So, all finance recommended that to increase more profit of the finance should minimized its operating cost by increasing the operating efficiency of its employees.
- Liquid assets of the finance company play an important role to meet the day to day and short term obligation. If liquid assets of the finance are not maintained properly then there is a high probability of finance going to liquidation. The liquidity ratio of JFCL seems to be satisfactory among three finance but other finance companies should be careful and try to increase liquidity position by increasing Cash and Finance Balance Ratio and Investment in Government Security Ratio.

References

1. Al Homaidi EA, Tabash MI, Farhan NH, Almaqtari FA. Bank specific and macro-economic determinants of profitability of Indian commercial banks: A panel data approach. Cogent Economics & Finance,2018:6(1):1-26.
2. Almumani MA. Impact of managerial factors on commercial bank profitability: Empirical evidance from Jordan. International Journal of Academic Research in Accounting, Finance and Management Sciences,2013:3(3):298-310.
3. Arif A, Anees AN. Liquidity risk and performance of banking system. Journal of Financial Regulation and Compliance,2012:20(2):182-95.
4. Aurora F. Access to Financial Services in Nepal. The World Bank, 2007.
5. Avkiran NK. Developing an Instrument to Measure Customer Service Quality in Branch Banking. International Journal of Banks Marketing,1995:12(6):10-18. Bangladesh Bank, Annual report, 2006.
6. Azizi M, Sarkani D. Review financial performance of Mellat bank according to CAMEL model. Journal of Multidisciplinary Research,2014:3(1):32-42.
7. Baral KJ. Health check-up of commercial banks in the framework of CAMEL: A case study of joint venture banks in Nepal. Journal of Nepalese Business Studies,2005:2(1):41-55.
8. Barr RS, Killgo KA, Seims TF, Zimmel S. Evaluating the productive efficiency & performance of U.S commercial Banks. Engineering Management,2002:28(8):19-28.
9. Berger AN, Davies SM. The Information Content of Bank Examinations. Journal of Financial Services Research, 1994.
10. Berman K, Knight J, Case J. Financial Intelligence. A Manager's Guide to Knowing What the Numbers Really Mean. Business Literacy Institute, Inc. USA, 2013, 284.
11. Bhandari DR. Banking and insurance: Principal and practice. Kathmandu: Aayush Publication Pvt. Ltd, 2003.
12. Chaplin G, Emblow A, Michael I. Banking system liquidity: Development and issues. Financial Stability Review,2000:4:93-112.
13. Gasbarro D, Sadguna I, Zumwalt J. The changing relationship between CAMEL ratings and bank soundness during the Indonesian banking crisis. Review of Quantitative Finance and Accounting,2002:19(3):247-260.
14. Gautam KR. Financial Performance Analysis of Nepalese Financial Institutions in the Framework of CAMEL. Janapriya Journal of Interdisciplinary Studies, 2020.
15. Grier WA. Credit analysis of financial institutions (2nded.). Euro money Institution Investor PLC, 2007.
16. Hirtle BJ, Lopez JA. Supervisory Information and the Frequency of Bank Examination. Federal Reserve Bank of New York, Economic Policy Review, 1999.
17. Ifeacho C, Ngalawa H. Performance of the South African banking sector since 1994. Journal of Applies Business Research,2014:30(4):1183-1196.
18. Jha S, Hui X. A comparison of financial performance of commercial banks: A case study of Nepal. African journal of Business Management,2012:6(25):134-159.
19. Karr J. Performance Measurement in Banking: Beyond ROE, Journal of Performance Measurement, IS,2005:(2):56-70.
20. Karri HK, Meghani K, Mishra BM. A comparative study on financial performance of public sector banks in India: An analysis of CAMEL model. Arabian Journal of Business and Management Review (OMAN Chapter),2015:4(8):65-94.
21. Kimball R. Innovations in Performance Measurement. New England Economic Review,1997:36:24-38.
22. Kleff V, Weber M. How do banks determine capital? Empirical evidence for Germany. German Economic Review,2008:(9):354-72.
23. Kohn M. Financial Institutions & Markets. New Delhi: Tata McGraw-Hill Publishing Company Limited, 2007.
24. Liu J. Determinants of bank performance: The application of the CAMEL model to banks listed in China's stock exchange from 2008 to 2011. International Journal of Multidisciplinary Research,2011:2(1):125-149.
25. Meena GL. Financial analyses of select banks using CAMEL approach a study with reference to Indian banking industry. International Journal of Research and Scientific Innovation (IJRSI),2016:3(10):2321–2705.
26. Nepal Rastra Bank. Banking & Financial Statistics, Various Years, available at, 2009. www.nrb.org.np.
27. Nimalathasan B. A comparative study of financial performance of banking sector in Bangladesh–an application of CAMELS rating system. Economic and Administrative Series,2008:2:141-152.
28. NRB. Financial stability report. NRB, central office, 2016.
29. NRB. Banking and financial statistic. Banks and financial institution regulation department. Policy research analysis division, NRB, 2019.
30. Ongore VO, GB Kusa. Determinants of Financial Performance of Commercial Banks in Kenya.

International Journal of Economics and Financial Issues,2013:3(1):237-252.
31. Raiyani JR. Effect of mergers on efficiency and productivity of Indian banks: A CAMELS analysis, 2010.
32. Sahajwala R, Van den Berg P. Supervisory risk assessment and early warning systems. Basel committee on banking supervision working. Bank for International Settlement, Basel, 2000, 4.
33. Sarkar J, Sarkar S, Bhaumik SK. Does ownership always matter? Evidence from the Indian banking industry. Journal of Comparative Economics,1998:26(1):262– 281.
34. Saunders A, Marcia MC. Financial markets and institutions. Tata McGraw-hill Publishing Company Limited, 2004.
35. Shakara MA. Evaluating the Performance of Banks according to CAMELS Standards. Journal of Accounting and Financial Studies,2012:7(18):134-154.
36. Sharma D. "Financial Performance Analysis of Nepal SBI Bank Ltd., In the Frame work of CAMEL." An Unpublished Thesis of Master Degree, Shanker Dev Campus, Kathmandu, 2014.
37. Shrestha MD. "Capital Adequacy Norms for Commercial Banks and its impact of Bank of Kathmandu and Himalayan Bank Ltd.", An Unpublished Thesis of Master Degree, TU, Kathmandu, 2011.
38. Sundararajan V, Charles E, Armida SJ, Pau H, Russell K, Marina M, *et al*. Financial Soundness Indicators: Analytical Aspects and Country Practices. International Monetary Fund, 2002.
39. Turati G. Cost Efficiency Profitability in European Commercial Ranking Paper presented at the 7th European Workshop on Efficiency and Productivity Analysis, Oviedo. Spain, 2001.
40. Whalen G. A proportional hazards model of bank failure: An examination of its usefulness as an early warning tool. Economic Review,1991:27:21-31.
41. Wheelock DC, Wilson PW. Why do banks disappear? The determinants of U.S. bank failures and acquisitions. Review of Economics and Statistics,2000:82(1):127-38.
42. Yameen Ismail YI, Al Dahrawi MS. The Impact of the Elements of the "CAMELS" Bank Performance Assessment Model on the credit risks faced by Jordanian commercial banks listed on Amman Stock Exchange. Al-Zarqa Journal for Research and Human Studies, 2016, 16(3).
43. Young RD. Management quality and x-inefficiency in national banks. Journal of Financial Services Research,1997:13(1):5-22.