

CHAPTER I

INTRODUCTION

1.1. Background of the study

Government of any countries highly monitors and controls the finance industry even in the liberalized market economy. Government does so due to its high gravity in the national economy, and to build up the confidence of private sector in its financial system. Nepal Rastra Bank as an apex monetary authority of the country started to monitor and control the finance industry especially at the end of the 1990s by issuing the directives to the financial system and protect the interest of the investors.

It has adopted the CAEL (Capital adequacy, assets quality, earning, and liquidity) system to check up the health of FI's. It has yet to use the CAMELS to evaluate the financial performance and checkup the financial health. Independent outsiders also cannot use all components of CAMELS to check up the financial health of FIs in Nepal due to full disclosure of required financial information to outsiders. NRB dictated FIs to disclose the financial information in uniform way only in the fiscal year 2001/2002. In this paper, attempt has been made to check up the financial health of joint venture banks in the framework of CAMEL.

Commercial banks play a vital role in the economic measures allocation of countries. They channel funds from depositors to investors continuously. They can do so, if they generate necessary income to cover their operational cost they incur in the due course. In other words for sustainable intermediate function, banks need to be profitable. Beyond the intermediation function, the financial performance of banks has critical implications for economic growth of countries.

NRB major changes in policy measures including interest rate deregulation, indirect methods of monetary control and use of open market operations as the main policy tool, abolishment of the statutory provision of liquidity ratio, market based foreign exchange system, flexible licensing policy , and prudential framework has led to significant change in Nepali banking industry in the past three decades , these changes resulted into entry of

foreign joint venture banks and domestic private banks into the market and widened the scale and scope of activities undertaken by the banks.

The effects of such changes into the banks efficient operation are becoming an important issue in the sphere. But assessment and analysis of previous literature review shows the lack of appropriate analysis of this issue. The analysis lacked the use of non parametric frontier approached in the banking system. Therefore, the need of more supplicated performance evaluation to understand the functioning of banks and their performance in the whole system is ever increasing.

The central bank in Nepal is Nepal Rastra Bank (NRB) which is responsible for regulation of banking sector in Nepal. The NRB assesses the overall strength of the banking system as well as the safety and soundness of the individual banking and financial institutions. NRB uses a uniform rating system, known as CAMELS, whereby supervisors in doing the assessment assign individual numerical ratings to the key areas of Capital, Assets, Management, Earnings, Liquidity and Sensitivity to market risk (CAMELS) as well as assign an overall composite rating to each banking institution. In this way, the banking and financial institutions are categorized into groups based on their overall strength, quality and operating soundness. By the rating system, problem banks that are in need of increased supervision are identified.

Based the CAMELS rating system, if the ratings of a bank should indicate that the bank has a problem in one or more of the key areas, the matter is addressed in the inspection report and taken up and discussed with the management through prompt corrective actions (PCA). Management is requested to submit a plan of action to resolve the issues. If the corrective action is carried out in accordance with the plan, the NRB will not initiate the process to take over control of the bank.

Furthermore, to explain the performance of the bank is measured at two levels, one is at the management and regulatory levels of the banks and another is at external rating agencies. Purpose of regulatory and supervisory rating system is to measure the bank performance at internal level and its compliance with regulatory requirements to keep the

bank on right track. These ratings are highly confidential and are available to the bank management.

Some of the most commonly used methods or models of bank performance measurement or evaluation include the analytic hierarchy process, data envelopment analysis and the capital adequacy, asset quality, management and liquidity (CAMEL) model. Our study uses the CAMEL model of bank performance measurement in joint venture, domestic private commercial banks and government banks. The model involves the use of financial ratios in measuring the bank performance, compared to other models, the CAMEL model is arguably the most popular framework used by the regulators for the bank performance evaluation (Naceur, 2003).

The basis committee on banking supervision of the bank of the international settlements (BIS) has recommended using capital adequacy, asset quality, management quality, earnings and liquidity as criteria for assessing a FI in 1988. The sixth component, market risk S was added to CAMEL in 1997. However, most of the developing countries are using CAMEL instead of CAMELS in the performance of the FIS. The central bank in some of the countries like Nepal, Kenya uses CAEL instead of CAMELS.

CAMEL's framework is a common method for evaluating soundness of financial institution. This system was developed by regulatory authorities of the U.S. banks. The federal reserves bank, the comptroller of the currency and the federal deposit insurance corporation all use this system (McNally. 1996).

Capital Adequacy, according to Sangmi and Nazir (2010) , is a reflection of the inner strength of a bank. Some of the ratios that measure capital adequacy include capital adequacy ratio, leverage ratio and net worth protection. The leverage ratio, which is also referred to as the debt to equity ratio is adapted in this study. Another important parameter that can be used to gauge the strength of a bank or its performance is the quality of the bank's assets. The main reasons for measuring asset quality are to find out the component of non-performing assets as a percentage of total assets. Some of the ratios used to measure asset quality include total investments to total assets; asset to capital employed, and non-performing assets to total assets.

Management quality or management capability parameter measures or evaluates the capability of the management of a bank to aggressively deploy its resources and utilize in the bank productively and in the process reduce costs and maximize income, among the CAMEL variables, the measurement of management quality is apparently the most subjective, particularly because it is usually appraised and allocated a score by the bank examination staff.

Sound management is key to bank performance but it difficult to measure. It is primarily a qualitative factor applicable to individual institutions. Several indicators, however, can jointly serve as an indicator of management soundness. Expenses ratio, earning per employees, cost per loan, average loan, and cost per unit of money lent can be used as a proxy of the management quality.

Earnings are perhaps the most conventional approach for the measuring the financial or bank performance. Cole and Gunther (1998) argued that higher income generally reflects relatively less financial difficulties and many consequently associated with a relatively lower likelihood of bank failure. This however, does not hold all the time. High income may also be associated with relatively high risk behavior, which exposes the bank to a greater probability of failure.

Liquidity of a bank refers the swiftness with which the bank responds to unexpected demand for cash. Liquidity means financial assets must be available to owners within a shorter period of time. Liquidity ratios include current ratio, quick ratio, liquid assets to deposits and liquid assets to total assets. The quick ratio is used as a proxy for liquidity in this study.

There are many different measures of a bank's performance in literature. Among these performance measures, return on assets (ROA) and return on equity (ROE) were the two of the most popular ratios used for accessing the bank or other industries' performance. Beyond that, there are still many other measures like net interest margin, Tobin's Q and Economic value added could be used to indicate the performance of a bank in the previous studies.

Return on assets indicates net profit against assets inputs, the majority of assets in most of banks consist of loans. Return on assets measures how effectively a bank's assets are being administrated to make profits (Golin, 2001). Return on assets showed how much profit a company earned for every dollar of its assets, it was a primary indicator for managerial efficiency (Elyor, 2009). Bakar and Tahir (2009) used ROA as a dependent variable for bank performance with success. Return on equity indicates net profit against equity input (Golin, 2001). The ROE indicates the rate of return for the shareholders of this bank, it reviews how effectively a bank used its investors' money (Elyor, 2009). Siddiqui and Shoaib (2011) measured the performance of 22 banks in Pakistan for the period 2002 to 2009 by using ROE with success.

1.2 Statement of the problem

Today banking business is diversified from traditional approaches to individual approach. With the shift in customer preference from deposits in banks to investments, ever increasing competition and number of banking facilities to customers at their doorstep, there is tendency that the profit margins of the banks are divided and declined. Now-days almost all banks in Nepal have started retail banking products and value added services along with their traditional banking products. It has become imperative for all the banks to retain the old customers and attract the new customers by providing more value added practices and banking incentives under single window system as well as to find alternative ways to generate more income.

Roman and Sargu (2013) analyzed the financial soundness of the commercial banks in Romania by using the CAMELS framework. The obtained results highlighted the strengths and the vulnerabilities of the analyzed banks, underlining the need to strengthen the concerns of the decision makers from banks to improve and increase their soundness.

The study of performance is important not only because of the information it provides about the health of the economy in any given year, but also because profits are key important determinants of growth and employment in the medium terms. Changes in profitability indicators are an important contributor to economic progress via the influence profits have on the investment and saving decisions of the companies. This is

because the rise in profits improves the cash flow position of the companies and offers greater flexibility in the source of finance for corporate investment through retained earnings.

Easier access to financial encourages greater investments which boost productivity, productive capacity, competitiveness and employment. The existence growth and survival of a business organization most depend upon the profit which an organization is able to earn. It is true when performance increases the value of shareholders may increase to considerable extent. The term profitability refers to the organization will definitely contribute the income of the investors by having a higher dividend and thereby improve the standard of living.

It is growth and efficiencies of commercial banks in many countries that would be important to finance the desired economic growth in the different segments of the economy. During the last decades the banking sector of Nepal has experienced major transformations in its operating environment. In context, financial reforms sectors reforms have been implemented. In these reforms, the role of commercial banks has remained central in financing economic activities in the various segments of the market.

According to Athanasoglou et al (2008), banks are typically the major source of finance for the majority of firms and are usually the main depository of economic savings. There are many aspects of the performance of banks that can be analyzed and this study focuses on the profitability performance determination using the CAMEL model.

As banks and financial institutions are run through publically accumulated funds, it is important to realize the various factors influencing the profitability in banks and to understand the various relationships between dominant factor and the expected outputs.

It therefore increasingly urges the need of more frequent banking examination. This economic crisis has also highlighted that a well-functioning financial system is significantly important for economic growth. The financial system enables an economy to be more productive as it allows investors with few resources to use savings from those with few prospects of investing. In this context, it is crucial to know how Nepalese

banking are performing. The study, therefore, aims to analyze and evaluate Nepalese commercial banks performance based on the CAMEL framework, which is used to evaluate the overall safety and soundness of a bank. Therefore the study focuses on the following issues:

- Is there any relationship between the performance of bank and the selected CAMEL variables (internal variables)?
- Is there any impact of CAMEL variables on ROA and ROE of Nepalese Commercial banks?

1.3 Objective of the study

The main objective of this study is to measure following objectives;

- To measure and compare performance across the joint venture, private commercial banks and government banks.
- To find out the relationship between bank specific factors (ratios) on the bank performance using CAMEL model.
- To determine the impact of capital adequacy, asset quality, management efficiency, earnings and liquidity on ROA and ROE of Nepalese Commercial banks

1.4 Organization of the study

The report of study consists of five chapters. Second chapter deals with review of literature where in depth analysis of existing selected literature about the subject matter is reviewed. This includes review of literature and theoretical framework. Third chapter deals with the research methodology which includes five sub heads namely, research design, population and sample size determination, nature and source of data, definition of variables, method of data analysis. Fourth chapter will be about data presentation and analysis. Fifth chapter deals with summary of findings and conclusion.

CHAPTER II

REVIEW OF LITERATURE AND THEORETICAL SURVEY

2.1. Review of literature

A comprehensive literature survey on both developed and emerging economies was carried out to review broader theoretical and empirical literature on the influence of selected bank and the performance of commercial banks. Understanding of this relationship from the standpoint of developed and historical perspective will assist in developing methodology for empirical analysis of Nepalese market.

Table 1.1

Summary of theoretical and empirical review

Study	Major Finding
Baral 2005	<ul style="list-style-type: none"> Analyzed the financial health of joint ventures banks which is more effective than that of commercial banks.
Tarawneh 2006	<ul style="list-style-type: none"> Analyzed the financial performance of five omani banks which was strongly and positively influenced by the operational efficiency asset management & bank size.
Olson &oubi Dash and das Ilhoanch 2009	<ul style="list-style-type: none"> Analyzed the best performance of public sector banks with that of private foreign banks under CAMEL framework. Compared the bank performance of domestic &Foreign commercial banks in Malaysia using descriptive statistics, correlation and regression.
Tamimi 2010	<ul style="list-style-type: none"> Showed liquidity is the most influence factors in UAE's Islamic and conventional national banks.
Cihak and Hesse 2010	<ul style="list-style-type: none"> Studied the relative financial strength of Islamic banks using CAMEL indicators.
Kumbrai 2010	<ul style="list-style-type: none"> Investigated the performance of five large south African commercial banks.
Sangmi and Nazir 2010	<ul style="list-style-type: none"> Evaluated the financial performance of biggest nationalized bank i.e Punjab national band and biggest private sector bank i.eJamuna and Kashmir bank that is shaping the economic conditions of the northern India.
Abdul –Hamid and Azmi 2011	<ul style="list-style-type: none"> Compared the financial performance on the basis of CAMEL factors between one Islamic bank and eight conventional commercial bank in Malaysia.
Lohia 2011	<ul style="list-style-type: none"> Studied the performance of public and private banks in India using CAMEL framework
Minioui and Gohau 2011	<ul style="list-style-type: none"> Examined the magnitude of the gap between the conventional and Islamic banking using CAMEL model.
Shrestha 2011	<ul style="list-style-type: none"> Analyzed the long term profitability of commercial banks in Nepal using simple regression model
Prasad and Ravinder 2012	<ul style="list-style-type: none"> Used CAMEL model to study the nationalized banks on India with twenty nationalized banks.
Reddy 2012	<ul style="list-style-type: none"> Studied on the relative performance of commercial banks in India using CAMEL approach
Zafar, Maqbool, &Nawab Ali 2012	<ul style="list-style-type: none"> Studied the financial performance of Ten Indian commercial bank using CAMELS methodology.
Misra and Apa 2013	<ul style="list-style-type: none"> Analyzed the financial position and performance of the state bank groups using CAMEL model.
Sanwari and Zakaria 2013	<ul style="list-style-type: none"> Studied the Islamic bank performance in relation to the effect of both internal and external factors on Islamic bank performance
Tuna 2013	<ul style="list-style-type: none"> Studied the financial health of two banks in Indonesia using five assessments aspects of

Bansal and Mohanty 2014	<ul style="list-style-type: none"> • CAMEL model, and t-test to assess the difference between two banks.. • Studied the financial performance of commercial banks in India using CAMEL model.
Bhandari and Nakarmi 2014	<ul style="list-style-type: none"> • Studied the determinants of performance exposed by the financial ratios and determined the financial performance of commercial banks in Nepal through Analytical Hierarchy Process (AHP) based on their financial characteristics.
Ferrouhi 2014	<ul style="list-style-type: none"> • Analyzed the performance of major Moroccan financial institutions for the period 2001-2011 using CAMEL approach.
Gupta 2014	<ul style="list-style-type: none"> • Evaluated the performance of public sector banks in India using CAMEL approach.
Ibrahim 2014	<ul style="list-style-type: none"> • Analyzed the financial performance of two UAE based banks, by looking at various set of ratios that are used to measure the bank performance.
Cong, Peng and Chin 2015	<ul style="list-style-type: none"> • Examined the factors that will significantly affect both the conventional and Islamic banks performance in Malaysia
Getahun 2015	<ul style="list-style-type: none"> • Analyzed the financial performance of commercial banks in Ethiopia using CAMEL approach
Hadriche 2015	<ul style="list-style-type: none"> • Studied the determinants of banks performance by comparative analysis of conventional and Islamic banking from GCC countries
Ibrahim 2015	<ul style="list-style-type: none"> • Measured the financial performance of two Islamic banks in United Arab Emirates.
Ibrahim, M. 2015	<ul style="list-style-type: none"> • Compared the financial performance of conventional and Islamic Banking in United Arab Emirates
Peyavali and Sheefeni 2015	<ul style="list-style-type: none"> • Analyzed the bank-specific determinants for commercial bank's profitability in Namibia.
Tesfai 2015	<ul style="list-style-type: none"> • Investigated the relationship between three components of CAMEL: liquidity, capital adequacy and non-performing loans and financial performance (profitability) of Habib Bank AG Zurich, Kenya.

Baral (2005) studied the performance of joint ventures banks in Nepal by applying the CAMEL Model. His study was mainly based on secondary data drawn from the annual reports published by joint venture banks. His report analyzed the financial health of joint ventures banks in the CAMEL parameters. His findings of the study revealed that the financial health of joint ventures is more effective than that of commercial banks. Moreover, the components of CAMEL showed that the financial health of joint venture banks was not difficult to manage the possible impact to their balance sheet on a large scale basis without any constraints inflicted to the financial health.

Tarawneh (2006) made an effort to analyze the financial statement of five Omani banks for the financial period 1999-2003. In addition, the study used simple regression to estimate the impact of asset management, operating efficiency and bank size on the financial performance of these banks. The study found that that financial performance of the banks was strongly and positively influenced by the operational efficiency, asset management and bank size.

Olson and Zoubi (2008) made an effort to study conventional and Islamic banks in the Gulf Cooperation Council region on the basis of financial characteristics alone. The study

adapted financial ratio into logit, neural network and K-means nearest neighbor classification models to determine whether these ratios distinguish between the two types of banks. The result indicated that measures of bank characteristics such as profitability ratios, efficiency ratios, assets quality indicators and cash/ liability ratios are good discriminators between Islamic and conventional banks in the GCC region.

Bakar and Tahir (2009) in their paper used multiple linear regression technique and simulated neural network techniques for predicting bank performance. ROA was used as dependent variable of bank performance and seven variables including liquidity, credit risk, cost to income ratio, size and concentration ratio, were used as independent variables. They concluded that neural network method outperforms the multiple linear regression method however it need clarification on the factor used and they noted that multiple linear regressions, not with its limitations, can be used as a simple tool to study the linear relationship between the dependent variable and independent variables.

Dash and Das (2009) have analyzed the Indian Banking Industry under CAMELS framework. The thesis compares the performance of public sector banks with that of private/ foreign banks. The analysis was performed from a sample of 58 banks operating in India of which 29 were public sector banks and 29 were private/foreign sector. The data used were from the audited financial statement for the financial years 2003-2008. The findings concluded that private/foreign banks have an edge over the public sector banks. The two factors of the CAMEL parameters that contribute to the best performance of the private banking/foreign were the Management Soundness and Earnings and profitability.

Ilhomovich (2009) made the effort to study the factors affecting the performance of foreign banks in Malaysia. The main objective of study was to compare the performance of domestic and foreign operating in Malaysia for the period of 5 years from 2004 to 2008. The study used descriptive statistics, correlation and regression and financial ratios of bank by extracting components of CAMEL. The study found that foreign banks have strong capital and more profitable. However, existing foreign banks are affecting financial services quality in Malaysia, because all banks offer better and low cost banking services for customers during strong competition. In addition overall local banks show

higher ROA than foreign banks. To conclude, bank performance of commercial banks in Malaysia influence by the capital adequacy ratio, total loans to total assets ratio, NPL to total assets ratio, interest expenses to total loans, total operating profit to revenue and loans to deposit ratio.

Al Tamimi(2010) made an effort to some influential factors in UAE's Islamic and conventional national banks during the period 1996-2008. The study used two independent variables were used separately against five independent variables which are the financial development indicator, liquidity, concentration, cost and branch number using regression analysis. The study showed that liquidity is most influenced factor for conventional banks. In addition, the result also showed the influential factors as the cost and the branch number.

Cihak and Hesse (2010) made an effort to study the relative financial strength of Islamic banks using CAMEL indicators. The study used Z-score as a measure of stability on individual Islamic and commercial banks in 19 banking systems. The finding of the study were small Islamic banks tend to be financially stronger than small commercial banks, Large commercial banks tend to be financially stronger than large Islamic banks, and Small Islamic banks tend to be stronger than large Islamic banks.

Kumbrai et al. (2010) investigated the performance of South Africa's commercial banking sector for the period 2005-2009. The study used financial ratios to measure profitability, liquidity and credit quality performance of five large South African based commercial banks. The study concluded that an improvement in the bank performance in terms of profitability, liquidity and credit quality from 2005 to 2007. The study also found significant differences in profitability performance for the period 2005-2006 and the period 2008-2009.

Sangmi and Nazir (2010) have evaluated the financial performance of 2 top major banks in the northern India representing the biggest nationalized bank (i.e. Punjab national Bank, PNB) and the biggest private sector bank (i.e. Jamuna and Kashmir Bank, JKB). These 2 banks were selected in view their role and involvement in shaping the economic conditions of the northern India, specifically in terms of advances, deposits, man power employment, branch network etc. The research was mainly conducted on secondary data

from annual reports of the respective banks. And the data used is related to five financial years (i.e. 2001-2005). The results highlighted that the position of the banks under study is sound and satisfactory as far as their capital adequacy, asset quality management capability and liquidity is implicated.

Abdul- Hamid and Azmi (2011) compared the financial performance between one Islamic bank eight conventional commercial banks for the period 2000-2009. The study used financial measurement on the basis of CAMEL factors. The study evaluated inter-temporal and interbank performance of the pioneer of Islamic banking in Malaysia. The study used T-tests in determining their significance and used data for one Islamic bank for the period of 2000-2009 while the data used for eight conventional banks from 2005-2009. The study found that while there is no significant difference in profitability during these periods, Islamic bank is relatively more liquid and less risky as compared as conventional banks.

Lohia (2011) made an effort to study the performance of Indian banking industries over the period of the last ten years (2001- 2010). The study used the CAMEL framework to determine the performance of public and private banks in India. The study used the regression model to find the bank's profitability indicators ROA and ROE on the public and private banks.

The major finding of the study was that private banks perform better than public banks overall based on the CAMEL Framework. Public banks had performed very well according to the CAMEL Framework and have performed better than private banks in some instances. However, this study found that the private banks performed better than the public banks on all measures of the CAMEL Framework, so even though the public banks have come a long way, they have a long way to go to compete with the operational efficiency levels of private banks. In addition, this study finds that the Indian banks have recovered from the crisis and most of the private banks are displaying an upward trend in terms of profitability and liquidity.

Miniaoui and Gohou(2011) examined the performance of the main Islamic banks using CAMEL model. The study adapted the balance sheets for 37 banks of the UAE. The study main objective was to assess the magnitude of the gap between the conventional

and Islamic banking systems using conditional and unconditional methodology. The study analyzed two sets of financial indicators related to capital, earning, assets, profitability and productivity. The study found that conventional banks in the UAE performed better than the Islamic banks.

Shrestha (2011) made an effort to analyze the long-term profitability of commercial banks in Nepal. The study was done taking sample of 7 commercial banks established in and before 1995 and having positive net-worth growth for the period between 2003/04 and 2009/10. The study has used a descriptive and analytical research design based on secondary data. The method used was simple regression model. Profitability analysis showed that all the sample banks were sound as per used criteria (i.e., NPV, PI and IRR). From the study, it was concluded that NPV is positive, PI is greater than 1 and IRR is greater than cost of capital. This means that profitability in future is sound for the commercial banks in Nepal. Since the only 15 years old commercial banks are selected as a sample and weighted interest rate is used as discounting rate, the result should not be generalized from this study. Jha and Hui (2012) also used CAMEL model to compare the financial performance of commercial banks in Nepal by identifying the determinants of performance. They used regression models to estimate the impact of capital adequacy ratio, non-performing loan ratio, interest expenses to total loan, net interest margin and credit to deposit ratio on the financial profitability namely Return on Assets (ROA) and Return on Equity (ROE). (ROA) was significantly influenced by capital adequacy ratio, interest expenses to total loan and net interest margin, while capital adequacy ratio had considerable effect on return on equity. The result of their findings revealed that return on assets (ROA) was significantly influenced by capital adequacy ratio, interest expenses to total loan and net interest margin, while capital adequacy ratio had considerable effect on return on equity.

Kumar, Harsha, Anand and Dhruva (2012) made an effort to analyze the performance of selected Indian commercial banks using CAMEL approach. The study has taken 12 banks including public and private sector banks over a period of eleven years (2000-2011). The group rankings of all the banks considered for the purpose of study was taken and averaged out to reach at the overall grand ranking. HDFC is ranked first under the CAMEL analysis followed by ICICI. Axis Bank occupied the third position. The fourth

position is occupied by IDBI and KMB jointly while Bank of Baroda and PNB follow. The last position under CAMEL analysis is occupied by Union bank amongst all the selected banks. Looking at the trend, the study shows that private banks are growing at a faster pace than public sector banks and will head towards convergence faster than the PSBs.

Thus through this particular data set, the study established that private sector banks are at the top of the list with their performances in terms of soundness being the best. Public sector banks like Union Bank and SBI have taken a backseat and display low economic soundness in comparison. This implied that the Government needs to focus more on the Public Sector Banks in order to increase the net profit to average assets ratio, profit per employee etc.

Prasad and Ravinder (2012) used CAMEL model to study the nationalized banks on India with twenty nationalized banks for the period of 2005-2010. The banks were first individually ranked based on the sub-parameters of each CAMEL parameter. The group average was then calculated for each parameter of each bank. Finally composite rankings for the banks were calculated with the help of the average of all the parameters. In the study mean was used to sum the ratios over a 5 year period and ranked on the individual sub-parameter and parameter. Composite ranking was used for determining the overall CAMEL rank standing. The findings revealed that on average Andhara bank was at the top most position followed by Baroda, Punjab and Sindh bank. The Central Bank of India was at the bottom position.

REDDY (2012) made an effort to study on the relative performance of commercial banks in India using CAMEL approach. The study were conducted for a panel data taken from statistical tables relating to banks published by RBI(2009) consists of 26 public, 19 domestic private sector, and 16 foreign banks and rankings were given to various banks for the years 1999 and 2009. The main objective of the study was to find out the CAMEL, component facts capital, asset quality, management, earning and liquidity to reflect the performance, financial condition, operating soundness and regulatory compliance of the banking institution. The study adapted a composite rating as an abridgement of the component rating and is taken as the prime indicator of a

banks financial condition, these composite ranges between 1 best and 5 worst and involves a certain amount of subjectivity based on the examiners overall assessment of the institution in view of the individual component assessments. It is found that during the year 2009 the top three performing banks in all the categories of CAMEL are Mashreq Bank, China Trust Commercial Bank and Bank of Ceylon because of high capital adequacy, and liquidity. The worst three performers are American Express Bank, Development Credit Bank and Catholic Syrian Bank during the study period because of low capital adequacy, low assets and earnings quality and poor management quality. Further, Mashreq Bank, Indian Bank, Oman International Bank, Punjab & Sind Bank, Abu Dhabi Bank, United Bank of India, Ratnakar Bank, China Trust Commercial Bank, Uco Bank are very progressive banks with high progress ratios during 1999-2009. UTI Bank, Jammu & Kashmir Bank, Indus Indian Bank, Development Credit Express Bank, Sonali Bank is very bad progressive banks with low progress ratios during 1999-2009. Public sector banks have significantly improved indicating positive impact of the reforms in liberalizing interest rates, rationalizing directed credit and Investments and increasing competition.

Zafar, Maqbool, & Nawab Ali (2012) made an effort to study the financial performance of Ten Indian commercial bank using CAMELS methodology. The study uses data from the annual report of the banks from 2005-6 to 2009-10 which were readily available from respective banks annual reports and other corporate databases. A finite sample size of ten banks listed on the National Stock Exchange (NSE) had been taken for the purpose of the study which involves in depth comparative study of all selected banks ICICI, SBI, AXIS, HDFC, Bank of India, PNB, IDBI, Union Bank of India, Bank of Baroda, Canada Bank. The study uses ranking method to determine which banks perform better in the study period.

The study shows that Indian banking sector having shown extraordinary financial performance even amidst the financial crisis and performed better in the year 2010 than 2009. This study revealed that public sector commercial banks have performed remarkably better on every CAMEL parameter in comparison to their private competitive banks. As far as private sector banks are concerned ICICI banks has shown better

performance and outperformed other private sector banks but lag behind public sector commercial banks.

Misra and Apa (2013) analyzed the financial position and performance of the state bank groups using CAMEL model. The study tested their hypothesis on six banks on the basis that there is no significant difference in performance using twenty financial ratios. The findings showed that different banks obtained different ranks with respect to CAMEL ratios. The study also depicted that thought ranking of ratios is different for different banks in state groups. But there is no statistically significant difference between banks the CAMEL ratios. It signifies that overall performance of state group is same.

Sanwari and Zakaria (2013) made an effort to study the Islamic bank performance in relation to the effect of both internal and external factors on Islamic bank performance. Global Islamic banks data were obtained from the annual report on Islamic banking from Bank scope database. Panel data of 74 Islamic banking from around the world were examined for the period 2000-2009. The study found that the performance of these banks depends more on bank specific characteristics such as capital, assets quality and liquidity, while macroeconomic factors do not significantly influence Islamic bank's profit.

Tuna (2013) made an effort to study the financial health of two banks in Indonesia for the period of 2008-2012. The study used five assessments aspects of CAMEL model, and used t-test to assess the difference between two banks. The study found that there is no significant difference about bank soundness between two banks.

Bansal and Mohanty (2014) made an effort to study the financial performance of commercial banks in India using CAMEL model. The study uses sample of five commercial banks on the basis of highest market capitalization from the period 2007 to 2011. The study uses weightage ratio to each parameter of the CAMEL Model. From the weighted results of each ratio, the study has given marks on the basis of performance of each bank. On the basis of best overall performance, the study has assigned ranks from 1 to 5 to the banks under study. As per the whole evaluation, results of the study were as follows. 1st Rank: HDFC Bank; 2nd Rank : SBI Bank; 3rd Rank : Kotak Mahindra Bank; 4th Rank : ICICI Bank; 5th Rank : AXIS Bank.

Bhandari and Nakarmi (2014) made an effort to study the determinants of performance exposed by the financial ratios and determine the financial performance of commercial banks in Nepal through Analytical Hierarchy Process (AHP) based on their financial characteristics. The study used 13 commercial banks including 3 public sector banks for financial data from year 2008/09 to 2011/12. The financial parameters were derived by segregating 5 major criteria which were liquidity, efficiency, profitability, capital adequacy and assets quality. The set of AHP questionnaire was constructed and analyzed through Expert Choice Software ver. 11. 13 expert pairwise comparisons were collected for analysis. The study had done sensitivity analysis that shows an apparent Capital Adequacy risk for Nepal Bank Limited and RastriyaBanijya Bank which has to be improved significantly. The ability of dynamic sensitivity analysis feature available with the AHP processing software further helps to overcome the accuracy of data presented by the individual banks, which could be the added value to bank regulators.

The paper emphasizes financial decision problems to have strong multi criteria character and establishes priorities for performance parameters of commercial banks among financial indicators identified and ranks banks according to those indicators.

Ferrouhi (2014) analyzed the performance of major Moroccan financial institutions for the period 2001-2011 using CAMEL approach. The study used one financial ratio for each of capital adequacy, assets quality, management quality, earning ability and liquidity position measures. The testing of the above measurement on Six Moroccan institutions revealed that all the six banks did well over the periods of the study. The study findings were based on ranking the average of each ratio showed that some banks are better off than others.

Gupta (2014) made an effort to evaluate the performance of public sector banks in India. The study used CAMEL approach for a 5 year period 2009-2013, and adapted multi regression model and found that there is statistically significant difference between the CAMEL ratios of all the public sectors banks in India. Therefore, the overall performance of public sectors is different.

Ibrahim (2014) analyzed the financial performance of two UAE based banks between the years 2004 and 2009, by looking at various set of ratios that are used to measure the bank

performance. The analysis revealed that both banks did well over the above period; each bank scored high level of performance in one area than another.

Cong, Peng and Chin (2015) made an effort to examine the factors that will significantly affect both the conventional and Islamic banks performance in Malaysia. This study utilizes the secondary data collected from the quarterly financial reports of 4 Islamic banks and 4 conventional banks in Malaysia from 2009 to 2013. A panel data multiple linear regression (MLR) model has been applied in order to test the relationship between profitability and its determinants.

The explanatory variables are categorized into internal and external factors in this study. The internal factors include capital adequacy, bank size and operational efficiency, while the external factors are inflation and economic growth. From the result, it is found that capital adequacy, operational efficiency, economic growth and inflation have significant impact on the profitability of conventional banks. On the other hand, profitability of Islamic banks is determined by bank size, operational efficiency and inflation. It is worth to mention that operational efficiency is the only factor that brings the same effect to the profitability of both conventional and Islamic banks, which is significant positive effect. Besides that, the result also implies that the factors that have significant impact on the profitability of conventional banks will not necessary affect the profitability of Islamic bank.

Getahun (2015) made an effort to analyze the financial performance of commercial banks in Ethiopia using CAMEL approach. Balanced panel data of seventy observations from 2010 to 2014 of fourteen commercial banks was analyzed using multiple linear regressions method. The study used quantitative research approach and secondary financial data were analyzed by using multiple linear regression models for two profitability measures: ROE and ROA. Fixed effect regression model was applied to investigate the impact and relationship of CAMEL factors: capital adequacy, asset quality, management efficiency, earning and liquidity with bank profitability measures separately.

The empirical result shows that capital adequacy, asset quality and management efficiency have negative relation whereas earning and liquidity shows positive

relationship with both profitability measures with strong statically significance except capital adequacy which is insignificant for ROA whereas asset quality for ROE. The study suggests focusing and reengineering the banks internal drivers could enhance the profitability of commercial banks in Ethiopia.

Hadriche (2015) made an effort to study the determinants of banks performance by comparative analysis of conventional and Islamic banking from GCC countries. The main objective of this study was to compare and identify the determinants of the performance for Islamic banks with conventional banks operating in GCC countries from 2005 to 2012. The study used a sample of 71 conventional banks and 46 Islamic banks that operate inside GCC countries for the period 2005-2012. The model used was CAMEL.

Ibrahim (2015) measured the financial performance of two Islamic banks in United Arab Emirates for the period of 2003-2007. The study used different groups of financial ratios have been used to measure the performance and make a comparison between these two banks. The study results showed that both banks did well, it appears that each bank has it focus on some area such as liquidity, profitability, capital structure and stability.

Ibrahim, M. (2015) made an effort to compare the financial performance of conventional and Islamic Banking in United Arab Emirates. The central objective of the paper has been conducted a comparative performance of two banks in UAE for the period of 2002-2006. Five groups of parameters have been used to measure liquidity, profitability level, management capacity, capital structure and share performance. The findings showed that both banks are financially viable as both have used the appropriate financial tools and policies to manage their organization and to adapt their dynamic environment, resulting in a modest maximization of their profits. The liquidity level in Dubai Islamic banks is lower than that of rival banks. The research findings also show that bank of Sharjah possesses high level of profitability but cautions that this is accompanies with a high level of instability as well. As far the management capacity ratios, the analysis declared that bank of Sharjah managed its operations with a lower level of expenditure than its rival bank. In addition, the analysis showed that the bank of Sharjah has stronger financial structures than its competitor. Finally the analysis of the share performance and Z-scores

showed that Dubai Islamic bank is in a stronger position than the bank of Shrhah in terms of overall stability.

Peyavali and Sheefeni (2015) made an effort to analyze the bank-specific determinants for commercial bank's profitability in Namibia. The data used in this paper are of quarterly frequency for the period 2001:Q1 to 2014:Q2. Secondary data were obtained from the Bank of Namibia's various statutory publications, Namibia Statistical Agency's statutory publications and from the World Bank. The vector auto regression (VAR) approach is used in this study. The Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) tests were used to investigate the variant characteristics of the variables as well as to ascertain the order of integration.

The results reveal that capital adequacy, credit risk and liquidity risk as the main determinant of commercial bank's profitability in Namibia. This suggests that the quality of loan portfolio determines the profitability of banks. Moreover, the bank had the ability to fulfill its obligations to the depositors. The banks had required level of capital that enables them to withstand credit, market and operational risks they are exposed to in order to absorb the potential loss and protect the bank's debtors. The study recommended that Namibia should continue closely monitoring the determinants identified to position itself well and to pick-up any early warning in case of crisis of any sort.

Tesfai (2015) made an effort to investigate the relationship between three components of CAMEL: liquidity, capital adequacy and non-performing loans and financial performance (profitability) of Habib Bank AG Zurich, Kenya. The study used purposive sampling to select Habib Bank AG Zurich making inferences using the secondary data for a period of seven years (2008-2014) and the regression statistical tool was employed for the estimation of the model.

The study found that the three CAMEL indicators influence the profitability of Habib Bank AG Zurich in terms of ROE, ROA and cost income. Liquidity influences ROE, ROA and cost income ratio positively implying that an increase in liquidity will lead to an increase in profitability of commercial bank. In addition, non-performing loans were found to influence ROE and ROA and cost income ratios negatively. The study recommended that the finance managers should pay attention to the liquidity of

commercial banks to improve profitability. The study further recommended that the Bank should organize the process of liquidity management through identifying, measuring, monitoring, and controlling liquidity risk.

The result found that Islamic banks are on-average more profitable than the Conventional ones. Also the Islamic banks were better in investment decisions, in responding to balance sheet shocks and in attracting more profit. Results showed that Islamic banks are better in maintaining capital adequacy, asset quality, management quality and earning and the difference is significant. The results also suggested that, in terms of capital adequacy, Islamic banks are better in investment decisions, in responding to balance sheet shocks and in attracting more profit. The finding also showed a lack of management ability in conventional banks, which are more concentrated on expansion strategies rather than performance-oriented strategies.

2.2 Theoretical Framework

The theoretical framework is developed so that it serves as a foundation on which the entire research is based. Few of the published paper on it are presented.

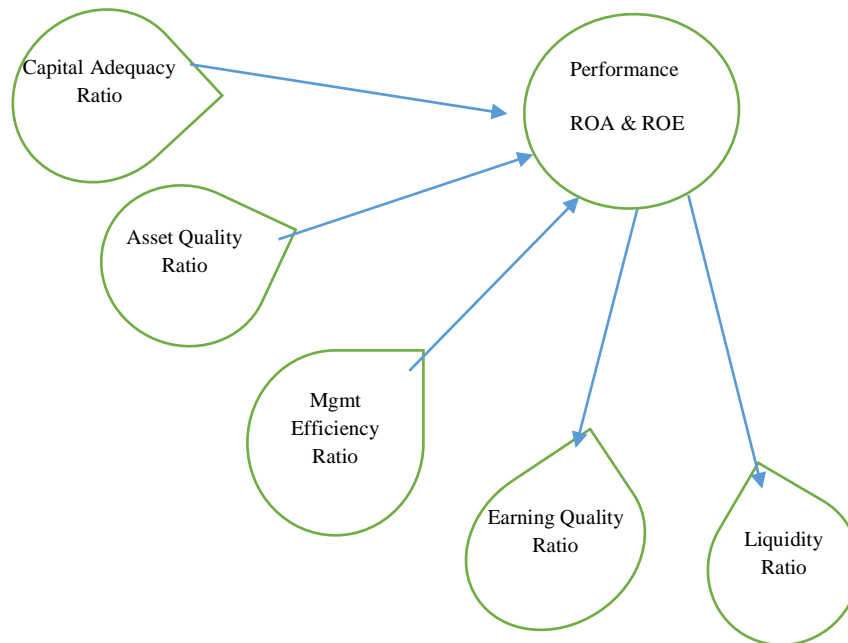
Jie Liu (2011) examines the impact of independent variables from CAMEL model on the bank performance in China's banking sector. The independent variables from CAMEL model include: capital adequacy, asset quality, management, earning, and liquidity. The sample size for the research was the 13 Chinese banks listed in Shanghai Stock Exchange and Shenzhen Stock Exchange from 2008 to 2013. The study adapted fixed effects multiple linear regression model to measure the relationship between internal determinants from CAMEL model and bank performance. The findings of this research show that return on assets can be influenced by shareholders risk weighted capital adequacy ratio, NPL to total loan ratio, cost to income ratio, net interest rate margins, and loan to deposit ratio.

Ifeacho (2014) investigated the impact of bank specific variables and selected macroeconomic variables on the South Africans banking sector for the period 1994-2011

using the capital adequacy, asset quality, management earnings and liquidity (CAMEL) model of bank performance evaluation. The study employs data in annual frequency from South Africa's four largest banks. These banks accounts for over 70% of South Africa Banking assets. Using ROA and ROE as measures of bank performance, the study found that all bank specific variables are statistically significant determinants of bank performance. Specifically, the study showed that asset quality, management quality and liquidity have a positive effect on both measures of bank performance, which is consistent with prior theoretical expectations. Capital adequacy, however, exhibits a surprising significant negative relationship with ROA, while its relationship with ROE is significant and positive as expected. Except for interest rates in ROA model, unemployment rate and the rate of inflation the rest of the macroeconomic variables are statistically insignificant. The study reveals that bank performance is positively related to interest rates and negatively related to unemployment rates and interest rates.

The systematic diagram based on conceptual framework is as follow. This is a self made model based on the assumption that all bank internal factors have impact on the performance of joint venture, private commercial bank, and government banks. The conceptual model can be presented in the diagram as:

Fig 1.1. Conceptual Framework



Functionally,

$$\text{ROA}=\text{f}(\text{x})_i$$

$$\text{ROE}=\text{f}(\text{y})_i$$

Where i= capital adequacy, assets quality, management, earnings, and liquidity

Defining Variables

Return on Assets

Return on Assets is also another major ratio that indicates the profitability of a bank. It is a ratio of income to its total assets. It measures the ability of the bank management to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution.

Mathematically,

$$\text{ROA}=\text{Net Income/ Total Assets}$$

Return on Equity

Return on Equity is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high return on equity is likely to be one that is capable of generating internally. ROE reflects how effectively a bank management is using shareholders' funds.

$$\text{ROE}=\text{Net Income/ Share holder's equity}$$

Capital Adequacy Ratio

Capital is one of the bank specific factors that influence the level of bank profitability. Capital is the amount of own fund available to support the banks business and act as buffer in case of adverse situation. Bank capital creates liquidity for the bank due to the fact that deposits are most fragile and prone to bank runs.

$$\text{CAR}=\text{Core Capital Ratio} +\text{Supplementary Capital Ratio}$$

Assets Quality

The bank's asset quality is another bank specific variable that affects the profitability of a bank. The bank asset include among other current asset, credit portfolio, fixed assets, and other investment. Often a growing asset related to age of the bank. More often than not the loan of a bank is the major asset that generates the major share of the banks income. Loan is the major asset of commercial banks from which they generate income.

Assets Quality Ratio= Non-performing Assets/ Total Loans

Management Efficiency

Management efficiency is one of the key internal factors that determine the bank profitability. It is represented by different financial ratios like total asset growth, loan growth rate and earning growth rate. Yet, it is one of the complexes subject to capture with financial ratios. Moreover, operational efficiency in managing the operating expenses is another dimension for management quality. The performance is often expressed qualitatively through subjective evaluation of management systems, organizational discipline, control systems, quality of staffs, and others.

Management Efficiency Ratio= Total Advances (Employee loan and advances, prepaid expenses)/ Total Deposits

Earning Quality

This parameter lays importance on how a bank earns its profits. This also explains the sustainability and growth in earnings in the future. Some of the ratios considered to assess the earning ability of the banks were net income as percentage of total assets, net interest income as a percentage of total assets, ROA, ROE, pre –tax profit/ total assets, income spread to total assets, cost to income ratio, operating profit to total assets, interest income to total income and non interest income to total income.

Earning Quality Ratio= Total Interest income/ Net Income

Liquidity

Liquidity is another factor that determines the level of bank performance. Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. According to

Dang (2011) adequate level of liquidity is positively related with bank profitability. The most common financial ratios that reflect the liquidity position of a bank according to the above author are customer deposits to total asset and total loan to customer deposits.

Liquidity Ratio=Liquid Assets (Cash, Bank, Money at call, Nepal Rastra Bank, Investment)/ Total Assets

2.3 Research hypothesis

The research has tested the following hypothesis:

- **H₀₁:** There is no significant relationship between banks capital adequacy ratio and ROA of the Nepalese commercial banks.
- **H₀₂:** There is no significant relationship between banks asset quality ratio and ROA of the Nepalese commercial banks.
- **H₀₃:** There is no significant relationship between banks management efficiency ratio and ROA of the Nepalese commercial banks.
- **H₀₄:** There is no significant relationship between banks earnings ratio and ROA of the Nepalese commercial banks.
- **H₀₅:** There is no significant relationship between banks liquidity ratio and ROA of the Nepalese commercial banks.
- **H₀₆:** There is no significant relationship between banks capital adequacy ratio and ROE of the Nepalese commercial banks.
- **H₀₇:** There is no significant relationship between banks asset quality ratio and ROE of the Nepalese commercial banks.
- **H₀₈:** There is no significant relationship between banks management efficiency ratio and ROE of the Nepalese commercial banks.
- **H₀₉:** There is no significant relationship between banks earnings ratio and ROE of the Nepalese commercial banks.
- **H₁₀:** There is no significant relationship between banks liquidity ratio and ROE of the Nepalese commercial banks.
- **H₁₁:** There is no significant relationship between Himalayan Bank Limited and capital adequacy ratio

- **H₁₂**: There is no significant relationship between Himalayan Bank Limited and asset quality ratio
- **H₁₃**: There is no significant relationship between Himalayan Bank Limited and management efficiency ratio.
- **H₁₄**: There is no significant relationship between Himalayan Bank Limited and earnings ratio.
- **H₁₅**: There is no significant relationship between Himalayan Bank Limited and liquidity ratio.
- **H₁₆**: There is no significant relationship between Nepal Investment Bank capital adequacy ratio.
- **H₁₇**: There is no significant relationship between Nepal Investment Bank and asset quality ratio .
- **H₁₈**: There is no significant relationship banks Nepal Investment Bank and management efficiency ratio.
- **H₁₉**: There is no significant relationship between Nepal Investment Bank and earnings ratio.
- **H₂₀**: There is no significant relationship between Nepal Investment Bank and liquidity ratio .
- **H₂₁**: There is no significant relationship between Nepal SBI Bank Ltd and capital adequacy ratio.
- **H₂₂**: There is no significant relationship between Nepal SBI Bank Ltd and asset quality ratio .
- **H₂₃**: There is no significant relationship between Nepal SBI Bank Ltd and management efficiency ratio.
- **H₂₄**: There is no significant relationship between Nepal SBI Bank Ltd and earnings ratio.
- **H₂₅**: There is no significant relationship between Nepal SBI Bank Ltd and liquidity ratio .
- **H₂₆**: There is no significant relationship between Nepal Bank Ltd and capital adequacy ratio.

- **H₂₇**: There is no significant relationship between Nepal Bank Ltd and asset quality ratio .
- **H₂₈**: There is no significant relationship Nepal Bank Ltd and management efficiency ratio.
- **H₂₉**: There is no significant relationship between Nepal Bank Ltd and earnings ratio.
- **H₃₀**: There is no significant relationship between Nepal Bank Ltd and liquidity ratio .
- **H₃₁**: There is no significant relationship between Laxmi Bank Limited and capital adequacy ratio.
- **H₃₂**: There is no significant relationship between Nepal Bank Ltd and asset quality ratio .
- **H₃₃**: There is no significant relationship banks Nepal Nepal Bank Ltd and management efficiency ratio.
- **H₃₄**: There is no significant relationship between Nepal Bank Ltd and earnings ratio.
- **H₃₅**: There is no significant relationship between Nepal Bank Ltd and liquidity ratio .
- **H₃₆**: There is no significant relationship between Everest Bank Limited and capital adequacy ratio.
- **H₃₇**: There is no significant relationship between Everest Bank Limited and asset quality ratio .
- **H₃₈**: There is no significant relationship Everest Bank Limited and management efficiency ratio.
- **H₃₉**: There is no significant relationship between Everest Bank Limited and earnings ratio.
- **H₄₀**: There is no significant relationship between Everest Bank Limited and liquidity ratio.
- **H₄₁**: There is no significant relationship between RastriyaBanijya Bank and capital adequacy ratio.
- **H₄₂**: There is no significant relationship between RastriyaBanijya Bank and asset quality ratio.
- **H₄₃**: There is no significant relationship RastriyaBanijya Bank and management efficiency ratio.

- **H₄₄**: There is no significant relationship between RastriyaBanijya Bank and earnings ratio.
- **H₄₅**: There is no significant relationship between RastriyaBanijya Bank and liquidity ratio.

CHAPTER III

RESEARCH METHODOLOGY

A methodology is usually a guideline system for solving a problem with specific components such as phases, tasks, method, technique and tools. It can be define also as follows: The analysis of the principles of methods, rules and postulates employed by a discipline. The systematic study of methods that are can be or have been applies within a discipline. The study or description of methods.

3.1. Research design

The study investigated the relationship of selected bank variables and different ratio on performance of commercial banks of Nepal. The research design used in this study is quantitative in nature and cross sectional data collected from selected commercial bank website; secondary data regarding CAMEL ratios have been taken in order to examine the relationship. The study main concern is on the adaption of multifactor model to explain the factor of variation on performance of commercial banks. In this regards, the study followed a multifactor model in finding the relationship of selected bank internal variables with ROA, ROE. The bank internal selected variables taken into consideration are capital adequacy ratio, non- performing loan to total loan, total advance to total deposits, interest income to total income and liquid assets to total assets. The performance ratios are return on assets and return on equity which is assumed to dependent variable while bank specific internal variables are as independent variables. The research design used in this study is quantitative in nature and used cross sectional data collected from selected commercial bank website. Secondary data regarding CAMEL ratios have been taken in order to examine the relationship.

The study used a descriptive financial analysis to describe , measure , compare and classify the financial performance of Nepalese commercial banks and as well as applied an econometric multivariate regression model to test the significance of variable on performance of commercial banks. This research carried out for determining performance of sampled commercial banks of Nepal using data for eight years from 2010 to 2017.

3.2 Population and sample size

The population for the research is the twenty eight commercial banks in Nepal. The sampling technique to be used is Stratified Judgmental Sampling. The commercial banks are divided into three sub groups according to the type of management in the Bank. The sub groups are the Government Commercial Banks, Joint Venture Commercial Banks and Private Commercial Banks. The sample of seven banks for the purpose of this study was chosen by using Judgmental sampling techniques which are Nepal Bank Limited, Nepal SBI Bank Limited, Everest Bank Limited, Himalayan Bank Limited, Nepal Investment Bank, LaxmiBank Limited and RastriyaBanijay Bank . The study used the sample period form year 2010-2017. It carried out by using eight yearly samples to examine the relationship between selected bank internal variables with performance of selected commercial banks.

Table 1.2

List of selected commercial banks.

SN	Name of Commercial Banks	Abbreviations
1	Nepal Bank Limited	NBL
2	Nepal Investment Bank Limited	NIBL
3	Himalayan Bank Limited	HBL
4	Everest Bank Limited	EBL
5	Laxmi Bank Limited	LBL
6	RastriyaBanijayBank Limited	RBB
7	Nepal SBI Bank Limited	NSBI

3.3 Nature and source of data

The present study is diagnostic and exploratory in nature. The data are of secondary in nature. In this regard, the study has used a descriptive and analytical and research design. It is based on the secondary date retrieved form financial statement and NRB supervision report. The use of five independent variables depends on two main reasons; firstly after reviewing literature the researcher found that these variables seems to be more

influencing than others in previous studies and the availability of data is another major concern in Nepalese economy.

The secondary data are obtained from annual report of 8 year published by commercial bank in their websites. The researcher had selected the required data from those reports. These published report fulfilled the objective of the study and the researcher will enter the data in data analysis tool SPSS. The researcher used descriptive statistics, mean comparison to find out which perform better, and multivariate regression analysis to check the relationship with performance. The researcher extracted data accordingly as per the research objective.

For the secondary data analysis, multi co-linearity variance analysis and correlation has be carried out along with cross checking of data in order to check the reliability and validity of data. Since all data used for the study are based on annual reports and NRB statistics, the analysis is considered as a valid for the study purpose. The primary data are not need for the study. Hence, the study will be mainly based on published annual reports and statistics.

3.4 Definition of variables

Capital adequacy ratio

Capital is one of the bank specific factors that influence the level of bank profitability. Capital is the amount of own fund available to support the banks business and act as buffer in case of adverse situation. Bank capital creates liquidity for the bank due to the fact that deposits are most fragile and prone to bank runs.

CAR=Core Capital Ratio +Supplementary Capital Ratio

Assets quality

The bank's asset quality is another bank specific variable that affects the profitability of a bank. The bank asset include among other current asset, credit portfolio, fixed assets, and other investment. Often a growing asset related to age of the bank. More often than not

the loan of a bank is the major asset that generates the major share of the banks income.

Loan is the major asset of commercial banks from which they generate income. Assets

Quality Ratio= Non-performing Assets/ Total Loans

Management efficiency

Management efficiency is one of the key internal factors that determine the bank profitability. It is represented by different financial ratios like total asset growth, loan growth rate and earnings growth rate. Yet, it is one of the complexes subject to capture with financial ratios. Moreover, operational efficiency in managing the operating expenses is another dimension for management quality. The performance is often expressed qualitatively through subjective evaluation of management systems, organizational discipline, control systems, quality of staffs, and others.

Management Efficiency Ratio= Total Advances (Employee loan and advances, prepaid expenses)/ Total Deposits

Earning quality

This parameter lays importance on how a bank earns its profits. This also explains the sustainability and growth in earnings in the future. Some of the ratios considered to assess the earning ability of the banks were net income as percentage of total assets, net interest income as a percentage of total assets, ROA, ROE, pre –tax profit/ total assets, income spread to total assets, cost to income ratio, operating profit to total assets, interest income to total income and non-interest income to total income.

Earning Quality Ratio= Total Interest income/ Net Income

Liquidity

Liquidity is another factor that determines the level of bank performance. Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. According to Dang (2011) adequate level of liquidity is positively related with bank profitability. The

most common financial ratios that reflect the liquidity position of a bank according to the above author are customer deposits to total asset and total loan to customer deposits.

Liquidity Ratio=Liquid Assets (Cash, Bank, Money at call, Nepal Rastra Bank, Investment)/ Total Assets

3.5 Methods of data analysis

Data are analyzed through descriptive statistics, correlation matrix and econometric model. Mean, Minimum, Maximum, Standard Error, Standard Deviation are used as descriptive statistics to describe and summarize the data. Similarly, correlation matrix is used to find the correlation between the independent and dependent variables. Lastly, multivariate regression analyses are used on the two econometric models. The above statistical tools used in this study to analyze the data findings are mentioned in the following sub sections:

3.5.1 Mean

Mean is the arithmetic average of range of values or quantities computed by dividing the total of all values by the number of values. It refers to the average that is used to derive the central tendency. It is determined by adding all the data points in a population and then dividing the total number of points. In this study, mean is calculated to find out the average of all responses given by the responses regarding to the different Variables in Likert scale question. Mean values of the responses in Likert scale question is calculated on all samples.

$$\text{Mean} = \frac{\sum fx}{N}$$

Where, X=Value of responses of each independent or dependent variable

N= Number of statements

3.5.2 Median

Median is the middle number in a sorted list of numbers. Median is the number separating the higher half of a data sample, population, or a probably distribution, from the lower half. To determine the median value in a sequence of numbers, the numbers must first be arranged in value order from lowest to highest. The basic advantage of the median over the mean is describing data is that is resilient to extremely large or small values and may be a better descriptor of a typical outcome in this study median is calculated to find out the mid value of the responses provided by the respondents in Likert scale question, which is calculated on whole sample. The formula for the median is as follow :

$$\text{Median (Md)} = \frac{(N + 1)}{2} \text{th term}$$

Where, N= Number of statements

3.5.3 Mode

The mode is a statistical term that refers to the most frequently occurring number found in a set of numbers. It is the value that occurs most often in a set of data. The mode is found by collecting and organizing data in order to count the frequency of each result. The result with the highest number of occurrences is the mode of the set. If no number is repeated, then there is no mode for the list. This happens when two or more elements occur with equal frequency in the data set. This mode is a way of expressing in single number, important information about a random variable or a population. In this study, mode is calculated to find out the most repeated responses in Likert scale question and it is calculated on the responses of whole sample.

3.5.4 Standard deviation

Standard deviation is the measure of dispersion, that is used to quantify the amount of variation or dispersion of a set of data values. It can be defined as the positive square root of variance. A useful property of the standard deviation is that, unlike the variance, it is expressed in the same units as the data. If the data points are further from the mean, there is higher deviation within the data set. Thus, the more spread out the data, the higher the standard deviation. In this study, standard deviation is calculated for the responses provided in Likert scale for all samples.

$$\sigma = \sqrt{\frac{(X - \bar{X})^2}{N}}$$

Where, X= Value of responses of each dependent or independent variable

X= Mean value of responses of each dependent or independent variable

N= Number of responses

3.5.5 Variance

Variance is a measurement of the spread between numbers in a data set. The variance measures how far each number in the set is from the mean. Variance is calculated by taking the difference between each number in the set and the mean squaring the differences and dividing the sum of the squares by the number of values in the set. In this study, variance is calculated for the responses provided in Likert scale for all samples. Variance is a statistical measure of how much a set of observation differ from each other. It is used in statistics for probability distribution since variance measures the variability from an average or mean.

3.5.6 Correlation

Correlation is a statistical tool used to measure how strong a relation is between two variables. Correlations re useful because they can indicate a predictive relationship that can be exploited in practice. Degree and type of relationship between any two or more variables vary together over a period. Correlation value falls between -1 to +1. Values

close to +1 indicates a high – degree of positive correlation, and values close to -1 indicate a high – degree of negative correlation. In this study, correlation is calculated for the respond provided in Likert scale to find the degree of relation between independent and dependent variables for all sample

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

Where, n= Number of responses

x = Value of independent variable

y = Value of dependent variable.

3.5.7 Regression

Regression is a statistical measure that attempts to determine the strength of the relationship between one dependent variable and one or more independent variables. It includes many techniques for modeling and analyzing several variable to understand the relationships between variables. In this study, regression is calculated for the responses provided in Likert scale to find out direction of relationship between independent variables and dependent variable for all samples. The econometric models are explained through ROA and ROE. The models are explained below.

$$Y_{ROA} = f(\text{CAMEL}) \dots\dots\dots (A)$$

$$\text{OR, } Y_{ROA} = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + e \dots\dots\dots (i)$$

Similarly,

$$Y_{ROE} = f(\text{CAMEL}) \dots\dots\dots (B)$$

$$\text{OR, } Y_{ROE} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e \dots\dots\dots (ii)$$

Where, X_1 = Capital Adequacy Ratio (CAR)

X_2 = Non-Performing Loan to Total Loan (NPL/TL) ratio

X_3 = Total Advances to Total Deposits (TA/TD) ratio

X_4 = Interest Income to Total Income (II/TI) ratio

X_5 = Liquid Assets to Total Assets (LA/TA) ratio

α_1 : Coefficient of capital adequacy with ROA.

α_2 : Coefficient of assets quality with ROA.

α_3 : Coefficient of management efficiency with ROA.

α_4 : Coefficient of earning quality with ROA.

α_5 : Coefficient of liquidity with ROA.

β_1 : Coefficient of capital adequacy with ROE.

β_2 : Coefficient of asset quality with ROE.

β_3 : Coefficient of management efficiency with ROE.

β_4 : Coefficient of earning quality with ROE.

β_5 : Coefficient of liquidity with ROE.

β_0 : Regression constant with ROE of selected commercial banks.

α_0 : Regression constant with ROA of selected commercial banks.

e: Stochastic Term

3.6. Limitations of the study

The scope of the study is limited to commercial banks established in Nepal. The study has taken in to account the performance of the banks period ranging 2010 to 2017. As a result, it includes the few Government commercial banks, Joint venture commercial banks and Private commercial banks. Due to confidentiality of banking industry

information the researcher found it fairly tough to access certain types of materials, like off balance sheet items and non-performing loans data, which would limit the research work. In addition, the unavailability of data related to the measurement of sixth factor of CAMEL, Sensitivity to the market researcher couldn't include in this study.

To conclude some of the limitations of the study are:

- Various macroeconomic variables like inflation and interest rate also influence the profitability of the banks, but these factors are not considered by this research. Similarly, other factors affecting profitability are not considered. Only five ratios under CAMEL approach are considered by this research.
- The study is limited to sample of seven selected banks only.
- The study is done on the basis of ratios calculated from the annual financial statements made by the banks.
- Time and resource constraints.
- A time span of only eight years is considered for collection of data.

CHAPTER IV

DATA PRESENTATION & ANALYSIS

The purpose of this section is to provide the empirical results of relationship between selected bank variables and performance measured by return on assets and return on equity. The analysis consists of: (i) Descriptive Analysis (ii) Correlation analysis (iii) Result of regression equation to test the relationship between ROA and ROE with selected bank variables.

Table 4.1

Structure and pattern of capital adequate ratio in selected banks

The sample includes 7 Banks and covers the period between 2010 and 2017. The Capital adequate is defined as the ratio between Tier1 and risk weighted exposure. The table presents mean, standard deviation and coefficient of variance of capital adequate of each bank for whole year.

Banks/Yrs	2017	2016	2015	2014	2013	2012	2011	2010	Mean	STD	CV
HBL	12.15	10.84	11.14	11.23	11.55	11.02	10.68	10.72	11.17	0.46	0.21
NIBL	13.02	14.92	11.9	11.27	11.49	11.1	10.91	10.55	11.90	1.34	1.80
SBI	15.71	13.49	14.03	13.28	12.39	11.21	11.52	12.25	12.99	1.37	1.88
EBL	14.69	12.66	13.33	11.31	11.59	11.02	10.43	10.77	11.98	1.37	1.88
NBI	14.47	10.20	7.49	4.55	(0.59)	(5.82)	(10.15)	(11.13)	1.13	8.95	80.15
LBL	13.58	11.15	10.81	11.91	12.23	11.02	11.63	13.71	12.01	1.04	1.09
RBB	10.39	10.45	10.16	4.62	2.94	(9.77)	(22.28)	(29.46)	(2.87)	14.77	218.03
Mean	13.43	11.96	11.27	9.74	8.80	5.68	3.25	2.49	8.33	-	-
STD	1.64	1.64	2.00	3.33	4.92	8.59	12.74	15.25	-	-	-
CV	2.71	2.70	4.00	11.06	24.25	73.78	162.20	232.67	-	-	-

The *Table 4.1* depicts bank & year level mean, standard deviation & coefficient of variation values of capital adequate which measured the ratio between *Tier1 and risk weighted exposure* at the beginning of the year. From this table it is observed that the mean value of capital adequate is 8.33 for the whole sample, whereas bank level, NepalSBI Bank has the greatest mean 12.99. And RastriyaBanijay Bank has the Negative mean ie-2.87.

The highest variability in capital adequate (Tier1 and risk weighted exposure) is observed for RastriyaBanijya Bank (Government Commercial Bank) with coefficient of variation of 218.03 and least variability is observed for Himalayan Bank Limited (0.21) among all the banks under study. The highest volatility in capital adequate is observed in the year 2010 with the coefficient of variation of 232.67 and the year 2016 with the coefficient of variance 2.70 is observed to be the least variability in capital adequate. The highest capital adequate is observed Himalayan Bank Limited in the year 2017, 2013, 2014 where as in the year 2016 the highest capital adequate is observed for Nepal Investment Bank. The highest capital adequate in the year 2017 is observed for the SBI & EBL. The Lowest capital adequately is observed for NBI in the year 2013, for LBL in the year 2015 for RBB in the year 2012 ie -9.77 during the entire study period.

Table 4.2

Structure and pattern of asset quality ratio in selected banks

The sample includes 7 banks and covers the period between 2010 and 2017. The Asset Quality is defined as the ratio between Non performing credit to total credit. The table presents mean, standard deviation and Coefficient of variation of asset quality of each bank for the whole study period and all 7 banks in each year

Bank/Yrs	2017	2016	2015	2014	2013	2012	2011	2010	Mean	STD	CV
HBL	0.85	1.23	3.22	1.96	2.89	2.09	4.22	3.52	2.50	1.09	1.18
NIBL	0.83	0.68	1.25	1.77	1.91	3.32	0.94	0.67	1.42	0.84	0.71
SBI	0.1	0.14	0.19	0.26	0.37	0.54	1.10	1.48	0.52	0.47	0.22
EBL	0.25	0.38	0.66	0.97	0.62	0.84	0.34	0.16	0.53	0.27	0.07
NBL	3.32	3.11	3.98	5.12	5.24	5.58	5.75	4.87	4.62	0.95	0.91
LBL	0.93	0.80	1.30	1.15	1.51	0.62	0.90	0.12	0.92	0.40	0.16
RBB	3.77	4.25	5.35	6.38	5.32	7.27	10.91	9.81	6.63	2.40	5.76
Mean	1.44	1.51	2.28	2.52	2.55	2.89	3.45	2.95	2.45	-	-
STD	1.37	1.44	1.78	2.14	1.89	2.45	3.58	3.26	-	-	-
CV	1.88	2.07	3.17	4.56	3.57	6.02	12.79	10.60	-	-	-

The Table 4.2 depicts bank & year level mean, standard deviation & coefficient of variation values of asset quality which measured the ratio between non performing credit & total credit at the beginning of the year. From this table it is observed that the mean value of asset quality is 2.29 for the whole sample, whereas bank level, Rastriya Banijay

Bank and Nepal Bank Limited has the greatest asset quality with mean asset quality of 5.54&4.62 respectively. And Nepal SBI Bank has the lowest mean asset quality of 0.52.

The highest variability in asset quality (ratio of nonperforming credit to total credit) is observed for Himalayan Bank Limited (Joint Venture Commercial Bank) with coefficient of variation of 1.18 and least variability is observed for Everest Bank Limited (0.07) among all the banks under study. The highest volatility in asset quality is observed in the year 2011 with the coefficient of variation of 5.93 and the year 2016 with the coefficient of variance 1.82 is observed to be the least variability in asset quality.

The highest asset quality is observed Himalayan Bank Limited in the year 2011, 2010, 2015 where as in the year 2012 the highest asset quality is observed for Nepal Investment Bank. The highest asset quality in the year 2010, and 2014 are observed for the SBI & EBL respectively. The Lowest capital adequately is observed for NBI in the year 2016, for LBL in the year 2010, 2012, 2016 and 2017 for RBB in the year 2016 during the entire study period.

The *Table 4.3* depicts bank & year level mean, standard deviation & coefficient of variation values of management efficiency which measured the ratio between total credits to deposit at the beginning of the year. From this table it is observed that the mean value of management efficiency is 70.48 for the whole sample, whereas bank level, Nepal Investment Bank & Laxmi Bank Limited has the greatest management efficiency with mean management efficiency of 80.41 & 78.63 respectively. And Rastriya Banijay Bank has the lowest mean asset quality of 55.91.

The highest variability in management efficiency (total credit to deposit) is observed for Nepal SBI Bank (Joint Venture Commercial Bank) with coefficient of variation of 149.22 and least variability is observed for Everest Bank Limited (0.07) among all the banks under study. The highest volatility in management efficiency is observed in the year 2011 with the coefficient of variation of 208.94 and the year 2016 with the coefficient of variance 1.82 is observed to be the least variability in asset quality

Table 4.3***Structure and pattern of management efficiency ratio in selected banks***

The sample includes 7 Banks and covers the period between 2010 and 2017. The Management Efficiency is defined as the ratio between total credit to deposit . The table presents mean, standard deviation and Coefficient of variation of management efficiency of each bank for the whole study period and all 7 banks in each year.

Co/Yrs	2017	2016	2015	2014	2013	2012	2011	2010	Mean	STD	CV
HBL	83.59	79.12	75.37	71.82	77.36	75.36	80.57	77.43	77.58	3.36	11.31
NIBL	84.90	80.10	74.70	72.40	76.40	75.30	83.50	81.70	78.63	4.26	18.12
SBI	78.07	72.90	78.39	65.54	49.55	49.62	51.20	51.48	62.09	12.22	149.22
EBL	82.32	73.52	66.63	78.01	76.57	73.22	76.98	76.24	75.44	4.25	18.06
NBI	79.17	71.05	68.45	59.45	60.10	52.98	57.05	58.42	63.33	8.16	66.61
LBL	88.90	83.81	78.91	75.50	77.43	73.13	84.10	81.49	80.41	4.83	23.33
RBB	69.30	58.46	61.05	56.73	53.84	46.08	49.84	52.01	55.91	6.76	45.73
Mean	80.89	74.14	71.93	68.49	67.32	63.67	69.03	68.40	70.48	-	-
STD	5.79	7.66	6.19	7.51	11.47	12.38	14.45	12.79	-	-	-
CV	33.54	58.74	38.36	56.41	131.52	153.38	208.94	163.68	-	-	-

The highest asset quality is observed Himalayan Bank Limited in the year 2011, 2010, 2015 where as in the year 2012 the highest asset quality is observed for Nepal Investment Bank. The highest asset quality in the year 2010, and 2014 are observed for the SBI & EBL respectively. The Lowest capital adequately is observed for NBI in the year 2016, for LBL in the year 2010, 2012, 2016 and 2017 for RBB in the year 2016 during the entire study period.

The *Table 4.4* depicts bank & year level mean, standard deviation & Coefficient of variation values of earning quality which measured the ratio between total interest income to net income. From this table it is observed that the mean value of earning quality is 2.03 for the whole sample, whereas bank level, Laxmi Bank Limited has the greatest earning quality with mean earning quality of 2.82 and Nepal Bank Limited has the lowest mean earning quality of 1.26.

Table 4.4***Structure and pattern of earning quality ratio in selected banks***

The sample includes 7 Banks and covers the period between 2010 and 2017. The Earning Quality is defined as the ratio between total interest income to net income . The table presents mean, standard deviation and coefficient of variation of earning quality of each bank for the whole study period and all 7 banks in each year.

Banks/Yrs.	2017	2016	2015	2014	2013	2012	2011	2010	Mean	STD	CV
HBL	1.84	1.45	1.73	1.90	1.84	2.48	2.26	1.97	1.93	0.30	0.09
NIBL	1.93	1.73	1.94	1.94	1.89	2.76	2.66	2.22	2.13	0.36	0.13
SBI	2.03	1.65	1.87	2.28	2.53	3.77	3.08	2.75	2.50	0.65	0.43
EBL	1.81	1.57	1.74	1.77	1.79	2.38	2.41	2.03	1.94	0.29	0.08
NBI	1.30	1.38	1.55	1.77	1.88	2.19	-	-	1.26	0.77	0.60
LBL	2.83	2.35	2.56	2.96	2.54	3.50	3.06	2.74	2.82	0.34	0.11
RBB	1.27	1.34	1.42	1.57	1.75	2.30	1.94	1.49	1.64	0.32	0.10
Mean	1.86	1.64	1.83	2.03	2.03	2.77	2.20	1.89	2.03	-	-
STD	0.48	0.32	0.34	0.43	0.32	0.58	0.98	0.87	-	-	-
CV	0.23	0.10	0.12	0.19	0.10	0.33	0.95	0.76	-	-	-

The highest variability in earning quality (ratio of total interest income to net income) is observed for Nepal Bank Limited (Government Commercial Bank) with coefficient of variation of 0.60 and least variability is observed for Himalayan Bank Limited (0.09) among all the banks under study . The highest volatility in earning quality is observed in the year 2011 with the coefficient of variation of 0.95 and the year 2013 & 2016 with the coefficient of variance 0.10 is observed to be the least variability in earning quality.

The *Table 4.5* depicts bank & year level mean, standard deviation & coefficient of variation values of liquidity which measured the ratio between liquid assets to total assets. From this table it is observed that the mean value of liquidity is 0.29 for the whole sample, whereas bank level, Himalayan Bank Limited has the greatest liquidity mean of 1.20 and Nepal Bank Limited has the lowest mean Liquidity of 0.08

The highest variability in liquidity (ratio total liquid to total assets)is observed for Himalayan Bank Limited(Joint Venture Commercial Bank) with coefficient of variation of 2.95 and least variability is observed for Nepal Investment Bank Limited (0.02)

Table 4.5

Structure and pattern of liquidity ratio in selected banks

The sample includes 7 Banks and covers the period between 2010 and 2017. The Liquidity is defined as the ratio between total total interest incomes to net income . The table presents mean, standard deviation and coefficient of variation of liquidity of each bank for the whole study period and all 7 banks in each year.

Banks/Yrs	2,017	2,016	2,015	2,014	2,013	2,012	2,011	2,010	Mean	STD	CV
HBL	0.08	0.09	0.11	0.08	0.09	0.09	0.08	0.10	0.09	0.01	0.00
NIBL	0.12	0.10	0.14	0.20	0.18	0.18	0.14	0.12	0.15	0.03	0.00
SBI	0.13	0.13	0.14	0.11	0.12	0.10	0.11	0.09	0.12	0.02	0.00
EBL	0.18	0.20	0.25	0.19	0.17	0.19	0.13	0.19	0.19	0.03	0.00
NBI	0.17	0.20	0.10	0.09	0.20	0.24	-	-	0.13	0.09	0.01
LBL	0.09	0.10	0.12	0.17	0.13	0.20	0.13	0.13	0.13	0.03	0.00
RBB	0.12	0.16	0.16	0.20	0.15	0.18	0.08	0.13	0.15	0.03	0.00
Mean	0.13	0.14	0.15	0.15	0.15	0.17	0.10	0.11	0.14		
STD	0.03	0.04	0.05	0.05	0.04	0.05	0.04	0.05			
CV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

Among all the banks under study. The highest volatility in liquidity is observed in the year 2011 with the coefficient of variation of 9.63 and the year 2017, 2016, 2015, and 2014, with the coefficient of variance is 0.00.

The highest liquidity is observed Himalayan Bank Limited in the year 2012 where as in the year 2015, 2014 the highest liquidity is observed for Nepal Investment Bank Limited. The highest liquidity in the year 2012 is observed for the SBI & EBL .The lowest capital adequately is observed for NBI in the year 2012, for LBL in the year 2010 and 2017 for RBB in the year 2016 during the entire study period.

Table 4.6***Structure and pattern of ROA ratio in selected banks***

The sample includes 7 Banks and covers the period between 2010 and 2017. The Management Efficiency is defined as the ratio total net income to total assets. The table presents mean, standard deviation coefficient of variation of return on assets of each bank for the whole study period and all 7 banks in each year.

Banks/Yrs	2017	2016	2015	2014	2013	2012	2011	2010	Mean	STD	CV
HBL	2.03	1.94	1.34	1.30	1.54	1.76	1.91	1.19	1.63	0.31	0.09
NIBL	2.06	1.97	1.88	2.25	2.62	1.58	2.02	2.21	2.07	0.28	0.08
SBI	1.53	1.70	1.80	1.51	1.91	0.83	1.01	1.03	1.42	0.38	0.14
EBL	1.72	1.61	1.85	2.25	2.39	2.11	2.10	2.09	2.02	0.25	0.06
NBI	2.78	2.79	0.55	0.92	1.07	0.30	-	-	1.05	1.06	1.13
LBL	1.61	1.35	1.04	1.47	1.50	1.50	1.76	1.66	1.49	0.21	0.04
RBB	1.60	1.42	3.22	1.47	1.26	1.23	2.20	2.85	1.91	0.72	0.51
Mean	1.90	1.83	1.67	1.60	1.76	1.33	1.57	1.58	1.65		
STD	0.41	0.45	0.78	0.45	0.53	0.56	0.74	0.86			
CV	0.17	0.20	0.61	0.21	0.29	0.32	0.54	0.75			

The *Table 4.6* depicts bank & year level mean, standard deviation & coefficient of variation values of return on assets which measured the ratio between total net incomes to total assets. From this table it is observed that the mean value of return on assets is 1.65 for the whole sample, whereas bank level, Nepal Investment Bank has the greatest mean of 2.07 and Nepal Bank Limited has the lowest mean Liquidity of 1.05.

The highest variability in return on assets (total net income to total assets) is observed for Nepal Bank Limited (Government Commercial Bank) with coefficient of variation of 1.13 and least variability is observed for Laxmi Bank Limited (0.04) among all the banks under study. The highest volatility in return on assets is observed in the year 2010 with the coefficient of variation of 0.75 and the year 2017 is observed as the lowest, with the coefficient of variance is 0.17.

Table 4.7***Structure and pattern of ROE ratio in selected banks***

The sample includes 7 Banks and covers the period between 2010 and 2017. The Liquidity

is defined as the ratio between net income to total equity. The table presents mean, standard deviation and coefficient of variation of return on equity of each bank for the whole study period and all 7 banks in each year.

Banks/Yrs	2017	2016	2015	2014	2013	2012	2011	2010	Mean	STD	CV
HBL	0.19	0.22	0.16	0.16	0.18	0.21	0.22	0.15	0.18	0.03	0.00
NIBL	0.17	0.16	0.20	0.24	0.27	0.17	0.23	0.28	0.21	0.04	0.00
SBI	0.15	0.19	0.19	0.20	0.20	0.15	0.16	0.16	0.18	0.02	0.00
EBL	0.17	0.20	0.23	0.28	0.30	0.26	0.30	0.30	0.26	0.05	0.00
NBI	0.93	0.93	1.43	1.80	1.71	1.26	-	-	1.01	0.65	0.43
LBL	0.10	0.12	0.10	0.15	0.16	0.16	0.18	0.17	0.14	0.03	0.00
RBB	0.26	0.27	0.70	0.77	1.03	(0.37)	(0.20)	(0.20)	0.28	0.48	0.23
Mean	0.28	0.30	0.43	0.52	0.55	0.26	0.13	0.12	0.32	-	-
STD	0.27	0.26	0.45	0.56	0.55	0.45	0.16	0.16	-	-	-
CV	0.07	0.07	0.20	0.31	0.30	0.20	0.03	0.03	-	-	-

The *Table 4.7* exhibits bank & year level mean, standard deviation & coefficient of variation values of return on equity which measured the ratio between total interest incomes to total equity. ROE is considered a measure of how effectively management is using assets to create profits. From this table it is observed that the mean value of return on equity is 0.32 for the whole sample, whereas bank level, Nepal Bank Limited has the greatest return on equity with mean return on equity of 1.01 and Laxmi Bank Limited has the lowest mean return on equity of 0.14.

The highest variability in return on equity(total interest incomes to total equity)is observed for Nepal Bank Limited (Government Commercial Bank) with coefficient of variation of 0.43 and other banks except Rastriya banijya Bank has the coefficient of variance as a zero under study . The highest volatility in earning quality is observed in the year 2014 with the coefficient of variation of 0.30 and the year 2010& 2011 with the coefficient of variance 0.03 is observed to be the least variability in return in equity.

4.1 Descriptive Statistics

Descriptive statistics are used to present quantitative descriptions in a manageable form. It simply help researcher to simplify large amount so data in a sensible way to reduces lots of data into a simple summary

Table 4.8

Table summary of descriptive statistics

The sample includes 7 banks and covers the period of 8 years from 2010 and 2017. Descriptive statistics are used to present quantitative descriptions in a manageable form. It simply help researcher to simplify large amount so data in a sensible way to reduces lots of data into a simple summary. The table presents mean, median, standard deviation range, minimum, maximum of each banks for the whole study period and all 7 banks in each year

Statistics \ Variables	CAR	AQR	MER	EQR	LR	ROA	ROE
Mean	9.30	2.19	70.48	2.28	0.13	1.70	0.13
Median	11.15	1.13	75.00	1.89	0.13	1.64	0.19
Std. Deviation	5.02	2.54	11.48	1.42	0.05	0.58	0.55
Range	15.71	10.45	42.82	7.18	0.25	2.92	4.64
Minimum	0.00	0.00	46.08	0.00	0.00	0.30	3.61
Maximum	15.71	10.45	88.90	7.18	0.25	3.22	1.03

The *Table 4.8* depicts descriptive statistics (mean, median, standard deviation. range, maximum, minimum) values of the variables of all sample under study for the period of 8 years from 2010-2017. It is observed that the mean value of management efficiency is 70.48, which ranges from 46.08 to 88.90 and median are 75.00 with standard deviation of 11.48. The mean value of Liquidity is 0.13 with minimum, maximum value, median and standard deviation of 0.00, 0.25, 0.13 & 0.05 respectively. Similarly, the capital adequacy mean value is observed to be 9.30, which ranges from 0.00 to 15.71 with standard deviation 5.02. The mean value of Asset quantity is 2.19 which ranges from 0.00 to 10.45 and median is 1.13 with standard deviation 2.54. The mean value of earning quantity is 2.28; median is 1.89 which ranges from 0.00 to 7.18 with standard deviation 1.42. The minimum value is observed 0.30 and maximum value is observed 3.00 with standard deviation 0.58 and the mean value is .170 similarly median is 1.64 of return on asset. It is observed that the mean value of return of equity is 0.13 which ranges from 3.61 to 1.03 with standard deviation 0.55.

Table 4.9***Summary of descriptive statistics of joint venture, private and government commercial bank.***

The sample includes 7 banks and covers the period of 8 years from 2010 and 2017. Descriptive statistics are used to present quantitative descriptions in a manageable form. It simply help researcher to simplify large amount so data in a sensible way to reduces lots of data into a simple summary. The table presents mean, median, standard deviation range, minimum, maximum of each banks for the whole study period and all 7 banks in each year

Statistics\Variables	CAR	AQR	MER	EQR	LR	ROA	ROE
Mean	12.04	1.18	71.70	2.41	0.13	1.66	0.21
Median	11.54	0.75	75.81	1.89	0.12	1.71	0.20
Std. Deviation	1.40	1.19	10.54	1.46	0.05	0.42	0.05
Range	5.28	4.12	34.04	6.38	0.17	1.56	0.15
Minimum	10.43	0.10	49.55	0.78	0.08	0.83	0.15
Maximum	15.71	4.22	83.59	7.16	0.25	2.39	0.30
Mean	11.95	1.17	79.52	2.78	0.14	1.78	0.18
Median	11.56	0.94	79.51	2.44	0.13	1.71	0.17
Std. Deviation	1.24	0.73	4.79	1.58	0.04	0.40	0.05
Range	4.37	3.20	16.50	6.21	0.11	1.58	0.18
Minimum	10.55	0.12	72.40	0.97	0.09	1.04	0.10
Maximum	14.92	3.32	88.90	7.18	0.20	2.62	0.28
Mean	2.54	4.72	59.62	1.48	0.13	1.69	-0.02
Median	0.08	4.75	58.44	1.53	0.14	1.45	0.17
Std. Deviation	4.41	3.39	8.64	0.75	0.07	0.92	1.03
Range	14.47	10.45	33.09	2.76	0.24	2.92	4.64
Minimum	0.00	0.00	46.08	0.00	0.00	0.30	-3.61
Maximum	14.47	10.45	79.17	2.76	0.24	3.22	1.03

The *Table 4.9* shows the descriptive statistical of Joint Venture Commercial Bank, Private Commercial Bank & Government Commercial Bank. To complete the research objective of comparing the three of the groups which performs better, we used descriptive analysis. By the above figure, the mean of ROA is greater in Private Commercial Bank like the mean of ROE is greater in Joint venture commercial bank.

Which indicated the data points are spread out over a large range of values. Looking at the CAMEL factors, the study observed that the mean of CAR of Government Commercial Bank is best than Joint Venture Commercial bank & Private Commercial Bank which considered safe and likely to meet the financial obligation . The highest mean value of CAR is 12.04 of joint venture commercial bank with maximum, minimum, median & standard deviation of 15.71, 10.43, 11.54 and 1.40 respectively. Similarly, the highest mean of AQR is 4.72 of government commercial bank which ranges from 10.45 to 0.00, with standard deviation 4.75. Likewise, under the study among three categories of banks, private commercial bank has the highest mean ie 59.62 in MER, where Management efficiency is one of the key internal factors that determine the bank profitability. It is represented by different financial ratios like total asset growth, loan growth rate and earnings growth rate. Yet, it is one of the complexes subject to capture with financial ratios. Moreover, operational efficiency in managing the operating expenses is another dimension for management quality. The performance is often expressed qualitatively through subjective evaluation of management systems, organizational discipline, control systems, quality of staffs, and others. Management Efficiency Ratio= Total Advances (Employee loan and advances, prepaid expenses)/ Total Deposits. The minimum value is observed 72.40 and maximum value is 88.90 with standard deviation 88.90. The highest mean is 2.78 of EOR from private commercial bank where EQR parameter lays importance on how a bank earns its profits. This also explains the sustainability and growth in earnings in the future. Some of the ratios considered to assess the earning ability of the banks were net income as percentage of total assets, net interest income as a percentage of total assets, ROA, ROE, pre –tax profit/ total assets, income spread to total assets, cost to income ratio, operating profit to total assets, interest income to total income and non-interest income to total income. Earning Quality Ratio= Total Interest income/ Net Income. The minimum value is observed 0.97 & maximum is 7.18 with standard deviation 1.58. The highest mean is 0.14 in LR from private commercial bank, which ranges from 0.09 to 0.20 and median is 0.13 with standard deviation 0.04. The minimum value is observed 1.04 and maximum value is observed 32.62 with standard deviation 0.40 and the mean value is 1.78 similarly median is 1.74 of return on asset. It is observed that the mean value of return of equity is

0.21 which ranges from 0.15 to 0.30 with standard deviation 0.05 from joint venture commercial bank.

4.2 Correlation analysis among the variables under study

Table 4.10

Pearson's correlation coefficients for all the sample banks

The table depicts the correlation analysis of the major variables under study. The correlation analysis is conducted for the whole sample. The sample includes 7 banks and covers the period of 8years from 2010 to 2017.

Variables		CAR	AQR	MER	EQR	LR	ROA
CAR	Pearson Correlation	1					
	Sig. (2-tailed)						
AQR	Pearson Correlation	-0.623	1				
	Sig. (2-tailed)	0					
MER	Pearson Correlation	0.678**	-.271*	1			
	Sig. (2-tailed)	0	0.043				
EQR	Pearson Correlation	0.351**	-0.328	0.360**	1		
	Sig. (2-tailed)	0.009	0.016	0.008			
LR	Pearson Correlation	-0.131	-0.105	-0.13	0.134	1	
	Sig. (2-tailed)	0.344	0.449	0.348	0.333		
ROA	Pearson Correlation	0.099	-0.07	0.321*	-0.159	-0.071	1
	Sig. (2-tailed)	0.477	0.613	0.018	0.251	0.608	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed)

The *Table 4.10* characterizes the correlation analysis of the variables which is conducted for the whole sample. As shown in the table , the correlation between CAR with AQR ,MER, EQR,ROA are 0.623 , 0.678 ,0.351,0.10 respectively are observed to be positive which mean as CAR increases AQR ,MER, EQR,ROA also increases whereas the correlation between CAR with LR is -0.13, which is negative, which means CAR increase LR decrease or vice versa. The correlation between AQR with MER and EQR are 0.271 and 0.328 which is positive .whereas the correlation between AQR with LR & ROA are -0.11and 0.07, which is negative. It shows AQR increases LR & ROA decreases. The correlation between MER with EQR and ROA are 0.360 and 0.321 which is positive, which means MER increases EQR & ROA also Increases. Similarly, the

correlation between MER with LR is 0.13 which is negative, which means MER Increases LR decreases. Likewise the correlation between EQR with LR & ROA is 0.13&0.16 which is positive which means as EQR Increase the LR & ROA also Increases under this study. The correlation between CAR & AQR , CAR & MER ,CAR & EQR ,AQR & MER , AQR & EQR ,MER & EQR are significant because there value is less than 0.05.which means that increase or decrease in one variable do significantly relate to increase or decrease in second variable .

Table 4.11

Pearson’s correlation coefficients for the joint venture commercial bank

The table depicts the correlation analysis of the major variables under study. The correlation analysis is conducted for the banks classified as per Joint venture commercial bank .This Table depicts the correlation analysis of Joint venture commercial bank. The sample includes 3 banks and covers the period of 8 years from 2010 to 2017.

Variables		CAR	AQR	MER	EQR	LR	ROA
CAR	Pearson Correlation	1					
	Sig. (2-tailed)						
AQR	Pearson Correlation	-.522**	1				
	Sig. (2-tailed)	(0.009)					
MER	Pearson Correlation	0.032	0.186	1			
	Sig. (2-tailed)	(0.883)	(0.384)				
EQR	Pearson Correlation	0.828**	-0.421	0.318	1		
	Sig. (2-tailed)	(1.000)	(0.04)	(0.13)			
LR	Pearson Correlation	-0.06	-.476*	-0.036	-0.211	1	
	Sig. (2-tailed)	(0.78)	(0.019)	(0.866)	(0.323)		
ROA	Pearson Correlation	-0.087	-0.194	0.710**	0.078	0.464*	1
	Sig. (2-tailed)	(0.686)	(0.363)	(1)	(0.716)	(0.022)	

The *Table 4.11* characterizes the correlation analysis of the variables under the study which is conducted for the joint venture commercial bank sample only. As shown in the table, in the case of joint venture banks the correlation for the sample between ROA with CAR & AQR is observed to be negative & insignificant with the correlation coefficient of 0.087 & 0.194 which means that there is weak relationship among the variables interring that changes in one variables are correlated with the changes in the second variables Similarly sig (2 Tailed) shown in the table which is more than the significance level 0.05 concluding that there is no statistically significant correlation between return

on assets and independent variables CAR & AOR . Likewise,the relationship between ROA with MER & LR is positive & significant with the correlation coefficient of 0.710 & 0.464 which means MER & LR influence the joint venture bank in a positive way. Similarly, the relationship between ROA with EQR is positive and insignificant with correlation coefficient of 0.078 which means that there is strong relationship with EQR but no statically significant correlation with ROA &EQR.

Table 4.12

Pearson’s correlation coefficients for the private commercial bank

The table depicts the correlation analysis of the major variables under study. The correlation analysis is conducted for the banks classified as per Private commercial bank .This Table depicts the correlation analysis of Private Commercial Bank. The sample includes 3 banks and covers the period of 8 years from 2010 to 2017.

Variables		CAR	AQR	MER	EQR	LR	ROA
CAR	Pearson Correlation	1					
	Sig. (2-tailed)						
AQR	Pearson Correlation	-0.357	1				
	Sig. (2-tailed)	(0.175)					
MER	Pearson Correlation	0.341	-0.467	1			
	Sig. (2-tailed)	(0.196)	(0.068)				
EQR	Pearson Correlation	0.364	-0.077	0.486	1		
	Sig. (2-tailed)	(0.166)	(0.776)	(0.056)			
LR	Pearson Correlation	-0.203	.510*	-.525*	0.152	1	
	Sig. (2-tailed)	(0.45)	(0.044)	(0.037)	(0.574)		
ROA	Pearson Correlation	0.05	0.074	-0.063	-0.368	0.087	1
	Sig. (2-tailed)	(0.853)	(0.784)	(0.817)	(0.16)	(0.75)	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The *Table 4.12* characterizes the correlation analysis of the variables under the study which is conducted for the private commercial Bank. As shown in the table , the correlation for sample between ROA with CAR ,AQR and LR is observed to be positive and insignificant with the correlation coefficient of 0.05, 0.074,0.087 respectively Similarly, the relationship between ROA with MER & EQR is negative & insignificant with the correlation coefficient -0.063 and 0.368 respectively which means the result reveal that corresponding P-value shows there is strong relationship among the variables inferring that changes in one variable are correlated with changes in the second variable.

As of positive sign, it concludes that as one variables increases in value, the second variables increase in value. Similarly The result reveal that the corresponding p-value negative means there is weak relationship among the variables inferring that changes in one variable are correlated with changes in the second variable. As of negative sign, it concludes that as one variable increases in value, the second variables decreases in value. The sig (2 Tailed) shown in the table which is more that the significance level 0.05 concluding that there is no statistically significant correlation between return on assets and independent variables This means, increase or decrease in one variable do not significantly related to increase or decrease in second variable.

Table 4.13

Pearson’s correlation coefficients for the government commercial bank

The table depicts the correlation analysis of the major variables under study. The correlation analysis is conducted for the banks classified as per Government commercial bank .This Table depicts the correlation analysis of Government Commercial Bank. The sample includes 3 banks and covers the period of 8 years from 2010 to 2017.

Variables		CAR	AQR	MER	EQR	LR	ROA
CAR	Pearson Correlation	1					
	Sig. (2-tailed)						
AQR	Pearson Correlation	-0.131	1				
	Sig. (2-tailed)	(0.628)					
MER	Pearson Correlation	0.817**	0.346	1			
	Sig. (2-tailed)	(1)	(0.189)				
EQR	Pearson Correlation	-0.545*	-0.149	-0.576*	1		
	Sig. (2-tailed)	(0.044)	(0.611)	(0.031)			
LR	Pearson Correlation	-0.467	-0.026	-0.451	0.895**	1	
	Sig. (2-tailed)	(0.092)	(0.93)	(0.106)	1		
ROA	Pearson Correlation	0.251	-0.068	0.271	-0.568	-0.413	1
	Sig. (2-tailed)	(0.388)	(0.819)	(0.349)	(0.034)	(0.142)	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The *Table 4.13* characterizes the correlation analysis of the variables which is conducted for the two government commercial bank (Nepal Bank Limited, Rastriya Banijay Bank) As shown in the table, The correlation for the sample between ROA with CAR, MER is observed to be positive and insignificant with the correlation coefficient of 0.251 & 0.271

which means that there is strong relationship with the variables but no statistically significant correlation between ROA with CAR and MER. This means increase or decrease in one variable do not significantly related to increase or decrease in second variables. Similarly, the relationship between ROA with AQR, EQR and LR is negative and insignificant with correlation coefficient of -0.068, -0.0568 and -0.413 respectively which means the result reveal that there is weak relationship and no statically significant correlation between ROA and independent variables. This means increase or decrease in one variable do not significantly related to increase or decrease in second variables.

Table 4.14

Pearson's correlation coefficients for all the sample banks

The table depicts the correlation analysis of the major variables under study. The correlation analysis is conducted for the whole sample. The sample includes 3 banks and covers the period of 8 years from 2010 to 2017.

Variables		CAR	AQR	MER	EQR	LR	ROE
CAR	Pearson Correlation	1					
	Sig. (2-tailed)						
AQR	Pearson Correlation	-0.623	1				
	Sig. (2-tailed)	(1)					
MER	Pearson Correlation	0.678**	-.271*	1			
	Sig. (2-tailed)	(1)	(0.043)				
EQR	Pearson Correlation	0.351**	-0.328	0.360**	1		
	Sig. (2-tailed)	(0.009)	(0.016)	(0.008)			
LR	Pearson Correlation	-0.131	-0.105	-0.13	0.134	1	
	Sig. (2-tailed)	(0.344)	(0.449)	(0.348)	(0.333)		
ROE	Pearson Correlation	0.239	-0.046	0.15	-0.018	0.151	1
	Sig. (2-tailed)	(0.076)	(0.734)	(0.27)	(0.9)	(0.277)	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The *Table 4.14* characterizes the correlation analysis of the variables under the study which is conducted for the whole sample. as shown in the table , the correlation for all sample between ROE with CAR , MER and LR is observed to be positive and insignificant with the correlation coefficient of 0.239, 0.15 and 0.151. which means there is positive and strong relationship among the related variables. The sig (2 tailed) shown in the table which is more than the significance level 0.05 concluding that there is no

statistically significant correlation between ROE and the related variables. Likewise, it can be seen that there is negative and insignificant relationship between AQR and EQR with correlation of coefficient of -0.046 and -0.018 which means that corresponding p value negative means there is weak relationship among the variables inferring that changes in one variable are correlated with the changes in the second .similarly there is no statically significant correlation between ROE with AQR & EQR.

Table 4.15

Pearson’s correlation coefficients for the joint venture commercial bank

The table depicts the correlation analysis of the major variables under study. The correlation analysis is conducted for the banks classified as per Joint venture commercial bank .This Table depicts the correlation analysis of Joint venture commercial bank. The sample includes 3 banks and covers the period of 8 years from 2010 to 2017.

Variables		CAR	AQR	MER	EQR	LR	ROE
CAR	Pearson Correlation	1					
	Sig. (2-tailed)						
AQR	Pearson Correlation	-0.522	1				
	Sig. (2-tailed)	(0.009)					
MER	Pearson Correlation	0.032	0.186	1			
	Sig. (2-tailed)	(0.883)	(0.384)				
EQR	Pearson Correlation	0.828**	-0.421	0.318	1		
	Sig. (2-tailed)	(1)	(0.04)	(0.13)			
LR	Pearson Correlation	-0.06	-0.476	-0.036	-0.211	1	
	Sig. (2-tailed)	(0.78)	(0.019)	(0.866)	(0.323)		
ROE	Pearson Correlation	-0.361	-0.265	0.301	-0.327	0.654**	1
	Sig. (2-tailed)	(0.083)	(0.211)	(0.153)	(0.119)	(0.001)	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The *Table 4.15* characterizes the correlation analysis of the variables under the study which is conducted for the joint venture commercial bank sample only. As shown in the above table,the correlation for the sample between ROA with CAR, AQR and EQR is found to be negative and insignificant relationship with correlation coefficient of .0.361,-0.265and 0.327 which means there is weak relationship among the above related variables and no staticallysignificant correlation between ROE and above related independent variables .Similarly, there is positive and insignificant relationship between MER with correlation coefficient of 0.301. Likewise it can be seen that there is positive

and sufficient at 99 percent confident level with correlation coefficient of 0.654, which means there is strong relationship and statically significant correlation between ROA and LR independent variable. This means, the change in one variable are correlated with change in the second likewise increase or decrease in one variable do significantly related to increase or decrease in second variables.

Table 4.16

Pearson’s correlation coefficients for the private commercial bank

The table depicts the correlation analysis of the major variables under study. The correlation analysis is conducted for the banks classified as per Private commercial bank .This Table depicts the correlation analysis of Private Commercial Bank. The sample includes 3 banks and covers the period of 8 years from 2010 to 2017

Variables		CAR	AQR	MER	EQR	LR	ROE
CAR	Pearson Correlation	1					
	Sig. (2-tailed)						
AQR	Pearson Correlation	-0.357	1				
	Sig. (2-tailed)	(0.175)					
MER	Pearson Correlation	0.341	-0.467	1			
	Sig. (2-tailed)	(0.196)	(0.068)				
EQR	Pearson Correlation	0.364	-0.077	0.486	1		
	Sig. (2-tailed)	(0.166)	(0.776)	(0.056)			
LR	Pearson Correlation	-0.203	0.510*	-0.525	0.152	1	
	Sig. (2-tailed)	(0.45)	(0.044)	(0.037)	(0.574)		
ROE	Pearson Correlation	-0.331	0.137	-0.284	-0.709	0.071	1
	Sig. (2-tailed)	(0.211)	(0.613)	(0.286)	(0.002)	(0.794)	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The *Table 4.16* exhibits the correlation analysis of the variables under the study which is conducted for the private commercial bank. As shown in the table, the correlation between ROE with CAR and MER is negative and insignificant with correlation coefficient of -0.331 and -0.284. which shows that there is weak relationship among the related variables and no statically significant relation between ROE with CAR & MER .Similarly, The correlation between ROE with AQR and LR is observed to be positive and insignificant with correlation coefficient of 0.137 and 0.071 which shows there is strong relationship among the related variables inferring that changes in one variables are correlated with changes in the second variables. Likewise, it can be seen that there is

negative and significant relation between ROE and EQR in private commercial bank sampling .As negative sign, it concludes that one variable increase in value , the second variables decrease in value . The sig (2tailed) shows in the table which is less than significance level 0.05 concludes that there is statically significant correlation between ROA and EQR.

Table 4.17

Pearson’s correlation coefficients for the government commercial bank

The table depicts the correlation analysis of the major variables under study. The correlation analysis is conducted for the banks classified as per government commercial bank .This Table depicts the correlation analysis of government Commercial Bank. The sample includes 3 banks and covers the period of 8 years from 2010 to 2017

Variables		CAR	AQR	MER	EQR	LR	ROE
CAR	Pearson Correlation	1					
	Sig. (2-tailed)						
AQR	Pearson Correlation	-0.131	1				
	Sig. (2-tailed)	(0.628)					
MER	Pearson Correlation	.817**	0.346	1			
	Sig. (2-tailed)	(1)	(0.189)				
EQR	Pearson Correlation	-0.545	-0.149	-0.576	1		
	Sig. (2-tailed)	(0.044)	(0.611)	(0.031)			
LR	Pearson Correlation	-0.467	-0.026	-0.451	0.895**	1	
	Sig. (2-tailed)	(0.092)	(0.93)	(0.106)	(1)		
ROE	Pearson Correlation	0.197	0.106	0.101	-0.153	0.175	1
	Sig. (2-tailed)	(0.465)	(0.696)	(0.709)	(0.602)	(0.551)	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The *Table 4.17* characterizes the correlation analysis of the variables under the study which is conducted for the government commercial bank sample. As shown in the table, the correlation between ROE with CAR, AQR, MER andLR is observed to be positive and insignificant with the correlation coefficient of 0.197, 0.106, 0.101 and 0.175.which means there is positive and strong relationship among the related variables. The sig (2 tailed) shown in the table which is more than the significance level 0.05 concluding that there is no statistically significant correlation between ROE and the related variables. Likewise, it can be seen that there is negative and insignificant relationship between ROE and EQR with correlation of coefficient of -.0153 which means that corresponding p

value negative shows there is weak relationship among the variables inferring that changes in one variable are correlated with the changes in the second .similarly there is no statically significant correlation between ROE with EQR.

4.3 Regression analysis

Regression analysis helps to find out the impact if independent variables on the dependent variable. The regression analysis is conducted for the whole sample. In this study, regression analysis is done for the different determining factor on CAMEL approach towards ROA & ROE.

Table 4.18

Regression analysis^a

The table presents the regression analysis of the major variables under study. The regression analysis is conducted for the banks classified under study .This Table depicts the regression analysis , ROA is used as a dependent variable The sample includes 7banks and covers the period of 8 years from 2010 to 2017

Coefficients	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	F	Sig.	Adjusted R ²
	B	Std. Error	Beta					
(Constant)	0.383	0.572		0.670	0.506			
CAR	-0.038	0.026	-0.311	1.451	0.153			
AQR	-0.053	0.039	-0.230	1.350	0.183	2.866	.024b	0.150
MER	0.030	0.009	0.592	3.296	0.002			
EQR	-0.137	0.058	-0.336	2.349	0.023			
LR	-0.161	1.515	-0.014	0.107	0.916			

a. Dependent Variable: ROA

As depicted in *Table 4.18*, ROA is used as a dependent variable and CAR, AQR, MER, EQR and LR as independent variables. After introducing all the variables under study, the impact of MER is found to be positive and significant at 99 percent confidence level. . The coefficient with 0.030 of MER shows that increase in MER cause increase in ROA. The data also reveals that the significant level is 0.002 which is less than 0.05 inferring there is a significant difference in the mean of selected bank internal variables with return on assets. The impact of CAR is found to be negative and insignificant with coefficient of-0.038. Similarly, the impact of AQR is found to be negative and insignificant with

coefficient -0.053. Likewise, the impact of EOR also, negative and insignificant with coefficient -0.137. The impact of LR also found to be negative & insignificant with the coefficient of -0.161.

The given table explains the model summary analysis of sampled banks in the study period. R² has a value of 0.150 meaning that the selected CAMEL explain only 15.00 % if changes in return on assets.

Table 4.19

Regression analysis^b

The table presents the regression analysis of the major variables under study. The regression analysis is conducted for the banks classified under study. This Table depicts the regression analysis, ROE is used as a dependent variable. The sample includes 7banks and covers the period of 8 years from 2010 to 2017

Coefficients	Unstandardized		Standardized	t	Sig.	F	Sig.	Adjusted R ²
	Coefficients		Coefficients					
	B	Std. Error	Beta					
(Constant)	0.614	0.584		1.052	0.298			
CAR	0.055	0.027	0.469	2.065	0.044			
AQR	0.048	0.040	0.217	1.205	0.234	1.541	.195 ^b	0.049
MER	0.002	0.009	-0.03s6	0.188	0.852			
EQR	0.052	0.059	-0.132	0.869	0.389			
LR	2.725	1.547	0.248	1.761	0.085			

b. Dependent Variable: ROE

As depicted in *Table 4.19*, ROE is used as a dependent variable and CAR, AQR, MER, EQR and LR as independent variables. The given table shows the output of regression analysis of selected sample bank over the research study period. The data reveals that the impact of CAR is found to be positive and significant at 99 confident level with correlation of coefficient of 0.055. which means that there is significant relationship of capital adequacy ratio and return on assets. After introducing all the variables under study, the impact of AQR is found to be positive and insignificant with coefficient of 0.048. The coefficient with 0.002 of MER shows that, the impact is found to be positive and insignificant. The impact of EQR is found to positive and insignificant with coefficient of 0.052. Similarly, the impact of LR is found to be positive and insignificant with coefficient 2.725. The given table explains the model summary analysis of sampled banks in the study period. R² has a value of 0.049 meaning that the selected CAMEL explain only 4.9 % if changes in return on equity.

CHAPTER V

SUMMARY AND CONCLUSION

5.1. Summary of major findings

The available data have been analyzed according to the need of this study. Now, to conclude the major findings of this study will be pointed out which will then be followed by suggestive framework. In the previous chapters, efforts were made to of study the relationship of selected CAMEL factors and financial performance of sampled selected Nepalese commercial banks. In addition, to know which of these either joint venture or private commercial bank did better in the sample period.

For the purpose of studying the relationship among the CAMEL factors with the performance different hypothesis were formulated and tested. The main objective of this research is to find out either joint ventures bank or private commercial banks perform better in the research study period. In addition, to know either CAMEL factors affect the performance of the commercial banks measured by ROA and ROE. The research design adopted in this study was quantitative in nature and uses annual report of selected banks and NRB supervision reports. The study used the sample period of 2010 to 2017. It is carried out by using samples to examine the mean difference analysis to test which of this private commercial bank or joint venture bank performed better and used multivariate regression analysis to know either CAMEL affect the performance of the sampled commercial banks.

Three joint venture banks, Himalayan Bank Limited, SBI Bank Limited and Everest Bank were selected, two private commercial banks, Nepal Investment Bank Limited, Laxmi Bank Limited, and two governments bank Nepal Bank Limited and Nepal RastriyaBaniija was taken into consideration as the data were available to meet the research objectives.

Furthermore, the study had used descriptive statistics to know the mean of selected sampled banks of CAMEL to find out which of these performed better in the research period. Also, the study used correlation matrix to find out the correlation and statistically

correlation among the dependent and independent variables. In addition, the researcher used to find out the performance of sample banks in the research study period to know which sampled banks perform better and rank them from highest to lowest as per the CAMEL. The researcher used hypothesis testing using p-value approach to find out whether the CAMEL had impact on the performance indicators as prescribed by the research objectives.

The major findings of the research are pointed as bellows:

- Using descriptive analysis, the study found that CAR of Joint venture commercial banks is better off than private commercial banks, while the AQR of joint venture bank is better off. Similarly, the mean of MER and LR of private commercial bank is performing better than joint venture commercial bank and the mean of EQR of joint venture commercial bank is performing better than private commercial banks.
- The result revealed that there is positive and medium relationship among the CAR and return on assets, return on equity and significant 2 tailed concluded there is statistically significant correlation among them. Secondly, there is weak relationship with return on assets, return on equity and AQR, while statistically significant correlation between return on assets, return on equity and AQR. Thirdly, there is strong relationship with return on assets and MER and medium relationship with return on equity while there is no statistically significant correlation between return on equity, return on assets and MER. Next, there is weak relationship with return on assets, and return on equity with EQR and there is no statistically significant correlation between return on assets, and return on equity with EQR. Finally, there is weak relationship of return on assets and medium relationship of return on equity with LR, while there is statistically significant correlation between return on assets and LR and there is no statistically correlation between return on equity and LR.
- The research revealed that the determinants of ROA with 0.150 R² meaning that selected CAMEL explains only 15% if changes in return on assets and there are

no auto correlation in Nepalese commercial banks an selected bank internal variables since the value is near to 2. In contrast, the determinants of ROE show 0.049 R2 explains 4.9% if changes in return on equity. By analyzing the variance inflation factor in ROA and ROE model, it can be said that all independent variables had tolerance value bigger than 0.1, this finding suggests that multicollinearity was not a problem when selected explanatory variables were used to develop the predicted model in the logistic regression analysis and to validate the evidence presented in the correlation matrix.

- Using multivariate regression analysis, the study found that there is significant relationship of CAR with return on equity. In addition, the study found there is significant relationship of MER with return on assets. In contrast, the study found there is no significant relationship of AQR, EQR and LR with return on assets and return on equity.
- Among the selective sampled banks, Nepal Bank and Nepal Raastriya Banijay lowest CAR while Himalayan Bank, Nepal Investment Bank, SBI Bank, Everest Bank & Laxmi Bank recorded highest CAR in the research study period. Nepal Bank, Raastriya Banijay Bank, Himalayan Bank recorded the better AQR while SBI Bank Everest Bank, Laxmi Bank have the worst AQR. Consecutively, Nepal Bank, Raastriya Banijya bank and SBI have lower MER while Everest Bank, Himalayan Bank, Nepal Investment Bank, Laxmi Bank has higher MER. Also, Nepal Investment Bank, SBI Bank and Laxmi Bank are the high earners in the research study period whereas Nepal Bank, Everest Bank, Himalayan Bank and Raastriya Banijya Bank recorded the lowest earners among the selected sampled banks. Finally, Himalayan Bank, Nepal Bank and Laxmi Bank recorded the lowest LR whereas the SBI, Nepal Bank, Everest Bank, Nepal Investment and Raastriya Banijay Bank recorded the highest LR.

5.2 Conclusion

With the aim to measure the best performance, find out the relationship, and examine the impact of the independent variables; capital adequacy, asset quality, management efficiency, earnings and liquidity on ROA and ROE of Nepalese Commercial banks. The descriptive statistics and quantitative research design have been applied and secondary data is used for the analysis to know the mean of selected sampled banks of CAMEL to find out which of these performed better in the research period. In this study. Three joint venture banks, Himalayan Bank Limited, SBI Bank Limited and Everest Bank were selected, five private commercial banks, Nepal Investment Bank Limited, Laxmi Bank Limited, Kumari Bank Limited, Citizen Bank Limited, and Sanima Bank Limited, and one government bank Nepal Bank Limited was taken into consideration as the data were available to meet the research objectives. In this study, data was evaluated using mean, median standard deviation, correlation and regression analysis.

From the analysis of sample data, the study concluded by using mean analysis that joint venture commercial banks shows the best performance among the other banks. Similarly Following the results that were obtained from the regression and in the light of the interpreted results, one of the result was there is a significant positive relationship between the management efficiency ratio and return on assets(dependent variable) that means the sample commercials banks managements have been successful in managing their assets & liabilities and the result encourages the sample commercials bank investors to invest more in the coming years even they know the commercials banking sector and economy are under development . On the other hand, the capital adequacy ratio has the positive and significant impact with return on equity that means the profitability should be accompanied with the adequacy of banks capital.

REFERENCES

- Al-Tamimi, H. and Hassan, A. (2010). Factors influencing performance of the UAE Islamic and Conventional national banks. *Global Journal of Business Research*, Vol (4), Issue 2, pp. 1-9
- approach. *International Journal of Multidisciplinary Research*, Vol (2), Issue 3, pp. 38-58
- Baral, K.J. (2005). Health check-up of commercial banks in the framework of CAMEL: A case Study of joint ventures bank in Nepal. *The Journal of Nepalese Business Studies*, Vol (2), Issue 1, pp. 41-52
- Bhandari, A., and Nakarmi, A.M. (2014). A comparison of financial performance of commercial Banks: A case study of Nepal. A paper proposal to be submitted to the *International Symposium of the Analytic Hierarchy Process, Washington D.C., USA*
- Chiorazzo, V., C. Milani, and F. Salvini. (2008). Income Diversification and Bank Performance: Evidence from Italian Banks. *Journal of Financial Services Research*, Vol (33), pp. 181–203.
- commercial bank profitability in Sub-Saharan Africa. *IMF Working Paper*.
- commercial banks in Namibia. *Global Advanced Research Journal of Management and Business Studies*, Vol (4), Issue 6, pp. 216-226
- conventional and Islamic banks from GCC countries. *International Journal of Economics and Finance*, Vol (7), Issue 9, pp. 169-177
- Elyor, S. (2009). Factors affecting the performance of foreign banks in Malaysia. Thesis paper submitted to *College of Business, Universiti Utara, Malaysia*.
- Flamini, C., Valentina C., McDonald, and G., Liliana, S. (2009). The determinants of
- Getahun, M. (2015). Analysing financial performance of commercial banks in Ethiopia: CAMEL approach. An unpublished *MBA Thesis* submitted to *The Department of Accounting and Finance. Addis Ababa University, Ethiopia*

- Ginting, D.P. and Zen T. S. (2015).The performance analysis of merger banks due to single Presence policy in Indonesia with CAMEL ratio. International conference on *Economics and Business Management* presented in *Emirates Association of Chemical, Biological and Environment Engineers,Fuket, Thailand*
- Hardriche, M. (2015). Bank performance determinants: Comparative analysis between
- Ibrahim, M. (2015).A comparative study of financial performance between conventional and Islamic banking in United Arab Emirates.*International Journal of Economics and Financial Issues*, Vol (5), Issue 4, pp. 868-874
- Ifeacho, C., and Ngalawa, H. (2014).Performance of the South African banking sector since 1994.*The Journal of Applied Business Research*, Vol (30), Issue 4, pp. 1183-1196
- Jha, S., and Hui, S. (2012). A comparison of financial performance of commercial banks: A case study of Nepal. *African Journal of Business Management*, Vol (6), Issue 25, pp. 7601-7611
- Kengatharan. L., and Kengatharan, N. (2014). The influence of behavioral factors in making investment decisions and performance: Study on investors of Colombo stock exchange, Sri Lanka. *Asian Journal of Finance & Accounting*, Vol (6), Issue 1, pp.5-18
- Kenneth J. Thygerson (1995), *Management of Financial Institutions*, 1st Edition. United States: Harpercollins Publisher.
- Khrawish, H.A. (2011). Determinants of commercial banks performance: Evidence from Jordan. *International Research Journal of Finance and Economics*, Vol (5), Issue 5, pp. 19-45.
- Kothari, C.K. (2004). *Research Methodology: Methods and Techniques*, 2nd edition. New Delhi: New Age International.

- Kumar, M.A., Harsha, G.S., Anand, S. and Dhruva, N. R. (2012). Analyzing soundness in Indian Banking: A CAMEL approach. *Research Journal of Management Sciences*, Vol (1), Issue 3, pp. 9-14
- Lelissa, T.B. (2014). The determinants of Ethiopian commercial banks performance. *European Journal of Business and Management*, Vol (6), Issue 14, pp.52-62
- Mohanty, A. (2014). An empirical study on financial of commercial banks in India: Application of CAMEL model. *Indian Journal of Management Sciences*, Vol (5), Issue 2, pp. 61-78
- Moussu, C. and Arthur, P.R. (2013). ROE in banks: Myth and reality. An unpublished working paper No. 03/2013 to *ESCP, Europe*.
- Ongore, V.O. and Kusa, G.B. (2013).Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, Vol(3), Issue 1, pp.237-252.
- performance using CAMELS methodology. *International Journal of Management and Business Studies*, Vol (7), Issue 1, pp. 211-228
- Reddy, K. S. (2012). Relative performance of commercial banks in India using CAMEL
- Sen, L.S. et.al (2015).Factors affecting the performance of Islamic Banks and Conventional Banks: Evidence from Malaysia. An unpublished *Research Project* submitted to *Department of Finances, University Tunku Abdul Rahman*.
- Sheefeni, P. J. (2015). Examining the bank specific determinants of profitability among
- Shrestha, B.P. (2011). Long term profitability analysis of commercial banks in Nepal. *PYC Nepal Journal of Management*, Vol (4), Issue 1, pp. 65-75
- Siddiqui, M.H. ,Hossain, K.F. and Karim , L. (2014). Performance evaluation of the banking sector in Bangladesh: A comparative analysis. *Business and Economic Research*, Vol (4), Issue 1, pp. 71-107

- Silber, R. and Udell (1996). Money Banking and Financial Markets, 11th edition. New York: Pearson Education.
- Tesfai, A. (2015). Evaluating the relationship between liquidity, capital adequacy and non- performing loans on financial performance: Case study of Habib bank AG Zurich. An unpublished *MBA Research Project Report* submitted to *Chandaria School of Business, United States International University*.
- Thagunna, K.S. and Poudel, S. (2013). Measuring bank performance of Nepali banks: A data Development Analysis (DEA) perspective. *International Journal of Economics and Financial issues*, Vol (3), Issue 1, pp. 54-65
- Uzhegova, O. (2015). The relative importance of internal factors for banking performance in Developed and emerging economies. *Mediterranean Journal of Social Science*, Vol (6), Issue 3, pp. 277-288
- Zafar, S. M., Maqbool, A. and Ali, S.I. (2012). A study of ten commercial banks financial