

Financial Performance of Nepalese Public Sector and Joint Venture Banks Using CAMEL Model

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Abstract

Nepalese banking sector plays a crucial role in the economy due to its dominant position in the financial system, and hence the efficiency of the financial institutions is crucial for the whole economy, as bank failures become a threat on the banking system. This study analyses the relative performance of selected public and joint venture commercial banks of Nepal using CAMEL rating system and provides a relative ranking under each of the parameters independently. This study focuses on every aspect of financial performance measurement for the study periods of five years i.e. from 2015 to 2019. HBL was found to be able to maintain a higher level of capital and EBL to maintain a higher level of good performing loans and earnings efficiency, as well as SCB, was found to be able to maintain a higher level of managerial efficiency and ADBL to maintain a higher level of liquidity. The results of independent sample t-test showed no significant mean difference in capital adequacy, earning performance, and liquidity between public and joint-venture banks, but showed a significant mean difference in asset quality, and management quality between public and joint-venture banks has found.

Keywords: CAMEL model, commercial bank, financial performance, financial ratios.

Introduction

Financial performance is the process of measuring the results of organization policies and operations in terms of monetary value. These results are reflected in the firm's profitability, liquidity or leverage (Nirmal, 2004). Padachi (2006) study reveals that a well-designed and implemented financial management is expected to contribute positively to the creation of a firm's value through higher financial performance. The ultimate goal of the profitability of a firm can be achieved by efficient use of resources. It is concerned with maximization of shareholder's or owners' wealth (Panwala, 2009). The banking sector has a significant impact on the success of the economy as it plays an important role in sustaining financial markets. Sound financial health of a bank is the guarantee not only to its depositors but is equally important for the investors, employees, customers, stakeholders, and the whole economy as well. Therefore, efforts have been made from time to time, to measure the financial position of the banks and manage them efficiently and effectively (Din Sangmi, 2010). In Developing countries, banks play a major role in financial development. Commercial banks contribute to economic growth through their financial intermediation role (Hempell, 2002). Tihomir (2001) posits that bank's financial performance evaluation is traditionally based on the analysis of financial ratios such return on equity (ROE), return on assets (ROA), net interest margin (NIM), capital asset ratio, a growth rate of total revenue, cost/income ratio.

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However, regardless of how many ratios are being used, a model that would fully satisfy the analysis of needs and bank operations' efficiency evaluation has not been developed, yet. Medhat (2006) study found that there is a strong positive correlation between financial performance and operational efficiency in Omani Commercial banks. Aikaeli (2008) and Gwaula (2013) study compares and evaluate the financial performance of small, medium, and large Commercial banks in a developing country-Tanzania for the period from 2006-2012 using financial ratio analysis and finds that the measurement of the financial performance of the banking sector is important to carry out the business successfully in the increasing competition in the financial markets. Gul at el (2011) study about banks' profitability in Pakistan, found a significant relationship between asset management ratios, capital, and economic growth, and with ROA, the operating efficiency, asset management, and economic growth are significant with the ROE. On the other hand, domestic banks are determined to have a lesser capital adequacy ratio than foreign banks. Chiaki at el (2006) examined the comparative performance of small U.S. commercial banks, medium-size commercial banks, and large commercial banks for the period of 1997-2002 by employing provide sufficiency (PROFEFF), return-on-assets (ROA), interest income, non-interest income, and loan loss reserve as criteria for the comparison. The results showed that between 1997 and 1999, small banks were more profit efficient (PROFEFF) than large banks but less than medium-size banks.

Abdus at el (2006) evaluated the inter-temporal performance of commercial banks; the study was based on three categories of bank size, large, medium, and small banks in the State of Utah for the period of 5 years from 2000 to 2004, by using two measures of performance – profits and quality of loans. T-tests and Kruskal-Wallis tests were applied to a variety of standard bank operations measures to determine whether there are significant differences in performance among the three categories of banks. The performance measures used returned on assets (ROA), return on equity (ROE), loan loss reserve ratio, and loans past due 30-89 days as a percentage of total loans. The study results showed that, no significant difference in performance between small and large banks between the years 2000 and 2004. However, there was a significant difference between small and medium, and medium and large banks in their ROA; the ROA of medium banks is significantly higher than that of small and large banks. Sanaullah (2009) compared the financial performance of Islamic and Conventional banks in Pakistan from 2006 to 2009 by employing Independent sample t-test and ANOVA to determine the significance of mean differences of financial ratios between and among banks, eighteen financial ratios were estimated to measure the performances in term of profitability, liquidity, risk and solvency, capital adequacy, deployment, and operational efficiency. The results of the study indicated that Islamic banks proved to be more liquid, less risky, and operationally efficient than conventional banks.

The health of an individual FI is a function of multiple factors such as quality of its assets, liquidity position, capital base, management quality, market sensitivity, and earnings. All these factors affect the different types of risk to an individual FI. Different types of risks: credit risk, interest rate risk, liquidity risk, market risk, off-balance-sheet risk, foreign exchange risk, sovereign risk, technology, operational risk, insolvency risk, affect the health

of an individual FI adversely if they are not managed in a sustainable manner (Saunders and Cornett, 2004). The study of Baral (2005) asserts that the Nepalese banking sector plays a crucial role in the economy due to its dominant position in the financial system. His study focuses on the use of the CAMEL model to evaluate the financial performance and checkup the financial health and finds that the financial health of joint venture banks is better than that of the other commercial banks. This study attempts to examine the financial performance of public and joint-venture banks in Nepal, and the indicators are explained at length results and findings section of this paper.

This study is organized as follows. Section I describes the background of the study, while section II describes the sample, methodology, and statistical tests, section III reports findings and empirical results and section IV includes conclusion.

Statement of the Problem

The CAMELS rating system, officially known as the Uniform Financial Institutions Rating System, is a supervisory rating system originally developed in the U.S. and adopted by the Federal Financial Institution Examination Council in 1979 to classify a bank's overall condition. Under this model each bank subject to on-site examinations based on five dimensions which are: Capital adequacy, asset quality, management efficiency, earnings quality, and liquidity (Opez, 1999). The report of the Asian Development Bank (2002) posits that the Basle Committee on Banking Supervision of the Bank of International Settlements (BIS) has recommended using capital adequacy, assets quality, management quality, earnings, and liquidity (CAMEL) as criteria for assessing a Financial Institutions in 1988. Further, Gilbert, Meyer, and Vaughan (2000) used market risk (S) was added to CAMEL in 1997 as the sixth component. Siva and Natarajan (2011) empirically tested the applicability of CAMEL norms and its consequential impact on the performance of SBI groups. The study concluded that annual CAMEL scanning helps the commercial bank to diagnose its financial health and alert the bank to take preventive steps for its sustainability. Prasad and Ravinder (2012) evaluated nationalized banks using the CAMEL model for the period 2006 to 2010 in India. The study of Baral (2005) adopted the CAMEL (capital adequacy, assets quality, management quality, earnings, and liquidity) model to check the financial health of the Nepalese banking sector, and found that CAMEL scanning helps the bank to diagnose its financial health and alert the bank to take preventive steps for its sustainability.

- What is the status of the financial performance of commercial banks using the CAMEL model?
- Is there any significant mean difference in financial performance between public and joint venture commercial banks in Nepal?

Objectives

- To analyze the financial performance of each selected commercial bank by providing ranks under each parameter
- To test the mean difference of financial performance between public and joint venture commercial banks

Hypothesis

- *H1*: There are significant differences in financial performance parameters between public and joint-venture banks

Research Methodology

At present, altogether 28 commercial banks are in operation. There are three public banks whose majority of the shares are owned by the government of Nepal, and six joint-venture banks in collaboration with the foreign investment partners and remaining are fully owned by Nepalese investors. For this study, the population has been defined in terms of public and joint venture commercial banks. So the population of this study for public banks is three and six for joint venture banks respectively. Out of this, all public banks viz. Rastriya Banijya Bank, Nepal Bank and Agricultural Development Bank, and three joint-venture banks viz. Standard Chartered Bank, Everest Bank and Himalayan Bank were selected.

This study is based on the historical data disclosed by annual reports of commercial banks. This study covers the study periods of five years i.e. from July 2015 to July 2019. The data are originally collected as per the Nepali calendar date and converted into the Gregorian date. NRB has dictated the commercial banks to disclose the financial information in the prescribed format since the FY 2001/02. So, the comparison of the financial performance of commercial banks to each other is only possible only the FY 2000/01 onward. Most of the commercial banks have yet to hold the annual general meeting and publish their annual report for the FY 2004/05. So, it is not possible to include this FY in the study. Therefore, this study covers the last four consecutive fiscal years-from the FY 2000/01 through FY 2003/04. The analysis of this study is entirely based on the CAMEL framework.

As stated in the background, the financial performance of sample banks is concentrated in the five components: capital adequacy, asset quality, management quality, earnings, and liquidity. Indicators of each component also have been used according to the financial data disclosed in annual reports of sample banks.

Descriptive statistics (arithmetic mean, standard deviation, and coefficient variation) has been used to measure the average values, relative values, and variation of indicated ratios. Rank has been given based on relative values. The independent sample t-test has been used to compare the mean values of ration between public and joint venture banks. CAMELS framework is a common method for evaluating the soundness of FIs. This system was developed by regulatory authorities of the U.S banks. The Federal Reserve Bank, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation all use this system (McNally, 1996). Monetary authorities in most of the countries are using this system to check up the health of an individual FI. Besides, the International Monetary Fund also is using the aggregated indicators of individual FIs to assess the financial system soundness of its member countries as part of its surveillance work (Hilbers, Krueger and Moretti, 2000). The components of CAMEL used to reflect financial performance of financial institutions, and they are explained below:

Capital Adequacy

Hilbers, Krueger, and Moretti (2000) assert CAMELS framework system looks at six major aspects of a Financial Institution: capital adequacy, asset quality, management soundness, earnings, liquidity, and sensitivity to market risk. The first component, capital adequacy ultimately determines how well FIs can manage with shocks to their balance sheets. Thus, it tracks capital adequacy ratios that take into account the most important financial risks-foreign exchange, credit, and interest rate risks-by assigning risk weightings to the institution's assets. For capital adequacy measurement, bank capital is divided into Tier I and Tier II. Tier I capital is primary capital and Tier II capital is supplementary capital.

NRB Bank Supervision Report (2005) states that in the Nepalese context, Tier I (core/primary) capital includes paid-up capital, share premium, non-redeemable preference share, general reserve fund, accumulated profit, capital redemption reserve, capital adjustment fund, and another free reserve. Amount of the goodwill, fictitious assets, investment in the financial instruments issued by an organized organization in excess to the limit specified by NRB, and investment in the financial instruments issued by the organizations having the own financial interest is deducted from the sum of all elements of the primary capital to arrive at the core capital. Similarly, Tier II (supplementary) capital comprises of general loan loss provision, assets revaluation reserve, hybrid capital instruments, subordinated term loan, exchange equalization reserve, excess loan loss provision, and investment adjustment reserve. Thus, the total capital of commercial banks is the sum of core capital and supplementary capital.

Asset Quality

Credit risk is one of the factors that affect the health of an individual financial institution. The extent of the credit risk depends on the quality of assets held by an individual financial institution. The quality of assets held by a financial institution depends on exposure to specific risks, trends in the non-performing loans, and the health and profitability of bank borrowers-especially the corporate sector. We can use many measures to indicate the quality of assets held by FIs. ADB in its report (2002) suggests these measures-loan concentrations by industry, region, borrower and portfolio quality; related party policies and exposure on an outstanding loan, the approval process of the loan, check and balance of loans; loan loss provision ratio; portfolio in arrear; loan loss ratio; and reserve ratio-of checking the quality of assets of an FI.

NRB Bank Supervision report (2005) uses composition of assets, nonperforming loan to total loan ratio, net non-performing loan to total loan ratio as the indicators of the quality of assets of commercial banks. NRB has directed the commercial banks regarding the concentration of the loan. Any licensed FI can grant the fund base loan to a single borrower or borrowers related to the same business group up to 25 percent of its primary capital. In the same vein, it can provide the non-fund base loan up to 50 percent of its core capital. Similarly, it has directed FIs to classify the loans into performing loans and nonperforming loans.

Management Quality

Sound management is the key to bank performance but is 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 employee, cost per loan, average loan size, and cost per unit of money lent can be used as a proxy of the management quality. ADB recommends cost per unit of money lent as a proxy of management quality. But this cannot be used as an indicator of management quality in Nepal. Since the data on the amount of the total loan mobilized during a particular FY is not available in published financial statements and annual reports. As stated earlier, the NRB Bank Supervision Report (2005) has skipped up this component of CAMELS in the performance evaluation of commercial banks.

Earning Performance

Earning capacity or profitability keeps up the sound health of an FI. Chronically unprofitable FI risks insolvency on one hand and the others, unusually high profitability can reflect excessive risk-taking of an FI. There are different indicators of profitability. Return on assets, return on equity, interest-spread ratio, earning-spread ratio, gross margin, operating profit margin, and net profit margin are commonly used profitability indicators. NRB Bank Supervision Report (2005) uses return on total assets as an indicator of the profitability of a commercial bank. Besides, it uses the absolute measures such as interest income, net interest income, noninterest income, net non-interest income, non-operating income, net non-operating income, and net profit, to evaluate the profitability of a commercial bank.

Liquidity

Liquidity risk threatens the solvency of FIs. In the case of commercial banks, the first type of liquidity risk arises when depositors of commercial banks seek to withdraw their money and the second type does when commitment holders want to exercise the commitments recorded off the balance sheet. Commercial banks have to borrow the additional funds or sell the assets at a fire-sale price to pay off the deposit liabilities. They become insolvent if the sale price of the assets is not enough to meet the liability withdrawals. The second type of liquidity risk arises when demand for unexpected loans cannot be met due to the lack of funds. Commercial banks can raise the funds by running down their cash assets, borrowing additional funds in the money markets, and selling off other assets at a distressed price. Both liability side liquidity risk (first type risk) and asset side liquidity risk (the second type of risk) affect the health of commercial banks adversely. But maintaining the high liquidity position to minimize such risks also adversely affects the profitability of FIs. The return on highly liquid assets is almost zero. Therefore, this should strike the tradeoff between liquidity position and profitability so that they could maintain their health sound.

Saunders and Cornett (2004) posit that the commercial bank's liquidity exposure can be measured by analyzing the sources and uses of liquidity. In this approach, total net liquidity is worked out by deducting the total of uses of liquidity from the total sources of liquidity. Similarly, the BIS maturity laddering model can be used to measure the liquidity of commercial banks. Besides, different liquidity exposure ratios such as borrowed funds to total assets, core deposit to total assets, loans to deposits, and commitments to lend to total assets are used to measure the liquidity position of a commercial bank. NRB Bank Supervision Report (2005) uses a total loan to total deposit ratio, cash, and equivalents to total assets ratio, cash, and

equivalents to total deposit ratio, NRB balance to total deposit ratio to measure the liquidity position of commercial banks in the course of the performance evaluation of commercial banks. In this paper, an attempt has been made to analyze the financial performance of the public and joint venture commercial banks using the CAMEL model.

Findings and Results

This section of the study presents empirical findings that are based upon financial ratios implemented on the annual consolidated financial statements of the sample banks for the year ended July 2018.

Capital Adequacy Ratio (CAR)

The total capital of commercial banks is the sum of core capital and supplementary capital. Tier I capital is primary capital and Tier II capital is supplementary capital.

Table 1

Capital Adequacy Ratio (CAR)

Type of Bank	Bank	Mean	Std. Deviation	C.V.	Rank	N	Mean	Std. Deviation
Public Bank	RBB	9.42	2.73	0.29	5	15	12.72	5.09
	NBL	10.86	5.25	0.48	6			
	ADB	17.87	2.20	0.12	3			
Joint Venture Bank	SCB	17.16	4.75	0.28	4	15	13.99	3.61
	EBL	13.24	1.33	0.10	2			
	HBL	11.56	0.70	0.06	1			

t-value = 0.789 and p value = 0.437

The coefficient of variation of capital adequacy ratio (Table 1) of Himalayan Bank Limited is the lowest and followed by Everest Bank Limited. It depicts that HBL was able to maintain a higher level of Tier I and Tier II capital in its Risk-Weighted Assets indicating financial soundness. An independent sample t-test was conducted to compare the CAR for public and joint venture banks. There was no significant mean difference in CAR between public (M=12.72, S.D.=5.09) and joint venture banks (M=13.99, S.D.=3.61); $|t(28)|=0.789$ and $p=0.437$. These results suggest that the CAR does not differentiate between public and joint venture banks.

Non-performing Loan to Total Loan (NPL/TL)

The nonperforming loan to total loan ratio is the indicator of the quality of assets of commercial banks. NRB in its Supervision Report (2017) has stated the guidelines for FIs to classify the loans into performing loan and nonperforming loans.

Table 2*Non-performing Loan to Total Loan (NPL/TL)*

Type of Bank	Bank	Mean	Std. Deviation	C.V.	Rank	N	Mean	Std. Deviation
Public Bank	RBB	4.90	1.01	0.21	4	15	4.41	1.01
	NBL	3.69	0.90	0.24	3			
	ADB	4.64	0.83	0.18	5			
Joint Venture Bank	SCB	0.30	0.12	0.41	2	15	0.87	0.74
	EBL	0.49	0.32	0.65	1			
	HBL	1.82	0.33	0.18	5			

t-value = 10.94 and p value < 0.001

The coefficient of variation of Non-performing loan to total loan ratio (Table 2) of Everest Bank Limited is the highest and followed by Standard Charter Bank. It depicts that EBL was able to maintain a higher level of good performing loans. An independent sample t-test was conducted to compare the NPL/TL for public and joint venture banks. There was significant mean difference in NPL/TL between public (M=4.41, S.D.=1.01) and joint venture banks (M=0.17, S.D.= 0.74); $|t(28)|=10.94$ and $p<0.001$. These results suggest that the NPL/TL differs between public and joint venture banks.

Net Income per Employee

Earning per employee has been calculated by dividing the net income by the total number of employees and it has been used as the measure of the management quality.

Table 3*Net Income per Employee*

Type of Bank	Bank	Mean	Std. Deviation	C.V.	Rank	N	Mean	Std. Deviation
Public Bank	RBB	1248628.57	458419.81	0.37	4	15	1039134.88	472625.23
	NBL	928168.23	647424.09	0.70	5			
	ADB	940607.84	264798.92	0.28	2			
Joint Venture Bank	SCB	3248593.48	709078.20	0.22	1	15	2464270.22	854210.50
	EBL	2206568.75	622059.64	0.28	2			
	HBL	1937648.42	682264.62	0.35	3			

t-value = 5.65 and p-value < 0.001

The coefficient of variation of net income to no. of employee ratio (Table 3) of Standard Chartered Bank Limited is the lowest and followed by Everest Bank Limited and Agriculture Bank Limited with equal rank. . It depicts that SCB was able to maintain a higher level of managerial efficiency. An independent sample t-test was conducted to compare the NI/ No. of employees for public and joint venture banks. There was significant mean difference in NPL/TL between public (M=1039134.88, S.D.=472625.23) and joint venture banks (M=2464270.22, S.D.= 854210.50); $|t(28)|= 5.65$ and $p<0.001$. These results suggest that NI/ No. of Employee differs between public and joint venture banks.

Return on Assets (ROA)

Return on assets is the indicator of profitability and it has been used as an indicator of earning performance of the commercial banks.

Table 4*Return on Assets*

Type of Bank	Bank	Mean	Std. Deviation	C.V.	Rank	N	Mean	Std. Deviation
Public Bank	RBB	1.83	0.78	0.43	4	15	2.06	0.82
	NBL	1.97	1.14	0.58	5			
	ADB	2.38	0.50	0.21	3			
Joint Venture Bank	SCB	2.19	0.35	0.16	2	15	1.89	0.60
	EBL	1.90	0.24	0.13	1			
	HBL	1.60	0.93	0.58	5			

t-value = 0.62 and p-value = 0.54

The coefficient of variation of Return on Assets (Table 4) i. e. Net Income on Total Assets of Everest Bank Limited is the lowest and followed by Standard Chartered Bank with 2nd rank. It depicts that EBL was able to maintain better-earning efficiency. An independent sample t-test was conducted to compare the ROA for public and joint venture banks. There was no significant mean difference in ROA between public (M=2.06, S.D.= 0.82) and joint venture banks (M=1.89, S.D.= 0.60); $|t(28)| = 0.62$ and $p=0.54$. These results suggest that ROA does not differ between public and joint venture banks.

Liquidity Ratio (LR)

The cash reserve ratio has been used as a liquidity ratio to analyze the financial performance of the public and joint venture commercial banks.

Table 5*Cash Reserve Ratio*

Type of Bank	Bank	Mean	Std. Deviation	C.V.	Rank	N	Mean	Std. Deviation
Public Bank	RBB	12.57	5.34	0.43	5	15	19.18	8.43
	NBL	16.41	6.02	0.37	4			
	ADB	28.57	3.09	0.11	1			
Joint Venture Bank	SCB	17.96	5.71	0.32	3	15	21.88	7.06
	EBL	18.41	3.31	0.18	2			
	HBL	29.25	5.36	0.18	2			

t-value = 0.949 and p-value = 0.35

The coefficient of variation (C.V.) of Liquidity Ratio measured by Cash Reserve Ratio (Table 5) of Agriculture Development Bank is the lowest and followed by Everest Bank Limited and Himalayan Bank Limited with equal 2nd rank. It depicts that ADBL was able to maintain a higher level of liquidity. Whereas, the coefficient of variation of Liquidity Ratio of RBB was highest with 5th rank indicating RBB has a lower amount of liquidity as compared with

others. An independent sample t-test was conducted to compare the LR or CRR for public and joint venture banks. There was no significant mean difference LR Or CRR between public (M=19.18, S.D.=8.43) and joint venture banks (M=21.88, S.D.= 7.06); $|t(28)|= 0.949$ and $p=0.35$. These results suggest that LR or CRR does not differentiate between public and joint venture banks.

Conclusion

HBL was able to maintain a higher level of Tier I and Tier II capital in its Risk-Weighted Assets indicating financial soundness. EBL was able to maintain a higher level of good performing loans and earning efficiency. SCB was able to maintain a higher level of managerial efficiency. ADBL was able to maintain a higher level of liquidity but RBB has a lower amount of liquidity as compared with others. There was no significant mean difference in capital adequacy, earning performance, and liquidity between public and joint-venture banks thus it can be concluded that public and joint-venture banks in Nepal can maintain the same level of capital & liquidity as well as they have the same level of earning. Moreover, there was a significant mean difference in asset quality and management quality between public and joint venture banks. Thus it can be concluded that Joint venture banks of Nepal have better asset quality by reducing non-performing loans and management quality by utilizing the human resource efficiently.

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