

# **BANK-SPECIFIC VARIABLES AND FINANCIAL PERFORMANCE: A CASE OF NEPALESE DEVELOPMENT BANKS**

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## **Abstract**

The paper is motivated to present the impact of bank-specific variables on the financial performance of Nepalese development banks. The study period is confined to 9 years, starting from the years 2069/2070 to 2077/78. The performance variables under investigation were return on assets (ROA) and return on equity (ROE). The bank-specific variables were capital adequacy, asset quality, management efficiency, and liquidity. The findings of the study showed that management efficiency and liquidity have a positive impact on bank performance whereas capital adequacy and assets quality management has a negative impact on bank performance.

**Key Words: Bank-specific variables, performance, capital adequacy**

## **I. Introduction**

It is well known evidence that financial institutions help to achieve sustainable economic growth by providing efficient monetary intermediation. Research shows that financial performance determines the success and failure of the bank and also presents the financial stability of the nation, it helps to measure how well a bank is performing its activities so; the management of the bank and regulatory authority must identify the factors affecting the financial performance of the bank. To make a correct investment decision, it is very important for resource providers to analyze how well a financial institution is performing. If financial performance is good then it will encourage additional investment as shareholders will get rewards for their investment, which will ultimately bring economic growth. On the other hand, if banking performance is poor then it leads to banking failure and crisis which will hamper economic growth (Gautam, 2018).

Similar to the line of concept on performance analysis, it is a way to evaluate the financial statement having key financial variables of a firm through the accepted tools & techniques to identify the financial strengths and weaknesses of a firm. Financial performance analysis is just like the financial health check-up of any organization and it is necessary to regularly check the financial health of the organization to maintain and protect the interest of depositors, lenders, shareholders as well as other stakeholders (Gautam, 2020). The performance evaluation of a development bank is usually related to how well the bank can use its assets, shareholder's equities and liabilities, revenues and expenses i.e. basically about how well a bank can mobilize its deposits. Various factors can affect the financial health of a bank in which political stability and real sector growth are major macro factors and capital adequacy, quality of assets, liquidity, and management quality are micro factors (Saunders & Cornett, 2004).

McKinnon (1973) mentioned that there is a strong and positive correlation between financial system development and the economic growth of a nation. This means a well-developed financial system and strong financial position of financial institution help to boost the economy of the nation.

According to Venkatesh and Suresh (2014), financial institutions like banks provide various financial products and services which enable the corporate sector as well as a household sector to cope with economic uncertainties by hedging, pooling, sharing, and pricing risks. Development bank performs both banking function as well as development function. Development bank promotes development sectors by providing them with technical and economic assistance. Financial performance analysis focuses on financial statements and the significant relationship that exists among the variables contained. In this regard, Metcalf and Titard (1975) said that analyzing financial performance is a process of evaluating financial statements to obtain a better understanding of a firm's position and performance (Hampton, 1998). The performance of development banks depends on how well the bank can manage and maintain its internal factors such as capital adequacy ratio, assets quality management, management efficiency, and liquidity.

The public's faith and trust in the bank's soundness are boosted by its high level of capital. Stronger banks can direct available cash into profitable commercial activity (Pasaribu & Sari, 2011). Capraru and Ihnatov (2014) elucidated that the return on assets and return on equity are heavily influenced by management efficiency and capital adequacy. ROE is negatively correlated with CAR (Tamang, 2021). Assets quality has a negative but significant relation with ROA (Ekinici & Poyraz, 2019). Ngwili (2014) examined a significant positive relationship between liquidity and ROA. There is a negative relationship between ROA and liquidity (Al-Qudah, 2020).

Prior studies have found a relationship between firm-specific variables namely capital adequacy, asset quality, management efficiency, earnings ability, and liquidity on the performance of the bank. For instance, the bank-specific factors included in the study conducted by Ariyibi et al. (2020) in Nigeria were loan-to-deposit ratio, capital adequacy, and assets quality, and found that there is a significant positive relationship between loan-to-deposit ratio, capital adequacy, and return on assets.

In addition, Kamande et al. (2016) investigate the impact of bank-specific factors on the financial performance of Kenyan commercial banks. They concluded that the asset quality of the bank has the highest influence on the ROA of banks so, asset quality affects profitability and the financial performance of the bank. In the Nepalese context, Kandel (2019) found that liquidity moderately influences the performance of banks, and management efficiency has minimal impact on both ROA and ROE. Earning and liquidity positions have a high influence on ROA while asset quality, liquidity, and earning have more influence on ROE. By the same token, Gautam (2020) found that ROA has a significant positive relationship with capital adequacy and ROE but ROA has a significant negative relationship with assets quality. Likewise, Gautam (2020) study also mentions that there was a significant positive relationship of ROE with assets quality and ROA but a significant negative relationship between ROE with capital adequacy. Furthermore, Hamal's (2020) research found a negative and statistically significant association between size and long-term investment and financial performance.

## **II. Literature review**

Several kinds of research have been conducted on the impact of different factors on the financial soundness and performance of the banking sector throughout the world by using a variety of approaches. A study conducted by Nsambu (2014) on the factors affecting the performance of commercial banks in Uganda by using multiple regression analysis findings of the study indicated

that management efficiency; asset quality; interest income; capital adequacy and inflation are factors affecting the performance of domestic commercial banks in Uganda.

Management efficiency of the bank has the highest influence on the ROA of banks and had recommended that to prevent banks from being insolvent, bank managers should practice efficient and effective management. Mbaya (2016) initiated a study and found that efficiency and capital sufficiency have a considerable positive impact on bank profitability; however, liquidity has a negative impact. The result of Aziz et al. (2018) showed that capital adequacy, asset quality, liquidity, and inflation have a strong but indirect correlation with banks' performance. Management efficiency has a very strong and positive relationship with bank performance in Nepal (Pradhan and Shrestha, 2016).

Return on assets has a positive link with capital adequacy ratio, management efficiency, and gross domestic product, but it has a negative relationship with asset quality and liquidity management (Gautam, 2018). Dhakal (2020) established a positive relationship between the current ratio, capital adequacy ratio, and liquidity ratio with ROA and negative relation between capital adequacy ratio, liquidity ratio, and loan-to-deposit ratio with ROA.

### III. Methods

The study uses descriptive as well as casual-comparative research design. The population of the study is all development banks in Nepal i.e. 18 development banks of Nepal. Among 18 development banks, there is a total of 8 national-level development banks and out of them 5 (Muktinath Bikas Bank Ltd, Kamana Sewa Bikas Bank Ltd, Jyoti Bikas Bank Ltd, Lumbini Bikas Bank Ltd, and Garima Bikas Bank Ltd) are selected which has positive net profit as well as listed as top development bank on NEPSE 2021. The study only covers the study period from FY 2069/70 to 2077/78 because of the unavailability of the annual report of Garima Bikas Bank Ltd. for FY 2068/69.

The nature data is the secondary source of data, which was collected through the annual report from the website of the concerned bank and different published articles and journals related to this study and even published as well as unpublished previous studies regarding a similar topic. Descriptive statistics, regression, and correlation analysis as a part of the inferential analysis were used to examine the relationship between dependent and independent variables through SPSS and MS excel.

#### The Model

The basic model used in this study (Pradhan & Shrestha, 2016; Pokharel, 2018) is;

Firm performance = f (capital adequacy, assets quality, management efficiency, and liquidity).

More specifically, the given model has been subdivided into the following models:

#### Model 1

$$ROA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 AQ_{it} + \beta_3 ME_{it} + \beta_4 LDR_{it} + \epsilon_{it}$$

#### Model 2

$$ROE_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 AQ_{it} + \beta_3 ME_{it} + \beta_4 LDR_{it} + \epsilon_{it}$$

Where,

$ROA_{it}$  = Return on assets

$ROE_{it}$  = Return on equity

$CAR_{it}$  = Capital adequacy ratio

$AQ_{it}$  =Assets quality

$ME_{it}$  = management efficiency

$\beta_0$  = Consent term

$LDR_{it}$  = liquidity ratio

$e_{it}$  = Error term

## IV. Results and Discussion

### Descriptive Analysis

To explain the phenomenon, several descriptive statistics like mean, minimum, maximum, and standard deviation are used. Table 4.2 shows the descriptive statistics for the dependent and independent variables of sample banks included in this study.

*Table 1 Descriptive statistics of dependent and independent variables of sample banks*

*This table shows the descriptive statistics of dependent and independent variables of development banks for the study period of 2069/70 to 2077/78 .The independent variables in the study are CAR )capital adequacy ratio defined as tier 1 capital plus tier 2 capital divided by total risk-weighted assets(, ME )management efficiency defined as dividing operating profit by income(, AQ )assets quality defined as dividing nonperforming loan by total loan (and LDR )Liquidity Ratio defined as total loan divided by total deposit (whereas the dependent variables are ROE )Return on Equity defined as dividing net profit by shareholder equity (and ROA)return on assets defined as dividing net profit by total assets .(The descriptive statistics are based on the data from 5 sample banks with 45 observations for the period 2069/70 to 2077/78.*

<i>Variables</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>
<i>Capital Adequacy (%)</i>	<i>11.19</i>	<i>30.60</i>	<i>15.3604</i>	<i>3.78440</i>
<i>Assets Quality (%)</i>	<i>.004</i>	<i>17.270</i>	<i>1.52298</i>	<i>2.879253</i>
<i>Management Efficiency</i>	<i>-103.03</i>	<i>78.94</i>	<i>19.1533</i>	<i>29.83614</i>
<i>Liquidity Ratio (%)</i>	<i>51.89</i>	<i>94.67</i>	<i>82.5509</i>	<i>6.82082</i>
<i>Return on Assets (%)</i>	<i>-2.93</i>	<i>2.89</i>	<i>1.4142</i>	<i>1.06005</i>
<i>Return on Equity (%)</i>	<i>-12.42</i>	<i>29.94</i>	<i>14.1722</i>	<i>8.03620</i>

Table 1 shows that the minimum and maximum values of CAR are 11.19 and 30.60 respectively with an average of 15.36 and standard deviation of 3.78. All banks had maintained the minimum requirement of CAR set by NRB which was 10%. Similarly, assets quality the ratio of nonperforming loan to total loan ranges from 0.004 to 17.27 with an average of 1.522 and standard deviation of 2.87. However, NRB had set the percentage nonperforming loan should not more than 5%.

Furthermore, management efficiency varies from -103.03 to 78.94 along with an average of 19.15 and standard deviation of 29.83. Liquidity ratio ranges from 51.89 to 94.67 with an average of 82.55 and standard deviation of 6.82.

Likewise, ROA ranges from -2.93 to 2.79 with an average of 1.4142 and standard deviation of 1.06005. In addition, ROE ranges from -12.42 to 29.94 with an average of 16.12 and standard deviation of 14.09. The standard deviation is smaller than mean which means that the performance is somewhat consistent. Moreover, management efficiency is highest variation of selected development banks which noticed to be 29.83 during the study period.

**Table 2: Pearson correlation matrix for selected development banks**

*This table shows the Pearson correlation between the variables. The correlation coefficients are based on the data from 5 development banks of Nepal for the period of 2069/70 through 2077/78. The independent variables in the study is CAR (capital adequacy ratio defined as tier 1 capital plus tier 2 capital divided by total risk weighted assets), ME (management efficiency defined as dividing operating profit by income), AQ ( assets quality defined as dividing nonperforming loan by total loan) and LDR( Liquidity Ratio defined as total loan divided by total deposit) whereas the dependent variable is ROE (Return on Equity defined as dividing net profit by shareholder equity) and ROA(return on assets defined as dividing net profit by total assets) as depicted in the table below:*

<b>Variables</b>	<b>CAR</b>	<b>AQ</b>	<b>ME</b>	<b>LDR</b>	<b>ROA</b>	<b>ROE</b>
<b>AQ</b>	-0.053	1				
<b>ME</b>	0.115	-0.863**	1			
<b>LDR</b>	-0.002	-0.686**	0.636**	1		
<b>ROA</b>	0.054	-0.837**	0.820**	0.509**	1	
<b>ROE</b>	-0.236	-0.764**	0.782**	0.463**	0.827**	1

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

Table 2 shows that CAR has a positive correlation with ME and ROA but negative correlation with AQ, LDR and ROE. This indicates that the increase in capital adequacy ratio leads to increase management efficiency and return on assets but decreases assets quality, liquidity ratio and return on equity.

Similarly, AQ have a negative association with all variables. It negatively affects ROA and ROE. Increase in assets quality leads to decrease ROA and ROE. AQ has negative but significant relation with ROA and ROE.

Furthermore, ME has significant and positive relation with LDR, ROA and ROE. Increase in ME leads to increases LDR, ROA and ROE. This means higher the management efficiency better will be the performance of development banks.

Return on Equity is positively and significantly correlated with Liquidity Ratio of the development bank. This indicates that the increase in liquidity ratio increases the Return on Equity of banks. Likewise LDR has a positive and significant relation with ROA. Increase in liquidity improves the performance of bank as it increases the profit by increasing ROA and ROE.

### **Regression Analysis**

Regression analysis is a statistical tools or method for examining the relation between dependent and independent variables so that researcher can know how change in independent variables

affects the dependent variables. Regression analysis has been calculated and presented in the table below:

**Table 3.a: Regression analysis of ROA on independent variables**

The results are based on regression analysis data of 5 development banks for the period of 2069/70 to 2077/78 by using a linear regression model. The model is  $ROA = \beta_0 + \beta_1 CAR + \beta_2 AQ + \beta_3 ME + \beta_4 LDR + e$ , where ROA is return on assets defined as net income divided by total assets, in percentage is the dependent variables and CAR is capital adequacy ratio defined as tier 1 capital plus tier2 capital divided by risk weighted assets, in percentage, AQ is assets quality defined as nonperforming loan divided by total loan ,ME is management efficiency defined as operating profit divided by income and LDR is liquidity ratio defined as total loan divided by total deposit are independent variables.

<i>Model</i>	<i>Constant</i>	<i>CAR</i>	<i>ME</i>	<i>AQ</i>	<i>LDR</i>	<i>F</i>	<i>R<sup>2</sup></i>
<i>1</i>	1.182*** (1.753)	0.015 (0.0355)				0.126	0.003
<i>2</i>	0.856** (7.85)		0.029** (9.395)			88.275	0.672
<i>3</i>	1.833** (18.982)			-0.038** (-10.026)		100.52	0.7
<i>4</i>	-5.122* (-3.032)				0.079** 3.883	15.074	0.26
<i>5</i>	1.03 (2.639)	-0.012 (-0.465)	0.029** (9.301)			43.44	0.674
<i>6</i>	1.507** (3.915)	-0.005 (-0.214)	0.14 (2.429)	-0.185* (-3.167)		38.53	0.735
<i>7</i>	3.604* (2.41)	-0.007 (-0.318)	0.015* (2.628)	-0.216** (-3.513)	-0.025 (-1.45)	30.201	0.751

Notes:

Figures in parenthesis are *t* values.

(\*\*)sign indicates that result is significant at 1 %level.

(\*)sign indicates that result is significant at 5 %level.

(\*\*\*)sign indicates that result is significant at 10 %level .

The above table 3.a shows that beta coefficient is negative and insignificant for capital adequacy ratio. It indicates that an increase in capital adequacy leads to decrease ROA. This finding is contradicting with the findings of Gautam (2020). In addition, beta coefficient is positive and significant for management efficiency. IT implies that increase in management efficiency leads to increase return on assets. This finding is similar with the findings of Pradhan and Shrestha (2016). ME is significant at 1% level.

Furthermore, beta coefficient is negative but statistically significant for assets quality and is significant at 1% level with ROA. It denotes that increase in assets quality leads to decrease return on assets. This finding is similar with the findings of Gautam (2018).

In the same way beta coefficient is weak but positive for liquidity and significant at 1% level with ROA. It signifies that increase in liquidity leads to increase return on assets. This finding is similar with the findings of Ngwili (2014).

Table 3.b Regression analysis of ROE on independent variables

The results are based on regression analysis data of 5 development banks for the period of 2069/70 to 2077/78 by using a linear regression model. The model is  $ROE = \beta_0 + \beta_1 CAR + \beta_2 AQ + \beta_3 ME + \beta_4 LDR + e$ , where *CAR*, *AQ*, *ME* and *LDR* stands for capital adequacy, assets quality, management efficiency and liquidity ratio. where *ROE* is return on equity defined as net income divided by total shareholder equity, in percentage is the dependent variables and *CAR* is capital adequacy ratio defined as tier 1 capital plus tier2 capital divided by risk weighted assets, in percentage, *AQ* is assets quality defined as nonperforming loan divided by total loan, *ME* is management efficiency defined as operating profit divided by income and *LDR* is liquidity ratio defined as total loan divided by total deposit are independent variables.

Model	Constant	CAR	ME	AQ	LDR	F	R <sup>2</sup>
1	21.862** (4.394)	-0.501 (-1.159)				2.531	0.56
2	10.138** (11.257)		0.211** (8.225)			67.657	0.672
3	17.419** (19.639)			-2.132** (-7.761)		60.232	0.574
4	-30.828* (-2.337)				0.079** (3.883)	11.712	0.214
5	20.72** (7.541)	-0.702** -4.014	0.221** (9.962)			53.774	0.719
6	22.806** (7.853)	-0.672** (-3.936)	0.153** (3.571)	-0.811 -1.838		39.004	0.741
7	41.794** (3.747)	-0.693** (-4.149)	0.162** (3.857)	-1.09* (-2.376)	-0.223*** (-1.76)	31.524	0.759

Notes:

Figures in parenthesis are t values.

(\*\*) sign indicates that result is significant at 1% level.

(\*\*\*) sign indicates that result is significant at 10% level.

(\*) sign indicates that result is significant at 5% level.

The above table 3.b shows that beta coefficient is strong and positive for management efficiency and significant at 1% level with ROE. It shows that increase in management efficiency leads to increase return on equity. This finding is similar with the findings of Ngalawa (2014). In addition beta coefficient is weak but positive for liquidity and significant at 1% level with ROE. It signifies that increase in liquidity leads to increase return on equity. This finding is similar with the findings of Kandel (2019).

On the other hand beta coefficient is negative but statistically significant for capital adequacy ratio and significant at 1%. This finding is similar with the finding of Tamanag (2021) and contradicts with the findings of Ariyibi et al. (2020). It indicates that an increase in capital adequacy leads to decrease ROE. Further, beta coefficient is negative and significant for assets quality and is significant at 1% level with ROE. It denotes that increase in assets quality leads to decrease return on equity. This finding is similar with the findings of Nyabaga and Wepukhulu (2020).

## V. Conclusion

The major conclusion of this study is that management efficiency and liquidity has the positive impact on return on assets which indicates that higher the management efficiency and liquidity,

higher would be return on assets. Similarly, assets quality has negative but statistically significant relation with return on assets. Thus, higher the assets quality, lower would be the return on assets. On the other hand, management efficiency has strong and positive impact on return on equity and liquidity ratio has weak but positive relation with return on equity. Thus, higher the management efficiency and liquidity ratio higher would be the return on equity. Furthermore, capital adequacy ratio and assets quality has negative but statistically significant impact on return on equity which indicates that higher the capital adequacy and assets quality, lower would be the return on equity.

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