

A STUDY TO MEASURE THE RELATIONSHIP BETWEEN THE PERFORMANCE AND ITS INDICATORS IN COMMERCIAL BANKS

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ABSTRACT

The current study aims to identify the various indicators for measuring the performance of banks and to find out how these performance indicators and performance of the banks are related to each other. The study has been conducted for India commercial banks. On the basis of review of literature, five indicators of the performance of the banks have been taken such as; liquidity, asset quality, capital adequacy, profitability and efficiency. The study is based on the secondary data taken for last three financial years from 2011-12 to 2013-14. Multiple regression analysis technique has been used in the study. It was found from the study that ROA is positively related to efficiency, liquidity, profitability and capital adequacy ratio while ROA is negatively related with asset quality variable.

KEYWORDS: *Commercial banks, liquidity, efficiency, capital adequacy and asset quality.*

1. INTRODUCTION

Financial institutions can be defined as economic mediators involved in the specialised activities of trading of financial contracts and securities all together [1]. Banks may be seen as a subgroup of the financial institutions. Banks accept the funds from the surplus unit of the society and use those funds in lending loans to the deficit unit of the society as per their requirements and needs. Banks are also involved in the process of trading of the financial securities as well. In general terms, a bank can be defined as a financial institution whose main functions consist of receiving deposits from the public and granting loans to the general public [1].

“Thank God, In joy & sorrow, to deposit & borrow, BANKS ARE THERE, Otherwise, The question would be funny, to keep & get money, HOW & WHERE?[2]”

The above statement of Montek Singh Ahluwalia, points towards the importance of Banks. For the growth of an economy of a nation, banking system plays an important role. In fact, banking system of any country is the lifeblood of an economy. A banking institution has become an essential part of the modern society [3]. Banking sector plays a pivotal role in the

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economic development of a country. Banking sector plays a central role in the money market of any country. Three primary functions performed by the banking sector in an economy are; payment system, the mobilization of savings or accepting the deposits in different forms and the distribution of funds to investment projects. Banking system plays an acute role in the process of transmission and implementation of monetary policy of RBI, to the entire economic system of the country. Banking sector is also considered as the core component of the financial markets and capital markets on any economy [4]. A well-organized banking structure can stimulate larger amount of investment that may help a nation to achieve a faster growth rate of economy. It is also confirmed with the experiences of other economies of the world that countries whose banking system is well developed and market oriented; will grow at a faster rate and more consistently than other countries [5].

Banks have important role to play in a developing country like India which is constitutionally dedicated to socialistic arrangement of society [6]. Banks play a major role in the reduction of regional disparities of a country, which is an essential objective of the financial planning of an economy. Thus a major concern for the economic planners and policy makers is to measure the performance of banks in financial terms along with measuring the ability of a bank to fulfil its social obligations [7]. The growth of any economy directly affects the performance of the banks while the nature and extent of growth of an economy is directly linked with the availability of bank credit [8].

Numerous studies have been conducted by the researchers in different countries of the world, for measuring the performance of the banks. Different researchers have measured the performance of the banks from different perspectives. Various performance indicators have been used by the researchers to measure the performance of the banks. Thus an attempt has been made in current study to include almost all the important indicators for measuring the performance of the banks and to find the relationship between performance and its indicators.

2. OBJECTIVES OF THE STUDY

The key objective of the study is to measure the relationship between financial indicators; liquidity, profitability, capital adequacy ratio, efficiency, and asset quality with performance of the banks.

3. RESEARCH METHODOLOGY

In the current study secondary data has been collected from the annual reports of the banks, RBI annual publications such as statistical tables of the banks, trend and progress reports of banks and handbook of Indian Economy, database of Indian Bank Association, centre for monitoring

Indian Economy (CMIE) prowess database. The secondary data has been collected on the five variables as liquidity, profitability, efficiency, asset quality and capital adequacy ratio, which has been identified from the literature review. The secondary data variables have been explained in the following section-

D) Liquidity

Liquidity for a bank means the ability of the bank to meet its financial commitments as per the due date. In banking, liquidity means the needs of the depositors of funds in the banks, who want to withdraw funds from their accounts, will be met on time and the borrowers who want to borrow funds from the bank through credit will also be met on time by the banks. Liquidity can also be measured in terms of debt capacity or borrowing capacity of a bank to meet its short-term demands for the funds. Banks usually do the function of lending, financing and investing in reasonably illiquid assets, but banks usually gives loans against short term liabilities [9]. Thus one of the main challenges before a bank is to maintain the liquidity of the bank under all reasonable conditions. Three ratios have been used to measure the liquidity in the banks: Consumer & Short term funds to Total Assets, Credit Deposit Ratio and Total Loans to total asset ratio.

- **Consumer & Short term funds to Total Assets:**

This ratio is a measure of liquidity of the bank that consists of current deposit, saving deposit and term deposit. The ratio shows the proportion of the total assets that have been financed through current liabilities i.e. current deposit, saving deposit and term deposits. A high ratio would indicate that bank may not face any problem of liquidity while paying of its short term debts. Consumer & short term funds are cheaper sources of funds for a bank, because a bank pays very less interest or even no interest on consumer & short terms funds [10].

Consumer & Short Term Funds to Total Assets Ratio= (Savings + Current + Term Deposits)/Total Assets

- **Credit Deposit Ratio:**

Credit deposit ratio is the proportion of loans generated by the total deposits of the bank in a particular year. Credit deposit ratio is a tool to measure the liquidity of the banks. This ratio indicates the efficiency of the banks in generating business from the amount borrowed from the customer. A high credit deposit ratio indicates that the bank has more amounts of liquid cash in order to meet the need of clients' cash withdrawals. Thus bank may not be in a position to face liquidity crunch [11].

Credit Deposit Ratio = Credit / Deposits

Where the Credit; Type-wise (Bills purchased and discounted + Cash credits, overdrafts & loans + Term loans)

Security-wise (Secured by tangible assets + Covered by Bank/Govt. Guarantees + Unsecured)

Sector-wise (Advances in India (Priority sectors + Public sector + Banks + others) + Advances outside India)

Total Deposits= Type wise (Demand deposits + saving deposits + Term deposits)

Or Location wise (Deposits from branches in India + Deposits from branches outside India)

- Total Loans to total asset ratio:

It is a measure of loan intensity. The ratio indicates that what percentage of the total assets of the bank is occupied in loans in a particular year. Here loans includes both inside and outside India, secured by tangible assets, term loans, cash credits, overdrafts, secured by bank/government securities or unsecured, bills purchased and discounted etc. The higher ratio indicates the growing business of the bank; more customers and more interest income. Loans are the main source of revenue for any bank. By providing more loans the income of the bank get increased by the way of more interest on loans provided by the bank to its customer and interest income is the main source of the bank's revenue which directly affect the profits of the bank [12].

Total Loans to Total Assets = Total Loans/Total Assets

II) Profitability:

Profitability can be defined as the ability of a bank to generate earnings against its total expenses and other relevant costs that incurred during a particular time period. Three ratios have been used to measure the profitability of the banks: Interest Income to Total Asset Ratio, Non interest Income to Total Asset Ratio and Net Interest margin ratio.

Interest Income to Total Asset Ratio:

Interest Income to Total Asset Ratio is calculated by dividing the total interest income of the bank by the total assets of the bank. This ratio indicates that how much a bank earns by making maximum utilization of its total assets from its ordinary business of lending and borrowings. Interest income can be defined as the income earned by the bank by doing the normal banking activities like accepting deposits, lending funds to the customers and borrowing funds from the customers, making investments in the different securities etc. The higher interest income means greater

contribution to the revenue thus higher profits of the bank and higher profitability while a lower interest income means fewer profits of the banks and lesser profitability [13].

Interest income can be computed by adding the following incomes of the banks; interest/discounts on advances/bills, interest on balances with RBI, income on investments, interest on balances with other interbank funds and others.

Interest Income to Total Asset = Interest Income/Total Assets

Non interest Income to Total Asset Ratio:

It is measured as the total non interest income of the bank divided by the total assets. This ratio is a measure of bank diversification into non-traditional activities. The Non interest Income is the income earned by the bank by doing the activities other than lending or borrowing of funds, and traditional banking activities of the bank. These activities are also called the fee based activities. With the increase in the competition in the banking industry, banks are moving towards the diversification of their activities to capture the market by providing the different financial products according to the need of the customer. Non interest income of the bank shows the diversification activities of the banks. Increasing trend of non interest income shows that the banks are doing well in other than banking activities (Fee based services). And in this competitive era it is need of every bank to involve itself into activities other than lending and borrowing funds, to earn the income and beat the competition. Non interest income of the banks not only the sign of better performance but also a symbol of increasing technology and development of the bank by widening its services, and product portfolio. It is symbol of overall development of a bank and the strength of the banks to face competition in the market [14].

Non Interest Income = (Commission, exchange and brokerage + Net profit (loss) on sale of investments + Net profit (loss) on revaluation of investments + Net profit (loss) on sale of land and other assets + Net profit (loss) on exchange transactions + Miscellaneous income).

Non interest Income to Total Asset = Non interest Income/Total Assets

Net interest margin:

Net interest margin can be calculated as the spread divided by the total assets. Spread is the term used as the difference between the values of total interest earned and total interest expended by the bank for performing lending and borrowing activities and traditional banking activities. Net interest margin is one of the important indicator of the performance and profitability of the banks having a direct relationship with the net profits of the banks. Net interest margin is used as a performance indicator to examine

whether the investment decisions of a bank were successful or not, in the scenario of a particular debt situations. Negative value of the net interest margin indicates that the bank did not make an optimum decision, because the expenses incurred by the bank on interest were greater than the amounts of returns generated by the bank on its investments [15].

Net interest margin ratio is used as an actual intermediary measure while measuring the performance of banks', as it examines the bank's ability in acquiring lower cost funds and investing those funds at a reasonably higher interest. Net interest margin have a positive relationship with the profitability of the bank. Banks with higher net interest margin shows the better performance. But the higher net interest margin also shows that there is a lack of competition in the banking industry. In the developed countries the net interest margin is less than the developing countries. Because in the developed countries, there is a greater degree of competition and thus the net interest margin of the banks in developed countries is less [16].

Net Interest Margin = $(\text{Interest Earned} - \text{Interest Expended}) / \text{Total Assets}$

III) Efficiency:

Efficiency can be defined as how efficiently an organization makes use of its assets and liabilities within an organisation. In the environment where interest rates charged by the banks are volatile in nature, demands of the customers are increasing day by day, financial inclusion is becoming the first priority of the banks, human capital is becoming more competitive, banks are facing restrictions in lending in its own funds; it is absolutely essential that the banks should operate and utilise their resources efficiently as well as effectively. Hence, it is also important to evaluate the performance of a bank from the aspect of efficiency, how efficient a bank is in utilising its human, technological and financial resources. Therefore efficiency has been selected as a major criterion for measuring the performance of banks. Human capital efficiency ratio is used to measure the efficiency of bank in using its human resources; Structural capital efficiency ratio is used to measure the efficiency of the bank in making use of its technological resources while capital employed efficiency ratio is used to measure the efficiency of the bank in utilising its financial resources [17].

Human Capital Efficiency (HCE):

Human Capital Efficiency ratio is the ratio of value added to human capital. This ratio displays the value added by the every unit of money spend on the human resources of the banks in the form of compensation and development expenses. This ratio is an indicator of the performance of the employees. Higher ratio shows the better performance of the banks.

$$\text{HCE} = \text{Value Added} / \text{Human Capital (VA/HC)}$$

Human Capital (HC): Human capital has been calculated as sum of all the expenses incurred on salary/compensation and training/development of employees.

Value added (VA): Value Added can be defined as the difference between the value of output and input of an organisation where; output is the total value of all income and revenue earned by an organization during a particular financial year, proceed from the trade of goods or services. Input is the value of the total cost that is incurred for the purchase of inputs required for the operation and continuation of the business activities by the organization. Human capital value is considered as investment, not the expenditure, therefore the value of inputs of the organisation is calculated by adding the amount of human capital [18].

Structural Capital Efficiency: Structural Capital Efficiency ratio is the ratio of structural capital to value added of the bank. This form of capital is not an independent size of human capital. The value of structure capital is dependent on the value added and is calculated as areverse proportion to human capital. This means that the larger the proportion of human capital in the value added, the lesser the proportion of structure capital will be [19].

Structural Capital: Structural capital can be seen as the capital investment in creation of the supportive infrastructure in the organisation, development of various processes and databases of the organization that facilitate human capital to operate. Structural capital includes the value of capital investments made in the form of traditional things as buildings, patents, trademarks hardware, software, and processes. In addition to this, structural capital also includes the investments made to increase the value of organization's image, proprietary databases and organization's information system [20].

$$\text{Structural Capital} = \text{Value Added} - \text{Human Capital}$$

$$\text{SCE} = \text{SC/VA}$$

Where SCE = Structural capital Efficiency, SC = Structural capital, VA = Value added.

Capital Employed Efficiency: Capital Employed Efficiency (CEE) ratio is used to measure the efficiency of the bank in making use of its total capital employed, which includes net worth of the firms that represents the tangible capital and financial capital of the bank.

$$\text{CEE} = \text{VA/CE}$$

Where CEE = Capital Employed Efficiency, VA = Value added and CE = Capital employed.

IV) Asset Quality:

Assets are those items of a balance sheet which are shown to the left-hand side of the balance sheet. Asset quality of the bank is the most important variable of a bank to be considered by the managers of the bank. Asset quality of the bank shows the quality of the banks' loans both short term and long term. Loan quality and asset quality are two terms which are basically used interchangeably and have the same meaning. Good quality loans of bank includes government bonds and T-bills, whereas corporate credits to low credit score firms and junk bonds etc. are considered as bad quality loans. A bad quality loan can be defined as a loan whose probability of being a non-performing loan with no interest and principal payment in future is higher. In the current study mainly three ratios have been used for measuring the asset quality of the banks such as; Net non-performing asset to net advances ratio, Gross non-performing asset to gross advances ratio and Loan loss provisions to total loans ratio. Non performing asset can be defined as a loan given by the bank on which bank is not getting any interest or principal payments. The usual criteria for classifying a commercial loan of the bank as a non performing asset of the bank is when a commercial loan of the bank is overdue for more than more than 90 days. The criteria for classifying a consumer loan of the bank as a nonperforming asset of the bank is when a consumer loan of the bank is overdue for more than more than 180 days [21].

Loan Loss Provisions to Total Loans:

Loan loss provisions to total loans ratio indicates the amount written off from the net profits of the bank as a provision for the loan loss reserves to the total loans of the bank. Loan loss provisions to total loans ratio shows the quality of the loan portfolio of the bank. Loan portfolio is measured to know the credit risk of the bank. A high ratio of loan loss provisions to total loans gives a signal of a poor quality of loans and thus poor asset quality of the bank. Therefore a higher credit risk can be estimated to the bank's loan portfolio.

Higher ratio of loan loss provisions to total loans indicates the lower profitability of the bank, because the bad loans erode the bank profitability. As loans are the major sources of the banks business if a bank have to keep more loan loss provisions it means most of its debts are bad and which is a signal of the poor credit management of the bank that will result into lower profitability of the banks. Higher unpaid loans also increase the cost of credit management of the bank, in the form of litigation cost, collection cost and the opportunities cost of the funds which are not been paid by the loan holders [22].

Loan loss provisions to total loans = Loan Loss reserves/provisions/Total Loans

V) Capital Adequacy Ratio:

Capital adequacy ratio shows the capital strength of the bank. CAR is a signal of soundness of the financial position of the bank. This ratio shows the bank's ability to face the worst period by paying its debts from its capital in case of huge Nonperforming assets, and less chances of the bank's financial distress. This ratio is a parameter for the protection of fund depositors of a bank. Capital adequacy ratio also helps in promoting the stability and efficiency of economic systems around the world. Tier 1 and Tier 2 Capital are the two main compositions of a bank's capital. The primary measure of the financial strength of a bank from the view point of regulatory authorities is the Tier 1 capital of the bank. Tier 1 capital of bank includes core capital of the bank such as, common stock and disclosed reserves (or retained earnings). Tier 1 capital of the bank can also include the non-redeemable and non-cumulative preferred stock. Tier 2 capital of the bank represents "supplementary capital" of the bank. Tier 2 capital of the bank includes mainly, revaluation reserves, undisclosed reserves, hybrid (debt/equity) capital instruments, general loan-loss reserves, and subordinated debt. Tier one capital is that capital of the bank which can absorb the losses of the bank without causing a bank to stop its banking operations. Tier two capital is that capital of the bank which can be used to absorb losses at the time of winding-up of banking business and thus this type of capital provides a smaller degree of safeguard to depositors [23].

Capital Adequacy Ratio = Capital (Tier 1 and Tier 2)/Risk Weighted Assets

Table 1: Variables used for the secondary study

Serial No	Variable	Formula	Description	Expected Relationship with Performance
1	Liquidity (LQ)	Mean value of L1 + L2 + L3	L1 = Consumer & Short term funds to Total Assets, L2 = Credit Deposit Ratio L3 = Total Loans to Total Assets	Positive
2	Profitability (PR)	Mean value of P1 + P2 + P3	P1 = Interest income to total asset ratio, P2 = Noninterest income to total asset ratio, P3 = Net interest margin (NIM)	Positive
3	Efficiency (EFF)	Mean value of E1 + E2 + E3	E1 = Human capital efficiency (HCE) ratio E2 = Structural capital efficiency (SCE) ratio E3 = Capital employed efficiency	Positive

4	Asset Quality (AQ)	Mean value of A1 + A2 + A3	A1 = Net non-performing asset to net advances A2 = Gross non-performing asset to gross advances A3 = Loan loss provisions to total loans	Negative
5	Capital Adequacy Ratio (CAR)	CAR = Capital (Tier I and Tier II) / Risk Weighted Assets	Capital Tier I = Equity Capital and Free reserves. Capital Tier II = Debts	Positive

4. POPULATION AND SAMPLING

The secondary data has been collected for three years from the period 2011-12 to 2013-14. Since the secondary data has been collected on financial indicators of commercial banks, hence all the commercial banks which are functioning in India during the period 2011-12 to 2013-14 are the population of the study.

There are four types of commercial banks which are operating in India; public sector banks (Nationalised banks plus State bank of India and its associates), private sector banks (Old private sector banks and new private sector banks), foreign banks and regional rural banks (RRB). Out of these only private, public and foreign banks have been taken in the study. The RRBs have been excluded from the study because regional rural banks were mainly established for the purpose of development of a specific region and their branches are restricted to those regions only. The RRBs have only 14 percent of total number of banks offices in India as on 31st March 2014. RRBs are established by the government to provide rural finance to agricultural, agri-business activities and other micro level businesses for the development of rural economy. The Regional Rural Banks are sponsored by any commercial bank who contributes 50 percent of the initial capital and trained, experienced staff to manage it for a few years. Thus the regional rural banks are not comparable with the commercial banks in terms of size, scope, business and products/services offered by the banks. Hence RRBs are excluded from the study especially when we are making a comparative analysis of overall performance of Indian commercial banks which are; public sector banks, private banks and foreign banks functioning in India. Excluding the regional rural banks there were total 87 scheduled commercial banks operating as on 31st March 2014. As it was not possible to include all the 87 commercial banks in the study, a sample of 30 banks which is 35 percent of the population has been taken. Sample of 30 banks consists of 15 public sector banks, 10 private sector banks and 5 foreign banks. The proportion of public, private and foreign banks in the total sample of 30 banks is based on the contribution of assets of these three types

of banks in the total assets of the Indian banking industry as on 31st March 2014. Among each group of public, private and foreign banks, banks have been randomly selected by using random number method. The group wise list of 30 banks used in the study is shown in table 2.

Table 2: Banks Surveyed in the Study

Sl. No.	Name of the Bank	Bank Code	Bank Group
1	State Bank of India	SBI	Public Sector Banks
2	Allahabad Bank	ALB	
3	Bank of Baroda	BOB	
4	Bank of India	BOI	
5	Canara Bank	CB	
6	Central Bank of India	CBI	
7	Corporation Bank	COB	
8	Indian Bank	IB	
9	Industrial Development Bank of India	IDBI	
10	Indian Overseas Bank	IOB	
11	Oriental Bank of Commerce	OBC	
12	Punjab National Bank	PNB	
13	Syndicate Bank	SB	
14	United Bank of India	UBOI	
15	Union Commercial Bank	UCO	
16	Axis Bank Axis	AXIS	Private Sector Banks
17	Federal Bank	FB	
18	Housing Development Finance Corporation	HDFC	
19	Ind. Credit and Investment Corp.of India	ICICI	
20	ING Vysya Bank	ING	
21	Jammu & Kashmir Bank	JKB	
22	Kotak Mahindra Bank	KMB	
23	Karnataka Bank	KB	
24	South Indian Bank	SIB	
25	Yes Bank	YES	
26	CITI Bank	CITI	Foreign Banks
27	Deutsche Bank	DEU	
28	Hongkong and Shanghai Banking Corp.Ltd	HSBC	
29	Royal Bank of Scotland	RBS	
30	Standard Chartered Bank	SCH	

5. NULL HYPOTHESIS USED IN THE STUDY

Null Hypothesis 1 (H₀1): There is no relationship between liquidity and performance of banks.

Null Hypothesis 2 (H₀2): There is no relationship between profitability and performance of banks.

Null Hypothesis 3 (H₀3): There is no relationship between efficiency and performance of banks.

Null Hypothesis 4 (H₀4): There is no relationship between asset quality and performance of banks.

Null Hypothesis 5 (H₀5): There is no relationship between capital adequacy ratio and performance of banks.

6. DATA ANALYSIS

This section deals with the analysis of financial indicators to find out the relationship between these indicators with the performance of the banks. The data have been collected for all the 30 banks in the sample, for the period 2011-14 on the five parameters such as; liquidity, profitability, efficiency, asset quality and capital adequacy. The multiple regression model used in the study is as follows:

$$Y = a + b*LQ + c*PR + d*EFF + e*AQ + f*CA$$

Where;

Y (Dependent Variable) = Return on Assets (ROA)

Independent Variables:

LQ = Liquidity,

PR = Profitability,

EFF = Efficiency,

AQ = Asset Quality,

CA = Capital Adequacy.

a = constant and b, c, d, e and f are regression coefficients.

Table 3: Regression Result

R	R Square	Adjusted R Square	Std. Error of the Estimate
.884	.781	.731	.2136525

Table 4: Regression Coefficients

R		Beta	Std. Error	t-value
1	(Constant)	-1.603	.474	-3.380
	LQ	.021	.011	1.962**
	PR	.245	.116	2.1060*
	EFF	.119	.139	0.854
	AQ	-.356	.101	-3.537*
	CA	.082	.023	3.532*

* 1 percent level of significance.

**5 percent level of significance.

Table 5: ANOVA Results

Model	Sum of Squares	Df	Mean Square	F	Sig.	Durbin Watson Test
1 Regression	3.511	5	.702	6.567	.001	2.265
Residual	2.566	24	.107			
Total	6.077	29				

The ANOVA results (Table 5) depicts that a significant model emerged, $F(5, 24) = 6.567, p < 0.01$ at 1 percent level of significance. Table 1 shows the regression results R Square is 0.781, which shows that the all the five independent variables of regression model can explain 57.8 percent of variation in the value of dependent variable i.e. ROA (Return on Asset). R square is 0.781 which is a significant value. It shows that 78.1 percent of the performance of the banks is explained by the five independent variables. The rest of the 21.9 percent can be attributed to so many other factors. The regression results (table 2) indicates that Liquidity (LQ), Profitability (PR), Efficiency (EFF) and Capital Adequacy (CA) are positively related to Return on asset (ROA) while Asset Quality (AQ) is negatively related to Return on asset (ROA). Most of the regression coefficients are statistical significant at 1 percent level of significance. Durbin Watson Test is used to test the presence of auto correlation among the variables. It is a test that proves that the residuals from a linear regression or multiple regressions are independent. The calculated value of Durbin Watson test should always lies between a range of zero and four. If the value of Durbin-Watson statistic is significantly less than two, there is indication of a positive serial correlation among the variables. As a rough rule of thumb, if the value of Durbin-Watson statistic is less than one, then there can be cause for distress. Small

values of Durbin-Watson statistic specify the consecutive error terms are, on average, closely related to each other in values, or positively correlated to each other. In the table 3 it is found that the value of Durbin-Watson test is 2.265 which show the absence of auto correlation among the variables used in the multiple regression analysis.

Null Hypothesis 1 (H01): There is no relationship between liquidity and performance of banks.

Liquidity variable is expected to be positively related to the Return on asset. As per the regression results it comes true that liquidity and Return on asset has a positive relationship. The beta value of liquidity variable is 0.021, which shows that liquidity has positive and significant relationship between return on asset and liquidity. Thus the Null Hypothesis 1 (H01) stands to be rejected that there is no relationship between liquidity and performance of banks.

Null Hypothesis 2 (H02): There is no relationship between profitability and performance of banks.

Profitability variable is expected to be positively related to the Return on assets (ROA). As per the regression results it comes true that profitability and Return on asset has a positive relationship. The beta value of profitability variable is 0.245, which shows that profitability has a positive and significant relationship with the return on asset. Thus the Null Hypothesis 2 (H02) stands to be rejected that there is no relationship between profitability and performance of banks.

Null Hypothesis 3 (H03): There is no relationship between efficiency and performance of banks.

Efficiency variable is expected to be positively related to the Return on asset (ROA). As per the regression results it comes true that efficiency and return on asset has a positive relationship. The beta value of the efficiency variable is 0.119, which shows that efficiency variable has a positive but insignificant relationship with return on asset. Thus the Null Hypothesis 3 (H03) stands to be rejected that there is no relationship between efficiency and performance of banks. Efficiency indicator consist of three ratios human capital efficiency ratio (HCE), capital employed efficiency ratio (CEE) and structural capital efficiency ratio (SCE). Literature has proved that out of these three ratios only HCE has been found positively and significantly related with the performance of banks while other two are positively related with the performance of banks but not significantly.

Null Hypothesis 4 (H04): There is no relationship between asset quality and performance of banks.

Asset Quality variable is expected to be negatively related to the

performance of the banks, which is measured using dependent variable Return on Asset (ROA). As per regression results it comes true that asset quality and return on asset has a negative and significant relationship. The beta value of asset quality variable is -0.356, which shows that asset quality variable is negatively related to the return on asset. Thus the Null Hypothesis 4 (H04) stands to be rejected that there is no relationship between asset quality variable and performance of banks.

Null Hypothesis 5 (H05): There is no relationship between capital adequacy ratio and performance of banks.

Capital Adequacy ratio is expected to be positively related to the performance of the commercial banks, which is measured using dependent variable Return on Asset (ROA). As per the regression results it comes true that capital adequacy and Return on asset has a positive and significant relationship. The beta value of capital adequacy variable is 0.082. Thus the Null Hypothesis 5 (H05) stands to be rejected that there is no relationship between capital adequacy ratio and performance of banks.

Overall it can be interpreted from the regression analysis that Return on Asset (ROA) which is used as proxy variable for measuring the financial performance of the bank is positively related to the liquidity, profitability, efficiency and capital adequacy while ROA is negatively related with to the asset quality indicator.

7. CONCLUSION

It can be concluded from the study that ROA is the best indicator of performance of banks and used by most of the analyst as a proxy variable for performance of banks. It is also found from the study that ROA is positively related to efficiency, liquidity, profitability and capital adequacy ratio while ROA is negatively related with asset quality variable.

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