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FINANCIAL STRENGTH OF SELECT PUBLIC AND PRIVATE SECTOR BANKS IN INDIA: A CAMEL MODEL APPROACH

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ABSTRACT

The economic development and financial growth of a country critically depends upon the financial strength of its banks. The Indian banking sector has been the backbone of the Indian economy over the past few decades, helping it to survive from various national and worldwide economic shocks and meltdowns. The objectives of the present study are to assess the financial strength of select public and private sector banks in India by using CAMEL model and to measure the comparative analysis of select public and private sector banks in India by using Composite Ranking Method. The period of study is covered for 5 years i.e., from 2012-13 to 2016-17. It is found that capital adequacy parameter of HDFC Bank is at the top position, while that of the ICICI Bank is at the lowest rank. While the asset quality parameter of Axis Bank is at the top rank, SBI held the lowest rank in this regard. ICICI Bank, Bank of India and SBI need to improve their position with regard to Capital adequacy and asset quality. While SBI and Bank of India need to improve their position with regard to Management Efficiency and Earning Quality Axis Bank is needed to improve its position of Liquidity. It is concluded that the Public Sector Banks and Private Sector Banks to adopt all such measures which can be applied to reduce the value of NPA in order to increase the profitability and efficiency.

Keywords: Capital Adequacy, Asset Quality, Management Efficiency, Earnings and Liquidity

INTRODUCTION

Banking sector is one of the fastest growing sectors in India. The economic development and financial growth of a country critically depends upon the financial strength of its banks. The Indian banking sector has been the backbone of the Indian economy over the past few decades, helping it to survive from various national and worldwide economic shocks and meltdowns.

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Banking industry is one of the healthiest performers in the world facing tremendous competition, experiencing significant growth, efficiency, profitability and stability, especially in the recent past. The main goal of banks today is to maintain stability and make sure that they are impervious to external shocks while at the same time trying to be internally sound and sensible. In the light of the banking crisis in recent years world-wide, CAMEL (capital adequacy, asset quality, management quality, earnings and liquidity) is a useful tool to examine the safety and soundness of banks, and help mitigate the potential risks which may lead to the failures of the banking industry.

REVIEW OF LITERATURE

Jayanta Kumar Nandi (2013) in her paper entitled “Comparative Performance Analysis of Select Public and Private Sector Banks in India : An Application of CAMEL Model”, has made an attempt to highlight the comparative financial performance of the selected public and private sector banks in India for the period from 2001-02 to 2011-12 and for this purpose financial performance analysis based on ratios under CAMEL methodology and other statistical tools had been applied to assess the overall efficiency and consistency in terms of profitability, interest spread, customer service and satisfaction, cost control, management and NPA and the like. After deciding the model he had chosen top ten public sector and ten private sector banks in India for his study. According to the importance of study each parameter of CAMEL method was given an equal weight. These results in this paper had shown on an average that the Bank of Baroda occupied the top most position followed by ICICI Bank and HDFC Bank. It is observed that Central Bank of India was at the bottom position, followed by Karnataka Bank and UCO Bank. The selected public sector banks performed better than the selected private sector banks in terms of both financial performance and performance consistency.

Sneha S. Shukla (2015) in her paper on “Analyzing Financial Strength of Public and Private Sector Banks: A CAMEL Approach”, analyzed the data to evaluate the performance of financial soundness of various selected public & private sector banks using CAMEL approach. The study was based on secondary data collected from 2009-10 to 2012-13. All the banks were first individually ranked based on the sub-parameters of each parameter. It is concluded that the HDFC Bank and BOB stood at top position in terms of capital adequacy. In terms of asset quality, the HDFC Bank was at the topmost position. Regarding the management quality, HDFC Bank and ICICI Bank were positioned at the top.

Hari Krishna Karri, Kishore Meghani & Bharti Meghani Mishra (2015) have made an attempt to evaluate the comparative financial performance of Bank of Baroda and Punjab National Bank, the study adopted the world-renowned: Capital Adequacy, Asset Quality, Management, Earning Quality and Liquidity (CAMEL) model (with minor modification). The

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period of study covered for five years i.e., from 2010 to 2014. In addition, statistical tools such as arithmetic mean, t-test and SPSS 19 were also used. It is found that the capital adequacy and Tier-I capital ratio of Bank of Baroda and Punjab National Bank were more than that prescribed as per the Basel Accord norms. It is concluded that the two banks were successful in maintaining CRAR at a higher level than the standard norm of 10 per cent. But the Bank of Baroda maintained a high level of CRAR during the study period. It is very good sign for the banks to survive and to expand in future.

STATEMENT OF THE PROBLEM

Evaluating Indian banking sector is not an easy task. There are so many factors, which need to be taken care of while differentiating good banks from the bad ones. Banks are assuming essential and significant responsibility of capital formation due to their inherent nature in the economy. Therefore, the commercial banks should be given more attention than any other type of economic unit in an Indian economy. The CAMEL rating system provides a means to categorize as healthy banks on the basis of their, financial health, financial status and the financially sound banks on the basis of their financial status. The CAMEL rating system, the banks were sustained rating based on the performance in five areas viz., Capital Adequacy (C), Assets Quality (A), Management Efficiency (M), Earnings Quality (E) and Liquidity (L). Therefore, in this study CAMEL rating system has been adopted for measuring the overall financial strength of selected commercial banks.

OBJECTIVES OF THE PRESENT STUDY

The objectives of the present study are as follows:

- To assess the financial strength of select public and private sector banks in India by using CAMEL model.
- To measure the comparative analysis of select public and private sector banks in India by using Composite Ranking Method

RESEARCH METHODOLOGY

The present study is a descriptive in nature and it is based on secondary data. The secondary data have been collected from the annual reports of select public and private sector banks and various publications issued by RBI (Statistical Tables Relating to Banks in India and Report on Trend and Progress of Banking in India). The period of study considered for the present study is 5 years i.e., from 2012-13 to 2016-17.The sample of the study comprises 6 out of 48 banks on the basis of availability of the data, including 27 public and 21 private sector banks in India. Three banks each representing the public and private sector banks were selected for the study. Bank of

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Baroda, Bank of India and State Bank of India (SBI) were selected under the public sector banks. The private sector banks are Axis Bank, Housing Development and Finance Corporation (HDFC) Bank, Industrial Credit and Investment Corporation of India (ICICI) Bank. The performance of the banks was measured through CAMEL Model.

CAMEL MODEL

Capital Adequacy, Asset Quality, Management Efficiency and Liquidity are some of the important elements a CAMEL Model. CAMEL is a ratio-based model for evaluating the performance of banks. The primary objective of the CAMEL model of rating banking institutions is to catch up the comparative performance of various banks. The CAMEL model ratios are explained as follows:

CAPITAL ADEQUACY (C)

The capital adequacy is said to be as one of the important reflectors of the financial strength of a bank. Protecting stakeholder's confidence and preventing its bankruptcy are very essential for a bank to survive. It indicates whether the bank has sufficient capital to bear unexpected losses in the future and bank leverage. To measure the capital adequacy of a bank a sizeable number of ratios such as Capital to Risk-Weighted Assets Ratio, Debt-Equity Ratio and Advances to Assets Ratios are presented below:

i. Capital to Risk-weighted Assets Ratio (CRAR)

Capital Adequacy Ratio (CARs) is a measure of the amount of a bank's core capital expressed as a percentage of its risk-weighted asset and it is also known as "Capital to Risk Weighted Assets Ratio (CRAR)". The higher ratio means banks are stronger and the bank to protect the interest of the investors. The RBI's latest guidelines for commercial banks in India are to maintain a CRAR of 9 per cent.

Capital to Risk-weighted Assets Ratio (CRAR) = (Tier-I + Tier-II)/Risk-Weighted Assets.

Tier-I capital= Shareholders' equity + perpetual non-cumulative preference shares +disclosed reserves + innovative capital instruments.

Tier-II capital= Undisclosed reserves + revaluation reserves of fixed assets & long-term holdings of equity securities + general provisions/general loan-loss reserves + hybrid debt capital instruments + sub-ordinate debt.

ii. Debt-Equity Ratio

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Debt-Equity ratio refers to the degree of leverage of a bank i.e., the amount of total debt in the capital structure. It is calculated by total borrowings divided by debts with shareholders net worth. The higher ratio means less protection for the depositors, creditors and vice-versa.

iii. Advances to Assets Ratio

Advances to assets ratio explain the relationship between total advances to total assets. It is calculated by dividing the total advances with total assets. The higher ratio is preferred as compared to lower the one. The various ratios measuring capital adequacy of sample banks are presented in table 1:

Table 1: Capital Adequacy Ratios of select sample Banks from 2012-13 to 2016-17

Sl. No.	Name of the Bank	2013	2014	2015	2016	2017	Mean	Rank
Capital Adequacy Ratio								
1	State Bank of India	12.92	12.96	12.00	13.12	13.11	**12.82**	**4**
2	Bank of Baroda	13.30	12.28	12.60	13.17	12.24	**12.72**	**5**
3	Bank of India	11.02	9.98	10.73	12.01	12.14	**11.18**	**6**
4	Axis Bank	17.00	16.07	15.09	15.29	14.95	**15.68**	**3**
5	HDFC Bank	16.80	16.07	16.79	15.53	14.55	**15.95**	**2**
6	ICICI Bank	18.74	17.70	17.02	16.64	17.39	**17.50**	**1**
Debt-Equity Ratio								
1	State Bank of India	1.71	1.55	1.60	2.24	1.69	**1.76**	**5**
2	Bank of Baroda	0.83	1.02	0.89	0.83	0.76	**0.87**	**2**
3	Bank of India	1.48	1.62	1.27	1.58	1.21	**1.43**	**3**
4	Axis Bank	1.33	1.32	1.79	1.87	1.88	**1.64**	**4**
5	HDFC Bank	0.91	0.91	0.73	0.73	0.83	**0.82**	**1**
6	ICICI Bank	2.18	2.11	2.14	1.95	1.48	**1.97**	**6**
Advances/Assets Ratio								
1	State Bank of India	66.76	67.48	63.48	62.08	58.06	**63.57**	**1**
2	Bank of Baroda	59.98	60.20	59.87	57.16	55.16	**58.47**	**5**
3	Bank of India	63.93	64.68	64.98	58.89	58.51	**62.20**	**2**
4	Axis Bank	57.84	60.03	60.85	62.76	62.03	**60.70**	**4**
5	HDFC Bank	59.88	61.64	61.90	62.72	64.20	**62.07**	**3**
6	ICICI Bank	54.07	56.96	59.98	60.40	60.15	**58.31**	**6**

Source: Annual Reports of sample banks from 2012-13 to 2016-17

Table 1 reveals that the select sample banks have maintained higher CAR than the prescribed level, it is found that ICICI Bank has secured the top position with highest average CAR of 17.50

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per cent, followed by HDFC Bank (15.95 per cent), Axis Bank (15.68 per cent), SBI (12.82 per cent) and Bank of Baroda (12.72 per cent). Bank of India was at the bottom most position with a least average CAR of 11.18 per cent. In terms of Debt-Equity ratio of HDFC Bank is at the top position with least average of 0.82 per cent, followed by Bank of Baroda (0.87 per cent), Bank of India (1.43 per cent), Axis Bank (1.64 per cent), SBI (1.76 per cent) and highest average Debt-Equity ratio of ICICI Bank was 1.97 per cent. In case of Advances/Assets ratio of SBI was at the first position with highest average of 63.57 per cent, followed by Bank of India (62.20 per cent), HDFC Bank (62.07 per cent), Axis Bank (60.70 per cent) and Bank of Baroda (58.47 per cent). ICICI Bank was at the bottom most position with least average of 58.31 per cent.

Table 2: Composite Capital Adequacy Ratios

Name of the Bank	Capital Adequacy Ratio		Debt-Equity Ratio		Advances/Assets Ratio		Group Rank	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
State Bank of India	12.82	**4**	1.76	**5**	63.57	**1**	**3.33**	**2**
Bank of Baroda	12.72	**5**	0.87	**2**	58.47	**5**	**4.00**	**5**
Bank of India	11.18	**6**	1.43	**3**	62.20	**2**	**3.67**	**3.5**
Axis Bank	15.68	**3**	1.64	**4**	60.70	**4**	**3.67**	**3.5**
HDFC Bank	15.95	**2**	0.82	**1**	62.07	**3**	**2.00**	**1**
ICICI Bank	17.50	**1**	1.97	**6**	58.31	**6**	**4.33**	**6**

Table 2 depicts the composite Capital Adequacy ratios on the basis of group averages of three sub-parameters of CAR. The HDFC Bank was at the top position with the group average of 2.00, followed by State Bank of India (3.33), Bank of India (3.67), Axis Bank (3.67) and Bank of Baroda (4.00). ICICI Bank stood at the last position (4.33) due to its poor performance in Debt-Equity ratio and Advances to Assets ratio.

ASSETS QUALITY (A)

The quality of assets also plays a crucial role in determining the financial strength of a bank. The following ratios such as Net NPAs to Net Advances, Priority Sector Advances to Total Advances and Secured Advances to Total Advances are required to assess the quality of assets:

i. Net NPAs to Net Advances Ratio

It is the most standard measure of assets quality measuring the net non-performing assets to net advances. High net NPA ratio indicates the high quantity of risky assets in the Banks for which no provision is made.

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ii. Priority Sector Advances to Total Advances

It is calculated by dividing total priority sector advances to total advances. The priority sector advances includes agriculture, MSMEs, export credit, advances to weaker sections, housing loans, education loans and differential rate of interest scheme advances.

iii. Secured Advances to Total Advances

This ratio is calculated by dividing secured advances to total advances. Banks try to make secured advances as it reduces their risks. The assets quality ratios of select sample banks from 2012-13 to 2016-17 are presented in table 3;

Table 3: Assets Quality ratios of select sample Banks from 2012-13 to 2016-17

Sl. No.	Name of the Bank	2013	2014	2015	2016	2017	Mean	Rank
Net NPAs to Net Advances								
1	State Bank of India	2.10	2.57	2.12	3.81	3.71	**2.86**	**4**
2	Bank of Baroda	1.28	1.52	1.89	5.06	4.72	**2.89**	**5**
3	Bank of India	2.06	2.00	3.36	7.79	6.90	**4.42**	**6**
4	Axis Bank	0.36	0.44	0.46	0.73	2.26	**0.85**	**2**
5	HDFC Bank	0.20	0.27	0.25	0.28	0.33	**0.27**	**1**
6	ICICI Bank	0.77	0.97	1.61	2.98	5.43	**2.35**	**3**
Priority Sector Advances to Total Advances								
1	State Bank of India	25.28	23.21	22.23	22.45	21.72	**22.98**	**5**
2	Bank of Baroda	24.21	21.20	22.31	24.02	27.16	**23.78**	**3**
3	Bank of India	22.45	20.88	21.16	25.57	26.05	**23.22**	**4**
4	Axis Bank	24.62	27.28	24.82	24.09	25.16	**25.19**	**2**
5	HDFC Bank	32.01	29.58	29.03	30.52	29.31	**30.09**	**1**
6	ICICI Bank	20.60	19.06	19.67	21.24	22.95	**20.70**	**6**
Secured Advances to Total Advances								
1	State Bank of India	82.64	83.55	80.07	78.43	81.99	**81.34**	**4**
2	Bank of Baroda	87.28	86.29	87.47	88.22	84.27	**86.71**	**1**
3	Bank of India	85.92	82.11	85.01	84.09	81.29	**83.68**	**3**
4	Axis Bank	82.84	83.43	79.27	76.37	77.86	**79.95**	**5**
5	HDFC Bank	76.24	77.55	76.58	76.90	76.03	**76.66**	**6**
6	ICICI Bank	85.91	85.62	86.26	82.71	79.17	**83.93**	**2**

Source : Annual Reports of sample banks from 2012-13 to 2016-17

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Table 3 shows that HDFC Bank was at the top position with an average Net NPAs to Net Advances of 0.27 per cent, followed by Axis Bank (0.85 per cent), ICICI Bank (2.35 per cent), SBI (2.86 per cent) and Bank of Baroda (2.89 per cent). Bank of India was at the last position with an average of 4.42 per cent. In case of priority sector Advances to Total Advances it is again HDFC Bank was at the top position with highest average of 30.09 per cent, followed by Axis Bank (25.19 per cent), Bank of Baroda (23.78 per cent), Bank of India (23.22 per cent) and SBI (22.98 per cent). ICICI Bank was at the last position with an average of 20.70 per cent. In terms of Secured Advances to Total Advances, Bank of Baroda was at the first position with an average of 86.71 per cent, followed by ICICI Bank (83.93 per cent), Bank of India (83.68 per cent), SBI (81.34 per cent) and Axis Bank (79.95 per cent) while HDFC Bank stood at the last position with an average of 76.66 per cent.

Table 4: Composite of Asset Quality

Name of the Bank	**Net NPAs to Net Advances**		**Priority Sector Advances to Total Advances**		**Secured Advances to Total Advances**		**Group Rank**	
	Mean	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**
State Bank of India	2.86	**4**	22.98	**5**	81.34	**4**	**4.33**	**5.5**
Bank of Baroda	2.89	**5**	23.78	**3**	86.71	**1**	**3.00**	**2.5**
Bank of India	4.42	**6**	23.22	**4**	83.68	**3**	**4.33**	**5.5**
Axis Bank	0.85	**2**	25.19	**2**	79.95	**5**	**3.00**	**2.5**
HDFC Bank	0.27	**1**	30.09	**1**	76.66	**6**	**2.67**	**1**
ICICI Bank	2.35	**3**	20.70	**6**	83.93	**2**	**3.67**	**4**

Table 4 reveals the Composite of Asset Quality on the basis of group averages of sub-parameters of asset quality. HDFC Bank was at the top position with a group average of 2.67, followed by Axis Bank (3.00), Bank of Baroda (3.00) and ICICI Bank (3.67). Its again Bank of India and SBI which were positioned at last (4.33).

MANAGEMENT EFFICIENCY (M)

Management efficiency is another important component of CAMEL Model. Management is the most important ingredient that ensures the sound functioning of banks. The Credit Deposit Ratio, Business per Employee and Profit per Employee are used to evaluate management efficiency of the bank. The following are the important ratios of management efficiency;

i. Credit Deposit (CD) Ratio

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The CD ratio indicates the total advances to total deposits. It shows the management's aggressiveness to improve income by higher lending operations. It indicates the use of bank resources by way of loans and advances. The ratio of 60 per cent is considered as a standard norm for banks. If the CD ratio is higher, a larger percentage of deposits mobilized are lent to different sectors and it will lead to an improvement in profitability of banks.

ii. Business Per Employee

This tool measures the efficiency of all the employees of a bank in generating business for the bank. It is arrived at by dividing the total business by total number of employees. The total business means the sum of total deposits and total advances in a particular year.

iii. Profit Per Employee

The profit per employee is arrived at by dividing the profit after tax by the total number of employees of a bank. The higher the ratio, the higher is the efficiency of the management and vice-versa. The Management Efficiency Ratios of select sample Banks from 2012-13 to 2016-17 are depicted in Table 5;

Table 5: Management Efficiency Ratios of select sample Banks from 2012-13 to 2016-17

Sl. No.	Name of the Bank	2013	2014	2015	2016	2017	Mean	Rank
Credit / Deposit Ratio								
1	State Bank of India	86.94	86.76	82.45	84.57	76.83	**83.51**	**3**
2	Bank of Baroda	69.25	69.79	69.32	66.85	63.70	**67.78**	**6**
3	Bank of India	75.78	77.73	75.58	70.02	67.86	**73.39**	**5**
4	Axis Bank	77.97	81.89	87.17	94.64	90.03	**86.34**	**2**
5	HDFC Bank	80.92	82.49	81.08	85.02	86.16	**83.13**	**4**
6	ICICI Bank	99.19	102.05	107.18	103.28	94.73	**101.29**	**1**
Business Per Employee (Rs. in Lakh)								
1	State Bank of India	944	1064	1234	1411	1624	**1255.40**	**4**
2	Bank of Baroda	1689	1865	1889	1680	1749	**1774.40**	**2**
3	Bank of India	1582	1963	2069	1796	1940	**1870.00**	**1**
4	Axis Bank	1215	1230	1371	1484	1400	**1340.00**	**3**
5	HDFC Bank	750	890	1010	1139	1236	**1005.00**	**5**
6	ICICI Bank	735	747	832	943	989	**849.20**	**6**
Profit Per Employee (Rs. in 000)								
1	State Bank of India	645	485	602	470	511	**542.60**	**4**
2	Bank of Baroda	1039	987	688	-1000	264	**395.60**	**5**

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3	Bank of India	644	628	370	-1220	-320	**20.40**	**6**
4	Axis Bank	1458	1500	1707	1800	1700	**1633.00**	**1**
5	HDFC Bank	1000	1200	1000	1500	1600	**1260.00**	**3**
6	ICICI Bank	1400	1400	1600	1400	1200	**1400.00**	**2**

Source : Annual Reports of sample banks from 2012-13 to 2016-17

Table 5 depicts that the ICICI Bank was at the top most position with an average Credit/Deposit ratio of 101.29 per cent, followed by Axis Bank (86.34 per cent), SBI (83.51 per cent), HDFC Bank (83.13 per cent) and Bank of India (73.39 per cent). Bank of Baroda was at the last position with an average of 67.78 per cent. In terms of business per employee, Bank of India secured the top position with Rs.1870.00 lakh followed by Bank of Baroda (Rs.1774.40 lakh), Axis Bank (Rs.1340.00 lakh), SBI (Rs.1255.40 lakh) and HDFC Bank (Rs.1005.00 lakh). ICICI Bank was at the last position with lowest average of Rs.849.20 lakh. In case of profit per employee, Axis Bank was at the first place with an average of Rs.1633.00 thousand, followed by ICICI Bank (Rs.1400.00 thousand), HDFC Bank (Rs.1260.00 thousand), SBI (Rs.542.60 thousand) and Bank of Baroda (Rs.395.60 thousand). Bank of India was at the bottom position with an average of Rs.20.40 thousand.

Table 6: Composite of Management Efficiency

Name of the Bank	Credit / Deposit Ratio		Business Per Employee		Profit Per Employee		Group Rank	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
State Bank of India	83.51	**3**	1255.40	**4**	542.60	**4**	**3.67**	**3**
Bank of Baroda	67.78	**6**	1774.40	**2**	395.60	**5**	**4.33**	**6**
Bank of India	73.39	**5**	1870.00	**1**	20.40	**6**	**4.00**	**4.5**
Axis Bank	86.34	**2**	1340.00	**3**	1633.00	**1**	**2.00**	**1**
HDFC Bank	83.13	**4**	1005.00	**5**	1260.00	**3**	**4.00**	**4.5**
ICICI Bank	101.29	**1**	849.20	**6**	1400.00	**2**	**3.00**	**2**

Table 6 shows the Composite of Management Efficiency on the basis of group averages of three parameters. Axis Bank was at the top position with group average of 2.00, followed by ICICI Bank (3.00), SBI (3.67), HDFC Bank (4.00) and Bank of India (4.00). Bank of Baroda was at the lowest position with an average of 4.33.

EARNINGS (E)

The Earnings quality is another important parameter which reflects the quality of a bank in terms of attaining profits. Some of the important ratios which measures quality of earnings are non-interest ratio, interest income to total income ratio and return on assets ratios are as follows;

i. Non-Interest Income to Total Income Ratio

This ratio measures the relationship between Non-Interest Income to Total Income. Non-interest income is the income earned by the banks excludes income on advances and deposits with the RBI. A higher ratio of non-interest income to total income indicates the increasing proportion of fee-based income.

ii. Interest Income to Total Income Ratio

This ratio indicates the income from lending operations to total income earned by the bank during the year. It is calculated by dividing interest income by total income multiplied by hundred.

iii. Return on Assets Ratio

This ratio measures the return on assets employed or efficiency in utilization of the assets. It is arrived at by dividing net profit by total assets. A higher ratio indicates better financial productivity and profitability of banks and lower ratio indicates lower productivity of banks. The earning quality positions of sample banks in terms of Non-Interest Income to Total Income, Net Interest Income to Total Assets and Return on Assets ratios are presented in table 7;

Table 7: Earning Ratios of select sample Banks from 2012-13 to 2016-17

Sl. No.	Name of the Bank	2013	2014	2015	2016	2017	Mean	Rank
Non-Interest Income to Total Income								
1	State Bank of India	11.82	11.98	12.90	14.68	16.81	13.64	**4**
2	Bank of Baroda	9.35	10.28	9.29	10.19	13.80	10.58	**5**
3	Bank of India	10.56	10.17	8.88	8.04	14.70	10.47	**6**
4	Axis Bank	19.42	19.46	19.08	18.61	20.79	19.47	**2**
5	HDFC Bank	16.35	16.14	15.66	15.15	15.07	15.67	**3**
6	ICICI Bank	17.24	19.10	19.87	22.51	26.48	21.04	**1**
Interest Income to Total Income								
1	State Bank of India	88.18	88.02	87.10	85.32	83.19	86.36	**3**
2	Bank of Baroda	90.65	89.72	90.71	89.81	86.20	89.42	**2**
3	Bank of India	89.44	89.83	91.12	91.96	85.30	89.53	**1**
4	Axis Bank	80.58	80.54	80.92	81.39	79.21	80.53	**5**

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5	HDFC Bank	83.65	83.86	84.34	84.85	84.93	84.33	**4**
6	ICICI Bank	82.76	80.90	80.13	77.49	73.52	78.96	**6**
Return on Assets								
1	State Bank of India	0.97	0.65	0.68	0.46	0.41	0.63	**4**
2	Bank of Baroda	0.82	0.69	0.48	-0.80	0.20	0.28	**6**
3	Bank of India	0.65	0.51	0.27	0.94	-0.24	0.43	**5**
4	Axis Bank	1.70	1.78	1.83	1.72	0.65	1.54	**3**
5	HDFC Bank	1.90	2.00	2.02	1.89	1.88	1.94	**1**
6	ICICI Bank	1.70	1.78	1.86	1.49	1.35	1.64	**2**

Source : Annual Reports of sample banks from 2012-13 to 2016-17

Table 7 reveals that the ICICI Bank was at the top most position with an average Non-Interest Income to Total Income of 21.04 per cent, followed by Axis Bank (19.47 per cent), HDFC Bank (15.67 per cent), SBI (13.64 per cent) and Bank of Baroda (10.58 per cent). Bank of India was at the bottom position with least average of 10.47 per cent. The ratio of Interest Income to Total Income of Bank of India was highest ranked with an average of 89.53 per cent, followed by Bank of Baroda (89.42 per cent), SBI (86.36 per cent), HDFC Bank (84.33 per cent) and Axis Bank (80.53 per cent). ICICI Bank was at the last place with an average of 78.96 per cent. In case of Return on Assets, HDFC Bank was at the first position with an average of 1.94 per cent, followed by ICICI Bank (1.64 per cent), Axis Bank (1.54 per cent), SBI (0.63 per cent) and Bank of India (0.43 per cent). Bank of Baroda was at the lowest rank with an average of 0.28 per cent.

Table 8: Composite of Earnings

Name of the Bank	**Non-Interest Income to Total Income**		**Interest Income to Total Income**		**Return on Assets**		**Group Rank**	
	Mean	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**
State Bank of India	13.64	**4**	86.36	**3**	0.63	**4**	**3.67**	**4**
Bank of Baroda	10.58	**5**	89.42	**2**	0.28	**6**	**4.33**	**6**
Bank of India	10.47	**6**	89.53	**1**	0.43	**5**	**4.00**	**5**
Axis Bank	19.47	**2**	80.53	**5**	1.54	**3**	**3.33**	**3**
HDFC Bank	15.67	**3**	84.33	**4**	1.94	**1**	**2.67**	**1**
ICICI Bank	21.04	**1**	78.96	**6**	1.64	**2**	**3.00**	**2**

Table 8 depicts the composite of earnings on the basis of group averages. HDFC Bank was at the top position with group average of 2.67, followed by ICICI Bank (3.00), Axis Bank (3.33), SBI (3.67) and Bank of India (4.00). Bank of Baroda was at the lowest position with an average of 4.33.

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LIQUIDITY (L)

Liquidity is another important aspect which reflects the bank's ability to meet its short-term obligations. Some of the important ratios such as Liquidity Assets to Total Assets Ratio, Liquidity Assets to Total Deposits Ratio and Liquid Assets to Demand Deposits ratios are deployed to assess the ability of the bank to convert non-cash into cash. The following are the important liquidity ratios;

i. **Liquid Assets to Total Assets Ratio**

This ratio is arrived by dividing liquid assets by total assets. The proportion of liquid assets to total assets indicates the overall liquidity position of the bank. Liquid Assets includes cash in hand, balance with the RBI, balance with other banks (both in India and abroad), and money at call and short-notice.

ii. **Liquid Assets to Total Deposits Ratio**

The Liquid Assets to Deposits ratio deals the liquidity available to the depositors of a bank. This ratio is calculated by liquid assets divided to total deposits. The total deposits include demand deposits, savings deposits, term deposits and deposits of other financial institutions.

iii. **Liquid Assets to Demand Deposits Ratio**

This ratio measures the ability of a bank to meet the demand from demand deposits in a particular year. It is arrived at by dividing the liquid assets by total demand deposits. The liquidity position based on Liquid Assets to Total Assets, Liquid Assets to Total Deposits and Liquid Assets to Demand Deposits ratios are presented in table 9;

Table 9: Liquidity ratios of select sample Banks from 2012-13 to 2016-17

Sl. No.	Name of the Bank	2013	2014	2015	2016	2017	Mean	Rank
Liquid Assets to Total Assets Ratio								
1	State Bank of India	7.33	7.40	7.56	7.41	6.36	7.21	**4**
2	Bank of Baroda	15.61	19.84	20.75	19.94	21.65	19.56	**1**
3	Bank of India	12.12	10.71	12.35	16.25	15.31	13.35	**2**
4	Axis Bank	6.00	7.37	7.81	6.34	8.36	7.18	**5**
5	HDFC Bank	6.81	8.05	6.15	5.49	5.67	6.43	**6**
6	ICICI Bank	7.72	6.98	6.55	8.31	9.81	7.87	**3**
Liquid Assets to Total Deposits Ratio								

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1	State Bank of India	9.55	9.51	9.81	9.68	8.41	9.39	**5**
2	Bank of Baroda	18.02	23.01	24.02	23.33	25.01	22.68	**1**
3	Bank of India	14.36	12.87	14.36	19.33	17.76	15.74	**2**
4	Axis Bank	8.09	10.05	11.20	9.31	12.13	10.16	**4**
5	HDFC Bank	9.21	10.78	8.06	7.12	7.61	8.56	**6**
6	ICICI Bank	14.15	12.51	11.70	14.21	15.45	13.60	**3**
Liquid Assets to Demand Deposits Ratio								
1	State Bank of India	101.90	117.06	124.23	119.78	112.83	115.16	**3**
2	Bank of Baroda	239.36	261.49	280.99	386.67	353.89	304.48	**2**
3	Bank of India	270.32	284.31	355.77	421.57	338.44	334.08	**1**
4	Axis Bank	42.29	58.00	64.34	52.36	57.76	54.95	**5**
5	HDFC Bank	52.15	64.38	49.39	44.01	42.36	50.46	**6**
6	ICICI Bank	112.17	96.03	85.43	101.70	100.97	99.26	**4**

Source : Annual Reports of sample banks from 2012-13 to 2016-17

Table 9 shows that the Bank of Baroda was at the first rank in Liquid Assets to Total Assets ratio with highest average of 19.56 per cent, followed by Bank of India (13.35 per cent), ICICI Bank (7.87 per cent), SBI (7.21 per cent) and Axis Bank (7.21 per cent). HDFC Bank was positioned at last rank with lowest average of 6.43 per cent. Regarding the ratio of Liquid Assets to Total Deposits, Bank of Baroda was at the top position with an average of 22.68 per cent, followed by Bank of India (15.74 per cent), ICICI Bank (13.60 per cent), Axis Bank (10.16 per cent) and SBI (9.39 per cent). HDFC Bank was at the least position with lowest average of 8.56 per cent. With regard to the ratio of Liquid Assets to Demand Deposits, Bank of India was at the first rank with highest average of 334.08 per cent, followed by Bank of Baroda (304.48 per cent), SBI (115.16 per cent), ICICI Bank (99.26 per cent) and Axis Bank (54.95 per cent). HDFC Bank was at the least position with lowest average of 50.46 per cent.

Table 10: Composite of Liquidity

Name of the Bank	Liquid Assets to Total Assets		Liquid Assets to Total Deposits		Liquid Assets to Demand Deposits		Group Rank	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
State Bank of India	7.21	**4**	9.39	**5**	115.16	**3**	**4.00**	**4**
Bank of Baroda	19.56	**1**	22.68	**1**	304.48	**2**	**1.33**	**1**
Bank of India	13.35	**2**	15.74	**2**	334.08	**1**	**1.67**	**2**
Axis Bank	7.18	**5**	10.16	**4**	54.95	**5**	**4.67**	**5**

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HDFC Bank	6.43	**6**	8.56	**6**	50.46	**6**	**6.00**	**6**
ICICI Bank	7.87	**3**	13.60	**3**	99.26	**4**	**3.33**	**3**

Table 10 depicts the composite of liquidity on the basis of group averages of sub-parameters. Bank of Baroda was at the top rank with group average of 1.33, followed by Bank of India (1.67), ICICI Bank (3.33), SBI (4.00) and Axis Bank (4.67). HDFC Bank was positioned last due to its poor performance (6.00) in Liquid Assets to Total Assets, Liquid Assets to Total Deposits and Liquid Assets to Demand Deposits ratios.

CAMEL: OVERALL RANKING PERFORMANCE

For the purpose of assessment of the overall ranking for each of the parameter of CAMEL Model of select sample banks, details of composite rating and results are calculated from 2012-13 to 2016-17 are presented in table 11:

Table 11: Overall Rankings Performance of sample select banks from 2012-13 to 2016-17

Name of the Bank	C	A	M	E	L	Mean	Rank
State Bank of India	3.33	4.33	3.67	3.67	4.00	**3.80**	**6**
Bank of Baroda	4.00	3.00	4.33	4.33	1.33	**3.40**	**2**
Bank of India	3.67	4.33	4.00	4.00	1.67	**3.53**	**5**
Axis Bank	3.67	3.00	2.00	3.33	4.67	**3.33**	**1**
HDFC Bank	2.00	2.67	4.00	2.67	6.00	**3.47**	**3**
ICICI Bank	4.33	3.67	3.00	3.00	3.33	**3.47**	**3**

Table 11 depicts that the under capital adequacy parameter of HDFC Bank was at the top position, while ICICI Bank was with the lowest rank. Under the asset quality parameter, HDFC Bank was at the top rank while SBI and Bank of India were held the lowest rank. Under management efficiency parameter, it is observed that top rank was obtained by Axis Bank and Bank of Baroda had taken the lowest rank. In terms of earning quality parameter, the capability of HDFC Bank got the top rank, while Bank of Baroda was at the lowest position. Under the liquidity parameter, Bank of Baroda was stood on the top position and HDFC Bank was at the lowest position. It is clear from above table that the overall rankings performance of Axis Bank was ranked at the top position with composite average of 3.33, followed by Bank of Baroda (3.40), HDFC Bank (3.47), ICICI Bank (3.47), Bank of India (3.53) and SBI (3.80) which were at the bottom most position.

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Classification of Public and Private Sector Banks based on CAMEL Criteria

Rank	CAMELS Criteria on the basis of Mean=3.50, SD=0.56	Banks
Excellent	Upto 3.12	Axis Bank, Bank of Baroda, HDFC Bank
Good	From 3.12 to 3.50	ICICI Bank
Fair	From 3.50 to 3.88	-
Poor	Above 3.88	State Bank of India, Bank of India

The above table reveals that the Axis Bank, Bank of Baroda and HDFC Bank had shown excellent financial performance. ICICI Bank had shown good financial performance. State Bank of India and Bank of India had a poor financial performance.

SUGGESTIONS

- It may turn out risky for a bank if it maintains more total advances to total deposit ratio.
- The flexibility of selecting the most appropriate financial ratios by regulatory authority may be left to its discretion based on its own financial environment.
- The managements of ICICI Bank and SBI shall minimize their expenses so as to maximize their profits. Un-necessary expenditure on ineffective advertisements, heavy expenditure on the conduct of meetings in star hotels shall be curtailed.
- The organizational managements of the respective banking sectors at different levels shall maintain the status quo in improvising their net profit position for their survival, sustainability and progressive development.
- The Public sector Banks and Private sector Banks have to adopt all such measures which may be applied to reduce the value of NPAs in order to increase the profitability and efficiency.

CONCLUSION

Banking industry is one of the healthiest performers in the world facing tremendous competition, experiencing significant growth, efficiency, profitability and stability, especially in the recent past. The main goal of banks today is to maintain stability and make sure that they are impervious to external shocks while at the same time being internally sound and sensible. As per the Capital adequacy parameter, HDFC Bank was at the top rank, while ICICI Bank was at the lowest rank. The asset quality parameter, Axis Bank was at the top rank while SBI held the lowest rank. Regarding the Management efficiency parameter, it is observed that top rank was

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held by Axis Bank and ICICI Bank and the lowest rank by HDFC Bank. ICICI Bank, Bank of India and SBI need to improve their position with regard to Capital adequacy and asset quality. While SBI and Bank of India need to improve their position with regard to Management Efficiency and Earning Quality, Axis Bank needs to improve their position of Liquidity.

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