A Comparative Study to Evaluate the Financial Performance of The Indian Banks by Camels Model

Pankaj Gupta[1], Ambika Soni[2]

[1]Professor, Dept. of Management Apex School of commerce and Management, Apex university, Jaipur, Rajasthan, India, 302020

[2]Research Scholar (Ph.D), Dept. of Management, Apex School of commerce and Management, Apex university, Jaipur, Rajasthan, India, 302020

Abstract - **CAMELS model is an effective tool to determine the financial strength of the banks and to suggest relevant measures to improve the performance of banks. CAMELS model consists of six components: Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, Liquidity and Sensitivity. The present study was done to compare the financial performance of the two public sector banks (State Bank of India, Central Bank of India) and two private sector banks (ICICI, AXIS) of India, for the period of 5 financial years from 2015-16 to 2019-20 by CAMELS model. In our study, private sector banks performed better than public sector banks. ICICI bank secured the top position followed by AXIS bank at 2nd position, State Bank of India at 3rd position and Central Bank of India was at the last 4th position. ICICI bank obtained top position in Capital Adequacy and Earning Quality fields, AXIS bank obtained the top position in Asset quality and Management Efficiency. State Bank of India obtained first position in the Sensitivity field. Central Bank of India performed best in liquidity category.**

Index Terms - **Banking, CAMELS model, Capital Adequacy, Earning Quality, Management, Sensitivity**

I.INTRODUCTION

Indian banking sector is divided into two major categories i.e. public sector banks and private sector banks. Banking is one of the fastest growing sectors in India. Banking sector helps in boosting capital formation and monetization along with facilitation of monetary policy. A strong and sustainable banking system plays very important role in the overall progress of country's economy. Performance of the banking sector is an effective measure and indicator to check the performance of the economy. The banking sector reforms were started in India as a follow up measure of financial sector reforms and economic liberalization in the country. More competitiveness, productivity and efficiency and adherence to international accounting standards were the basic intentions behind the initiation of reforms in Indian banking industry. One of such measures of supervisory regulation is the CAMELS model [1,2]. CAMELS model is an effective tool to determine the relative financial strength of the banks and to suggest relevant measures to improve the performance of banks. In India, RBI adopted CAMELS model approach in 1996 followed on the recommendations of Padmanabham Working Group Committee [3]. CAMELS is an acronym consists of six critical dimensions or components to evaluate banks operations and performance, where 'C' represents Capital Adequacy, 'A' represents Asset Quality, 'M' represents Management Efficiency, 'E' represents Earnings Quality, 'L' represents Liquidity and 'S' represents Sensitivity [3,4]. These factors reflect the financial condition, operating soundness and regulatory compliance of the banking institution. Each of the component factors is rated on a scale of 1 (best rating) to 5 (lowest rating). A composite rating is assigned as an abridgement of the component ratings and is taken as the prime indicator of a bank's current financial condition.

The present study was done to analyze and compare the financial performance and position of the two public sector banks (State Bank of India, Central Bank of India) and two private sector banks (ICICI bank, AXIS bank) of India for the period of 5 financial years from 2015-16 to 2019-20 by CAMELS model.

II. OBJECTIVES

To evaluate and compare the financial performance of the selected public sector banks (State Bank of India, Central Bank of India) and private sector banks (ICICI bank, AXIS bank) by CAMELS model.

III. METHODOLOGY

For this study, two public sector banks, State Bank of India (SBI) & Central Bank of India (CBI) and two private sector banks, ICICI bank & AXIS bank were selected. The financial performance of these 4 banks was compared with each other through for the period of 5 financial years from 2015-16 to 2019-20 by CAMELS model. The study-data was collected from the annual reports of the respective selected banks [5-8]. Data was also collected from banking bulletin, websites, magazines, newspapers and various journals [5-8]. Ratios and averages of the indicators and variables were analyzed and ranked as per the score described by CAMELS model. CAMELS model consists of six components: Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, Liquidity and Sensitivity.

A. Capital adequacy. Capital adequacy indicates the bank's capacity to handle the losses and meet all its obligations towards the customers without ceasing its operations. The capital adequacy ratio (CAR) is a measurement of a bank's available capital expressed as a percentage of a bank's risk-weighted credit exposures. The capital adequacy ratio, also known as capital-to-risk weighted assets ratio (CRAR) determines the bank's capital adequacy. CRAR is used to protect depositors and promote the stability and efficiency of financial systems around the world. Two types of capital are measured: tier-1 capital, which can absorb losses without a bank being required to cease trading, and tier-2 capital, which can absorb losses in the event of a winding-up and so provides a lesser degree of protection to depositors. Capital base of financial institutions facilitates depositors in forming their risk perception about the organization and it is required to maintain depositor's confidence and preventing the bank from going bankrupt. Higher values of CAR indicate about the better financial status of the banks. The parameters used in our study to assess the capital adequacy of the banks are given in Table 1.

Table 1

Parameters to Measure the Capital Adequacy of Banks in CAMELS Model

Parameters to measure the Capital Adequacy	
Capital adequacy ratio (CAR)	• CAR = [(Tier I capital + Tier II capital)/Risk Weighted Assets] x 100 • Higher CAR value is preferable. • It shows that the bank is adequately capitalized
Debt to Equity ratio (D/E)	• D/E= (Total Liabilities/Shareholder's Equity) x 100 • A lower value of Debt/Equity ratio is preferable.
Total advances to total assets ratio	• Ratio of (Total Advances / Total Assets) x 100 • Higher Total Advances to Total Assets ratio is preferable. • This ratio indicates a bank's aggressiveness in lending which ultimately results in better profitability.
Government Securities to Total Investment ratio	• Ratio of Govt. Securities/Total investment • The higher the Government securities to investment ratio, the lower the risk involved in bank's investments. • Higher ratio is preferable.

B. Asset quality. Asset quality indicates about the performance of assets such as current and fixed, loans, investments, real estates and all the off-balance sheet transactions. It includes bank loan's quality which reflects the earnings of the banks. It is assessed by the quantity of non-performing assets, adequacy of provisions, distribution of assets etc. The parameters used in our study to assess the asset quality of the banks are given in Table 2.

Table 2-Parameters to Measure the Asset Quality of Banks in the CAMELS Model

Parameters to measure the Asset Quality	
Net Non-Performing Assets (NPA) to Net Advances ratio	• Ratio of (Net NPA /Net Advances) X 100 • If the ratio is lower, it is a very good sign of credit efficiency of a bank. • The higher ratio leads to the weak performance of a bank.
Total Investment to Total Assets ratio	• It measures the proportion of total assets locked up in investments. It is ascertained by dividing total investments with total assets. • A higher ratio represents that the bank has maintained a high cushion of investments as a safeguard against NPAs by adopting a conservative policy.
Net NPA to total	• Ratio of (NET NPA / Total Assets) X 100

assets ratio	• This ratio indicates the efficiency of the bank in assessing credit risk and, to an extent, recovering the debts. • Lower ratio is preferable.

C. Management efficiency. Management efficiency reflects in administrative ability to ensure the safe and efficient operation, to follow up of defined norms of the bank and the capability to plan and respond to dynamic environment. Effective management is one of the most important factors behind any bank's performance. The parameters used in our study to assess the management efficiency of the banks are given in Table 3.

Table 3-Parameters to measure the Management Efficiency of Banks in the CAMELS Model

Parameters to measure the Management Efficiency	
Total Advances to Total Deposits ratio	• It measures loans (advances) as a percentage of deposits. Higher ratio is preferable.
Profit per Employee	• Ratio of Net Profits / Total number of Employees. • It indicates the contribution of each employee in the profitability of the banks. Higher ratio is preferable.
Business per employee	• Higher the ratio, better it is. It indicates the productivity of bank's employee. It is calculated by dividing the total business of the bank by number of employees.

D. Earnings quality. Earnings Quality refers to the earning and profits of the bank. It depends on the following factors: sufficient earnings to cover potential losses, provide adequate capital and pay reasonable dividends, and sustain during exposure to market risks, such as interest rate variations, foreign exchange fluctuations and price risk. It explains the future growth and sustainability. The parameters used in our study to assess the earning quality of the banks are given in Table 4.

Table 4-Parameters to Measure the Earning Quality of Banks in CAMELS Model

Parameters to measure the earnings quality	
Return on equity (ROE)	• Higher ratio is preferable. • It is a measure of financial performance calculated by dividing net income by shareholders' equity.
Return on assets (ROA)	• Higher ratio is preferable. • It is an indicator of how profitable a bank is relative to its total assets.

	It is ratio of Net Income/Total Assets.
Operating Profit to Total Assets ratio	• It represents bank's operating income or profit that is generated per rupees invested specifically in its assets that are used in every-day business operations. • Higher ratio is preferable.
Net Interest Margin to Total Assets ratio	• Higher ratio is preferable. It is a measure of the difference between the interest income earned by a bank and the interest it pays out to its lenders, relative to the amount of their assets that earn interest.
Interest Income to Total Income ratio	• It represents the share of interest income in total income. • Higher ratio is preferable.

E. Liquidity. Liquidity refers to the bank's capacity to meet its short term obligations as well as loan commitments. Banks with adequate liquidity option can obtain sufficient funds either by increasing liabilities or by converting its assets to cash quickly at a reasonable cost. The parameters used in our study to assess the liquidity of the banks are given in Table 5.

Table 5-Parameters to Measure the Liquidity of Banks in CAMELS Model

Parameters to measure the liquidity	
Liquid Assets to Total Deposit ratio	• Ratio of (Liquid assets / Total Deposits) X 100 • Total deposits may include demand deposits, saving deposits, term deposits and deposits of other financial institutions. Liquid assets may include cash in hand, balance with RBI, and balance with other banks. • Higher ratio is preferable.
Approved Securities to Total Assets ratio	• This ratio measures the Government Securities as a proportion of total assets
Liquid Assets to Demand Deposits ratio	• This ratio measures the ability of a bank to meet the demand from deposits in a particular year. • Demand deposits offer high liquidity to the depositor and hence banks have to invest these assets in a highly liquid form. • Higher ratio is preferable.
Liquid Assets to Total Assets ratio	• It provides an indication of the liquidity available to meet expected and unexpected demands for cash. • Higher ratio is preferable.

F. Sensitivity. It was added in 1995 by Federal Reserve to address the fluctuations in the interest rates (interest rate risk) or sensitivity in the market. The sensitivity to market risk determines the degree to which any changes in the equity prices, interest rates, and foreign exchange rates can affect the earnings of a bank. Repricing risk measures the gap between Interest-Rate Sensitive Assets (RSA) and Interest-Rate Sensitive Liabilities (RSL) and represents interest rate risk [9]. If a bank retains more assets repricing than liabilities, it is asset sensitive or positively gapped and exposed to the consequence of declining interest rates[9]. If a bank retains more liabilities repricing than its assets it is liability-sensitive or negatively gapped and adversely affected by rising interest rates. Assets and liabilities are very sensitive to interest rate risk. The asset-liability gap analysis can be used to measure the changes in interest rates [9].

IV. RESULTS

Capital Adequacy ratio (CAR)

Table 6-Comparison of Capital Adequacy Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	13.12	13.11	12.60	12.72	13.06	12.9	3	0.65
CBI	10.41	10.95	9.04	9.61	11.72	10.34	4	
ICICI	16.64	17.39	18.42	16.89	16.11	17.06	1	
AXIS	15.29	14.95	16.57	15.84	17.53	16.03	2	

Table 6 shows the comparison of CAR of the banks. The ICICI bank obtained the first rank with highest score, followed by AXIS bank at 2nd place, SBI at 3rd place, and CBI at 4th place.

Advances to Asset ratio

Table 7-Comparison of Advances to Asset Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	0.62	0.58	0.56	0.59	0.59	0.58	3	0.33
CBI	0.59	0.42	0.48	0.44	0.42	0.47	4	
ICICI	0.60	0.60	0.58	0.61	0.59	0.59	2	
AXIS	0.63	0.62	0.64	0.62	0.62	0.62	1	

Table 7 shows the comparison of Advances to Asset ratio of the banks. The AXIS bank obtained the first rank with highest score, followed by ICICI bank at 2nd place, SBI at 3rd place and CBI at 4th place.

Debt-Equity ratio

Table 8-Comparison of Debt Equity Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	0.07	0.06	0.06	0.06	0.05	0.06	2	0.83
CBI	0.05	0.25	0.12	0.07	0.10	0.11	4	
ICICI	0.06	0.06	0.06	0.06	0.04	0.05	1	
AXIS	0.06	0.07	0.08	0.06	0.13	0.08	3	

Table 8 shows the comparison of Debt-Equity ratio of the banks. The ICICI bank obtained the first rank with lowest score, followed by SBI at 2nd place, AXIS bank at 3rd place and in the last CBI at 4th place.

Government Securities to Total Investment ratio

Table 9-Comparison of Government Securities to Total Investment Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	0.82	0.76	0.81	0.80	0.78	0.79	1	0.32
CBI	0.75	0.80	0.79	0.77	0.77	0.77	2	
ICICI	0.70	0.70	0.70	0.72	0.77	0.71	4	
AXIS	0.73	0.72	0.68	0.69	0.80	0.72	3	

Table 9 shows the comparison of Government Securities to Total Investment ratio of the banks. SBI obtained the first rank with highest score, followed by CBI at 2nd place, AXIS at 3rd place, and in the last ICICI bank at 4th place.

Net Non-Performing Assets (NPA) to Net Advances ratio

Table 10-Comparison of Net NPA to Net Advances Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	3.81	3.71	5.73	3.01	2.23	3.69	3	0.84
CBI	7.36	10.2	11.1	7.73	7.63	8.80	4	
ICICI	2.98	5.43	5.43	2.29	1.54	3.53	2	
AXIS	0.74	2.27	3.64	2.06	1.56	2.05	1	

Table 10 shows the comparison of Net NPA to Net Advances ratio of the banks. The AXIS bank obtained the first rank with lowest score, followed by ICICI bank at 2nd place, SBI at 3rd place, and in the last CBI at 4th place.

Total Investment to Total Assets ratio

Table 11-Comparison of Total Investment to Total Assets Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	0.24	0.28	0.31	0.26	0.26	0.27	3	0.36
CBI	0.29	0.28	0.31	0.38	0.40	0.33	4	
ICICI	0.00	0.21	0.23	0.22	0.23	0.17	1	
AXIS	0.24	0.21	0.22	0.22	0.17	0.21	2	

Table 11 shows the comparison of Total Investment to Total Assets ratio of the banks. The ICICI bank obtained the first rank lowest score, followed by AXIS bank at 2nd place, SBI at 3rd place and in the last CBI at 4th place.

Net NPA to Total Assets ratio

Table 12-Comparison of Net NPA to Total Assets Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	0.03	0.03	0.03	0.03	0.02	0.03	3	0.73
CBI	0.04	0.04	0.05	0.03	0.03	0.04	4	
ICICI	0.02	0.03	0.03	0.01	0.01	0.02	2	
AXIS	0.00	0.01	0.02	0.01	0.01	0.01	1	

Table 12 shows the comparison of Net NPA to Total Assets ratio of the banks. AXIS bank obtained the first rank lowest score, followed by ICICI bank at 2nd place, SBI at 3rd place, and in the last CBI at 4th place.

Total Advances to Total Deposits ratio

Table 13-Comparison of Total Advances to Total Deposits Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	0.85	0.76	0.72	0.75	0.71	0.75	2	0.54
CBI	0.68	0.47	0.53	0.49	0.48	0.53	3	
ICICI	1.03	0.95	0.91	0.90	0.84	0.92	1	
AXIS	0.95	0.90	0.97	0.90	0.89	0.92	1	

Table 13 shows the comparison of Total Advances to Total Deposits ratio of the banks. AXIS bank and ICICI bank obtained the first rank with highest score, followed by SBI at 2nd place, in the last CBI at 3rd place.

Business per Employee ratio

Table 14-Comparison of Business per Employee Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	14.11	16.24	16.70	18.77	21.05	17.37	1	0.44
CBI	11.95	11.81	12.71	12.78	14.06	12.66	3	
ICICI	9.43	9.89	10.78	12.22	12.75	11.01	4	
AXIS	14.84	14.00	14.84	16.53	17.27	15.49	2	

Table 14 shows the comparison of Business per Employee ratio of the banks. SBI obtained the first rank with highest score, followed by AXIS bank at 2nd place, CBI at 3rd place, and in the last ICICI bank at 4th place.

Profit per Employee ratio

Table 15 Comparison of Profit per Employee Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue

SBI	0.047	0.051	-0.0024	0.003	0.057	0.02	3	0.89
CBI	-3.76	-6.49	-13.86	-15.55	-3.27	-8.58	4	
ICICI	0.14	0.12	0.08	0.04	0.08	0.09	1	
AXIS	0.18	0.07	0	0.08	0.02	0.07	2	

Table 15 shows the comparison of Profit per Employee ratio of the banks. ICICI bank obtained the first rank with highest score, followed by AXIS bank at 2nd place, SBI at 3rd place, and CBI at 4th place.
Return on Equity ratio

Table 16-Comparison of Return on Equity Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	7.74	7.25	-3.78	0.48	7.74	3.88	3	0.67
CBI	-9.19	-16.84	-34.66	-36.09	-6.5	-20.6	4	
ICICI	11.3	10.3	6.6	3.2	7.1	7.7	1	
AXIS	17.49	7.22	0.53	8.09	2.34	7.13	2	

Table 16 shows the comparison of Return on Equity ratio of the banks. ICICI bank obtained the first rank with highest score, followed by AXIS bank at 2nd place, SBI at 3rd place, and CBI at 4th place.
Interest Income to Total Income ratio

Table 17-Comparison of Interest Income to Total Income Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	0.85	0.83	0.83	0.87	0.85	0.84	2	0.93
CBI	0.93	0.90	0.91	0.91	0.87	0.90	1	
ICICI	0.77	0.74	0.76	0.81	0.82	0.78	4	
AXIS	0.81	0.79	0.81	0.78	0.78	0.79	3	

Table 17 shows the comparison of Interest income to Total Income ratio of the banks. CBI obtained the first rank with highest score, followed by SBI at 2nd place, AXIS bank at 3rd place, and ICICI bank at 4th place.

Operating Profit to Total Assets ratio

Table 18-Comparison of Operating Profit to Total Assets Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	1.83	1.88	1.72	1.51	1.72	1.73	1	0.43
CBI	0.01	0.01	0.01	0.01	0.01	0.01	3	
ICICI	0.03	0.02	0.02	0.02	0.02	0.02	3	
AXIS	0.03	0.03	0.02	0.02	0.03	0.02	2	

Table 18 shows the comparison of Operating Profit to Total Assets ratio of the banks. SBI obtained the first rank with highest score followed by AXIS bank at 2nd place, ICICI bank at 3rd place and CBI at 4th place.
Net Interest Margin to Total Assets ratio

Table 19-Comparison of Net Interest Margin to Total Assets Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	2.96	2.84	2.50	2.78	2.97	2.81	3	0.59
CBI	2.78	2.51	2.47	2.54	2.50	2.56	4	
ICICI	3.49	3.25	3.23	3.42	3.73	3.42	1	
AXIS	3.35	3.28	2.94	2.96	3.08	3.12	2	

Table 19 shows the comparison of Net Interest Margin to Total Assets ratio of the banks. ICICI bank ranked first with the highest score followed by AXIS bank at 2nd place, SBI at 3rd place and in the last CBI at 4th place.
Return on Assets

Table 20-Comparison of Return on Assets Ratio

Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	0.46	0.41	-0.19	0.02	0.38	0.21	3	0.33
CBI	-0.45	-0.76	-1.54	-1.71	-0.33	-0.95	4	
ICICI	1.49	1.35	0.87	0.39	0.81	0.98	1	

A XI S	1.7 2	0.6 5	0.0 4	0.6 3	0.2 0	0.64	2

Table 20 shows the comparison of Return on Assets of the banks. ICICI bank got first rank with highest score, followed by AXIS bank at 2nd place, SBI at 3rd place and CBI at 4th place.

Liquid Assets to Total Assets

Table 21-Comparison of Liquid Assets to Total Assets Ratio

Ba nk	20 15- 16	20 16- 17	20 17- 18	20 18- 19	20 19- 20	Ave rage	Ra nk	pVa lue
SB I	0.0 7	0.0 6	0.0 6	0.0 6	0.0 6	0.06	4	0.2 2
CB I	0.0 5	0.2 4	0.1 2	0.0 9	0.1 0	0.12	1	
ICI CI	0.0 8	0.1 0	0.1 0	0.0 8	0.1 1	0.09	2	
A XI S	0.0 6	0.0 8	0.0 6	0.0 8	0.1 1	0.07	3	

Table 21 shows the comparison of Liquid Assets to Total Assets ratio of the banks. CBI scores highest and obtained first rank followed by ICICI bank at 2nd place, AXIS bank at 3rd place, and SBI at 4th place.

Liquid Assets to Demand Deposits

Table 22-Comparison of Liquid Assets to Demand Deposits Ratio

Ba nk	20 15- 16	20 16- 17	20 17- 18	20 18- 19	20 19- 20	Ave rage	Ra nk	pVa lue
SB I	1.2 0	1.1 3	1.0 1	1.0 8	1.1 0	1.10	2	0.6 8
CB I	1.3 0	5.9 7	2.6 7	1.9 1	2.3 4	2.83	1	
ICI CI	0.9 9	0.9 9	0.9 2	0.8 3	1.1 3	0.97	3	
A XI S	0.5 2	0.5 8	0.4 5	0.7 5	1.1 2	0.68	4	

Table 22 shows the comparison of Liquid Assets to Demand Deposits of the banks. CBI has the highest

score and obtained first rank, followed by SBI at 2nd place, ICICI at 3rd place, and AXIS bank at 4th place. Liquid Assets to Total Deposits

Table 23-Comparison of Liquid Assets to Total Deposits

Ba nk	20 15- 16	20 16- 17	20 17- 18	20 18- 19	20 19- 20	Ave rage	Ra nk	pVa lue
SB I	0.1 0	0.0 8	0.0 7	0.0 8	0.0 8	0.08	4	0.3 7
CB I	0.0 6	0.2 7	0.1 3	0.1 0	0.1 1	0.13	2	
ICI CI	0.0 6	0.2 7	0.1 3	0.1 2	0.1 5	0.14	1	
A XI S	0.0 9	0.1 2	0.1 0	0.1 2	0.1 5	0.11	3	

Table 23 shows the comparison of Liquid Assets to Total Deposits ratio of the banks. ICICI bank stands first with highest score, followed by CBI at 2nd place, AXIS bank at 3rd place, and at last SBI in 4th place.

Approved Securities to Total Assets

Table 24-Comparison of Approved Securities to Total Assets

Ba nk	20 15- 16	20 16- 17	20 17- 18	20 18- 19	20 19- 20	Ave rage	Ra nk	pVa lue
SB I	0.2 0	0.2 2	0.2 5	0.2 1	0.2 1	0.21	2	0.8 1
CB I	0.2 2	0.2 2	0.2 5	0.2 9	0.3 1	0.25	1	
ICI CI	0.1 6	0.1 5	0.1 6	0.1 6	0.1 7	0.16	3	
A XI S	0.1 8	0.1 5	0.1 5	0.1 5	0.1 4	0.14	4	

Table 24 shows the comparison of Approved Securities to Total Assets of the banks. CBI obtained first place with highest values, SBI at 2nd place, ICICI bank at3rd place, and AXIS bank at 4th place.

Gap between Interest-Rate Sensitive Assets and Liabilities

Table 25-Comparison of Gap between Interest-Rate Sensitive Assets and Liabilities (in Crores Rupees) for Financial Years from 2015-16 to 2019-20

Gap between Interest-Rate Sensitive Assets and Liabilities in Crores Rupees								
Bank	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Rank	pValue
SBI	152752	146594	119280	60985	76065	111135.2	1	0.53
CBI	9026	4307	-2142	-2071	10107	3845.4	4	
ICICI	63856	55725	56436	80112	123990	76023.8	2	
AXIS	32709	35343	35724	37367	61390	40506.6	3	

Table 25 shows gap between bank's Interest-Rate Sensitive Assets and Liabilities (in Crores) for the financial years from 2015-16 to 2019-2020. All four banks in our study had positive gap (RSA>RSL) which suggests that any changes in interest rate will positively affect the bank's net interest income and profitability. SBI was ranked first with the highest gap (111135 Crores Rupess) between Interest-Rate Sensitive Assets and Liabilities. ICICI bank (76023 Crores Rupees) was at second position, AXIS bank (40506 Crores Rupees) at third position, and at last CBI (3845 Crores Rupees).

Composite Result (Overall Performance) of CAMELS Model Analysis

Table 26-Composite Ranking/Result (Overall Performance) of CAMELS Model Analysis

Bank	Capital Adequacy	Asset Quality	Management Efficiency	Earning Quality	Liquidity	Sensitivity	Composite Result (Overall Performance)	pValue
SBI	2	3	2	3	3	1	3	0.25
CBI	3	4	3	4	1	4	4	
ICICI	1	2	2	1	2	2	1	
AXIS	2	1	1	2	4	3	2	

Table 26 analyzes the results of comparison in each component of CAMELS model. Table 26 also shows the final composite result (overall performance) after summing the results of each component of CAMELS model. Capital Adequacy comparison shows that ICICI bank secured first rank followed by SBI and AXIS at 2nd rank and CBI at 3rd position respectively. Asset Quality comparison shows that AXIS bank secured first rank followed by ICICI at 2nd rank, SBI at 3rd position and CBI at 4th position respectively. Management Efficiency comparison shows that AXIS bank secured first rank followed by ICICI and SBI at 2nd position and CBI at 3 rd position respectively. Earning Quality comparison shows that ICICI bank secured the top position with 1st rank, followed by AXIS at 2nd rank, SBI at 3rd rank and CBI got 4th rank respectively. Liquidity comparison shows that CBI got 1st rank followed by ICICI bank at 2nd rank, SBI at 3rd rank and AXIS bank at 4th position. Sensitivity comparative analysis showed that SBI obtained 1st rank, ICICI bank 2nd rank, AXIS bank 3rd rank and CBI got 4th rank.

Final composite result (overall performance), after summing the results of each component of CAMELS model was analyzed (Table 26). In the final composite result (overall performance) ICICI bank secured first rank followed by AXIS bank at 2nd rank, SBI at 3rd position and CBI at 4th position respectively.

V. DISSCUSION

In our study, ICICI bank secured the top position among all the 4 banks, while comparing overall performance and composite analysis of CAMELS model followed by AXIS bank at 2nd position, SBI at 3rd position and CBI at the last 4th position for the financial years from 2015-16 to 2019-20. ICICI bank performed the best and obtained top position in Capital Adequacy and Earning Quality fields. AXIS bank performed well and obtained the top position in Asset quality and Management Efficiency. SBI obtained first position in the Sensitivity field. SBI obtained second position among all four banks in fields of Capital Adequacy and Management Efficiency. CBI performed best in liquidity category. CBI performed worst among all the banks in the category of Capital Adequacy, Earning Quality, Asset quality, Management Efficiency and Sensitivity fields. Private sector banks (ICICI and AXIS bank) performed better in category of Capital adequacy, Asset quality, Management efficiency and Earning Quality category. Public sector banks (CBI, SBI) performed better in the fields of Liquidity and Sensitivity. Asset-Liabilities gap analysis revealed that SBI obtained first rank with the maximum gap between Interest-Rate Sensitive Assets and Liabilities, followed by ICICI bank at second position, AXIXs bank at third position, and at last CBI.

In a similar study, authors compared the performance of 5 private sector banks: ICICI bank, AXIS bank, HDFC bank, Yes bank, Indusland bank for the period 2011-2016 through CAMEL methodology [10]. The authors found that HDFC bank performed best in category of Capital Adequacy and Assets Quality. HDFC bank's overall performance was best among the 5 selected banks. Indusland bank secured the IInd

position, followed by AXIS bank and YES bank at III and IVth position respectively. ICICI bank performed poorly and got Vth position. In our study, ICICI bank got 1st rank in Capital Adequacy and Earning Quality category, AXIS bank obtained 1st position in Asset quality, Management Efficiency fields.

In a comparative study, two public sector banks SBI, PNB Bank and two private sector banks ICICI bank, and AXIS bank's performance from 2015 to 2019 were compared by CAMEL model [11]. The authors found that private sector banks ICICI and AXIS bank performed better than public sector banks SBI and PNB Bank. The authors concluded that the private sector banks have to improve the performance on liquidity aspect and public sector banks have to focus on capital adequacy, asset quality, management efficiency and earning quality issues. In our study also private sector banks (AXIS and ICICI) performed better than public sector banks (SBI, CBI).

In another study, SBI and ICICI bank's performance from 2012-13 to 2016-17 was compared using CAMEL model. In this study, SBI secured better position while comparing for Capital Adequacy and Asset Quality category [12]. The possible reasons for these results suggested by the authors were the poor performance of ICICI in advance to assets, debt equity and government securities to total investments ratios. ICICI bank scored better while comparing for Management efficiency, Earning Quality, and Liquidity. In our study ICICI bank performed better than SBI in the category of Capital Adequacy, Assets Quality, Management Efficiency, Earning Quality and Liquidity. In our study SBI performed better than ICICI bank in the field of Sensitivity.

The financial performance of SBI and ICICI for the period of five years from 2011-12 to 2015-16 was evaluated using the CAMEL approach. In this study the ICICI has performed better than SBI in maintaining minimum capital to mitigate credit risk, market risk and operational risk [13]. ICICI Bank had lower proportion of net NPA to the Net Advances than that of SBI. The mean Return on Assets (%) of ICICI Bank was higher than that of SBI. The mean Return on Net Worth of ICICI Bank was higher than that of SBI. The mean Credit Deposit Ratio of ICICI Bank was higher than that of SBI. The mean Debt Equity Ratio of SBI was higher than that for ICICI. In this study ICICI performed better in terms of profitability and management efficiency as compared to SBI. In our

study also ICICI performed better than SBI in terms of Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality and Liquidity.

In another study, seven public sector bank: SBI, Bank of Baroda, Bank of India, PNB bank, Union Bank of India, Canara bank and IDBI bank and four private sector banks namely ICICI bank, HDFC bank, AXIS bank and Indusind bank were evaluated for the financial performance during 2013-14 to 2016-17 [14]. This study showed that Indusind bank, HDFC bank, ICICI bank, AXIS bank and SBI obtained the top five positions while BOB, BOI, PNB, UBI, Canara bank and IDBI were on bottom six positions. In top five positions, only one public sector bank i.e. SBI managed to secure the position and the other four were private sector banks. All the bottom six banks were public sector banks. In this study the authors concluded that private sector banks showed better performance on Capital adequacy, Asset Quality, Management Efficiency and Earning Quality parameter. In criteria of liquidity, public sector banks performed better as compared to private sector banks. In our study also private sector banks ICICI and AXIS bank performed better than public sector banks SBI and CBI in all the categories except in Liquidity and Sensitivity.

In another comparative study, five private sector banks (ICICI, HDFC, Kotak Mahindra, AXIS and YES bank) were compared for their financial performance from 2013 to 2017 by CAMEL model. In this study the authors found that ICICI bank had best performance in Debt Equity ratio, Capital Adequacy ratio, Credit Deposit ratio, Liquid Assets to Total Assets ratio and Liquid Assets to Total Deposits ratio [15]. HDFC bank had best performance in Return on assets ratio and Net NPA to total advances ratio. Kotak bank had best performance in Interest Income to Total Assets ratio. YES bank had best Net NPA to Total Assets ratio and Return on Net Worth ratio. In this study, ICICI bank was ranked first and AXIS bank was at last position among the selected 5 private sector banks. In our study also ICICI bank was at 1st position. The performance of 12 public and private sector banks over a period of eleven years (2000-2011) was evaluated in a study [16]. HDFC was ranked first under the CAMEL analysis followed by ICICI bank. AXIS bank occupied the third position. In our study ICICI bank was on top position and AXIS bank at second position.

In a comparative study, performance of 10 banks (Five banks from private sector viz. ICICI, HDFC, AXIS, YES, Kotak Mahindra and five banks from public sector viz. SBI, PNB, BOB, UBI and Canara bank) for a period from 2012-2013 to 2016-2017 (5 years) was evaluated [17]. HDFC bank was ranked in the first place followed by AXIS bank, ICICI bank, Kotak bank, YES bank, and Canara bank. In this study HDFC & AXIS bank were in the above average status; ICICI & Kotak bank, YES bank & SBI were in the average status, and the Union bank, Bank of Baroda, PNB & Canara bank were in the below average status. In our study also private sector banks performed better than public sector banks.

In a comparative study to measure Interest Rate Risk the author did the assets-liability mismatch and gap analysis for the financial year from 2011 to 2015 of 10 leading banks including ICICI bank, AXIS bank and SBI [9]. The author found that positive gap between Rate-Sensitive assets and liabilities was largest for SBI followed by ICICI bank. In our study SBI was ranked first with the highest gap between Interest-Rate Sensitive Assets and Liabilities followed by ICICI bank at second position.

In our study, comparison for each parameter of CAMELS model and final composite rank analysis (overall performance) showed ICICI bank secured first rank followed by AXIS bank at 2nd rank, SBI at 3rd position and CBI at 4th position respectively. In our study private sector banks (ICICI, AXIS) bank performed better than public sector banks (SBI, CBI)

VI. CONCLUSION

In this study, we compared the performance of two selected public sector banks (State Bank of India & Central Bank of India) and two private sector banks (ICICI & AXIS bank) for the financial year 2015-16 to 2019-20 using CAMELS model. In our study private sector banks (ICICI & AXIS) performed better than public sector banks (SBI & CBI). In our study, ICICI bank performed well and obtained top position in Capital Adequacy and Earning Quality category. AXIS bank performed well and obtained top position in Asset quality, Management Efficiency. SBI obtained second position in category of Capital Adequacy and Management Efficiency. CBI performed worst among all the four banks in all fields of CAMELS model except in Liquidity. SBI performed better than ICICI bank in the field of Sensitivity. In our study ICICI bank performed best and obtained the top position followed by AXIS bank at 2nd place, SBI at 3rd place, and CBI at last 4th place in CAMELS model overall performance analysis.

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