

A comparative analysis of performance of select ten banks based on CAMEL Model

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ABSTRACT

The financial sector plays a very important role in the development of the economy of a country. Banks are vital components of any financial system and thus the stability of the banking sector has gained a lot of importance especially after the global financial crisis in 2008. Assessment of the financial performance of the banking sector is an effective and necessary measure to judge the strength of the financial system of an economy. The volatility of the financial markets, the intense competition amongst the banks in the aftermath of the economic liberalization, and diversification of banking services into other areas like insurance and investments has increased the risk and challenges faced by banks. CAMEL model is one of the more popular models used for the assessment of bank performance. In this study, a sample of 10 banks chosen from both public and private sector banks in India have been ranked on the basis of this model.

Keywords: Bank performance measurement, Bank assessment, CAMEL model

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INTRODUCTION

The financial sector plays a very important role in the development of the economy of a country. Banks are vital components of any financial system and thus the stability of the banking sector has gained a lot of importance especially after the global financial crisis in 2008. As opined by Rabi N. Mishra, S. Majumdar and Dimple Bhandia, stability in the banking sector is a necessary condition for maintaining financial stability. Assessment of the financial performance of the banking sector is an effective and necessary measure to judge the strength of the financial system of an economy. The volatility of the financial markets, the intense competition amongst the banks in the aftermath of the economic liberalization, and diversification of banking services into areas like insurance and investments has increased the risk and challenges faced by banks. In the light of this, it is important to have an effective supervisory system which ensures safety and soundness of banks.

In India, RBI is responsible for monitoring the financial condition of the commercial banks and for enforcing regulatory norms on these banks. Much of the information required for monitoring is gathered from the reports submitted by the banks at regular intervals. However, this information has to be corroborated with on-site examinations which verify the accuracy of the reports and also help to gather further information required by RBI. RBI's approach to supervision after the economic liberalization has shifted towards prudential regulation and supervision keeping in tune with best international practices.

In addition, RBI has initiated a Prompt Corrective Action (PCA) framework for commercial banks. Under this framework, certain trigger points have been specified in three areas i.e. capital to risk weighted assets ratio (CRAR), net non-performing assets (NPA) and Return on Assets (RoA). RBI initiates certain structured and discretionary actions when banks hit these trigger points.



CAMEL RATING SYSTEM

The CAMEL rating system was adopted first by the United States in the 1980s to conduct onsite examination of their banks' performance. In India, RBI set up the Padmanabhan Working Group (1995) who recommended the adoption of two models for bank supervision viz., the CAMEL method for Indian banks and the CACS method for Foreign based banks in India. The CAMEL rating framework judges the banks on five different parameters viz. Capital Adequacy, Asset Quality, Management, Earnings and Liquidity. The CAMEL model was subsequently revised to CAMELS in 1996 to accommodate another parameter "S" which is "Sensitivity to Market Risk". The CAMELS ratings help to determine a bank's overall financial condition and to identify its strengths and weaknesses. RBI has been following the CAMEL model for evaluating bank performance since 1997.

The CAMEL ratings are based on a scale of 1 to 5 where 1 represents the highest rating and 5 represents the lowest

rating. A rating of 1 or 2 indicates strong performance and sound management with no cause for supervisory concern. A rating of 3, 4 and 5 presents weakness in one or more parameters, indicating weakness in performance and causing supervisory concerns. The banks are normally examined once a year. In case of banks with low ratings, the assessment may be more frequent. Each CAMEL parameter has several sub-parameters under it. Each sub-parameter is given a rating of 1 to 5. A composite rating, which is an abridgement of the individual component ratings, is assigned again on a scale of 1 to 5 to obtain the composite rating. The CAMEL composite rating given by the regulator involves a certain amount of subjectivity based on the regulator's assessment of the individual components and the overall assessment of the organization.

In addition to CAMEL rating, RBI has initiated a Prompt Corrective Action (PCA) framework in place for commercial banks. Under this, there are regulatory trigger points set up under three parameters – capital to risk weighted assets ratio (CRAR), net non-performing assets (NPA) and Return on Assets (RoA). When banks hit these trigger points, RBI initiates certain structured and discretionary actions to set in corrective measures.



REVIEW OF LITERATURE

Barker and Holdsworth (Barker, D., and Holdsworth, D., 1993) in their findings opine that CAMEL ratings are useful, even after controlling a wide range of publicly available information about the condition and performance of banks. Hirtle and Lopez (1999) were of the opinion that the CAMEL ratings were highly confidential, and only exposed to the bank's senior management for the purpose of projecting the business strategies.

A study conducted by Lace and Stephen (2001) showed that there is definitely a relationship between bank efficiency scores and financial ratios used to proxy a bank's CAMEL rating. Said and Saucier (2003) used CAMEL rating methodology to evaluate the liquidity, solvency and efficiency of Japanese Banks.

Al-Tamimi (2010) investigated factors influencing the performance of Islamic banks and conventional banks in (UAE) during 1996 to 2008. Barr et al. (2002) opined that "CAMEL rating criteria has become a concise and indispensable tool for examiners and regulators". Md. AnwarulKabir in his paper on CAMEL analysis opines that "In evaluating the function of the banks, many of the developed countries are now following uniform financial rating system i.e. CAMEL rating along with other existing procedures and techniques".

Yamamura, N., & Mitamura, S. (2005) are of the opinion that in Germany, not only big banks but also retail financial institutions, like savings banks and credit cooperatives, have developed internal ratings-based approaches to promote efficient and reasonable decisions on lending terms and conditions for specific borrowers. Gupta and Kaur (2008) rated

Indian private sector banks using the CAMEL model. Reddy and Prasad (2011) evaluated the financial performance of select regional rural banks using the same model.

Siva and Natarajan (2011) applied the CAMEL model on the performance of the SBI group. Bhayani (2006), Gupta and Kaur (2008), Prasuna (2003) are other researchers who have used the CAMEL model for assessing bank performance and their studies have helped the banks to understand their areas of strengths and weaknesses. Thirunavukkarasu. T et al. have used CAMEL model to study performance of private and public sector banks in India.

Karri, H. K et al (2015) have chosen the CAMEL model and t-test to measure the performance of two banks in India from each of the important parameter like capital adequacy, asset quality, management efficiency, earning quality, liquidity and Sensitivity. Rozina Akter (2016) has discussed the performance of commercial banks in Bangladesh and concluded that these banks did not maintain the required capital and provisions against NPAs. Also, there was an increasing trend in the percentage of liquid assets.



RESEARCH METHODOLOGY

The present study is a descriptive study. The sample consists of 10 banks, 6 from the public sector and 4 from the private sector in India. The study is purely based on secondary data.

The financial data of the selected banks has been collected from the annual reports of the various banks and also from the websites of RBI, SEBI and Money Control.com for the years 2009 to 2015. The years have been so chosen because the data for capital adequacy according to BASEL II norms are available only after 2008.

For the present study, a CAMEL ranking technique is being

Table 1: Description of the parameters and sub-parameters in the CAMEL model

CAMEL Parameter	Sub-Parameters
Capital Adequacy	Capital Adequacy 1. Capital Adequacy ratio 2. Debt-Equity Ratio 3. Total Advances to Total Assets ratio 4. Government Securities to Total Investments ratio
Asset Quality	1. Net NPAs to Net Advances Ratio 2. Total Investments to Total Assets Ratio 3. Net NPA to Total Assets Ratio 4. Percentage change in Net NPAs
Management Efficiency	1. Business per employee 2. Profit per employee 3. Credit Deposit Ratio 4. Return on Net Worth
Earnings Quality	1. Net Profit to Total Assets Ratio 2. Net Interest Income to Total Assets Ratio 3. Operating Profit to Total Assets Ratio 4. Interest Income to Total Income Ratio

followed to rank the selected banks based on their performance. A ranking system has been used because it makes judging and analyzing the financial data of banks much simpler to comprehend. This method studies the performance of each bank relative to the performance of other banks. All the selected banks are ranked based on their performance in each of the sub-parameters. The rankings in the sub-parameters are consolidated based on simple averages to arrive at the ranking in the CAMEL parameter. These rankings are again consolidated to arrive at the final CAMEL ranking. Twenty financial ratios have been identified as sub-parameters for assessing the financial performance.

The following table indicates the various sub-parameters (ratios) adopted for the purpose of assessment on the basis of the CAMEL model. Each of these ratios is discussed individually.



OBJECTIVES OF THE STUDY

The objectives of our study are:

1. To analyze the financial position and performance of 10 banks using CAMEL model.
2. To make a comparison among the selected banks based on the various parameters chosen for the analysis.
3. To suggest measures, on the basis of the study results, to improve further the financial performance of the banks under study.

Capital Adequacy

Capital Adequacy is one of the prominent indicators of the financial health of the banking system. A financial institution has to maintain capital commensurate with the nature and extent of risks and the bank must have the ability to identify, measure, monitor, and control these risks. Capital Adequacy Ratio (CAR) is a measure of a bank's ability to absorb reasonable level of losses arising from the risks in its business. According to Fatima, N. (2014), it is important for a bank to conserve and protect the stakeholders' confidence and prevent the bank from becoming bankrupt. In India, the impact of financial crises was low due to strong capital structure and a good regulatory environment. RBI has prescribed a minimum of 9% CAR as per BASEL II for banks in India.

The Capital Adequacy ratios table is constructed based on the rankings obtained from the sub-parameters of Capital Adequacy. Under the Capital Adequacy ratio, ICICI bank has the highest value of 18.07. The performance of South Indian Bank is the best under the Debt-Equity ratio. Syndicate bank tops the list under the Assets to Advances ratio and also in the investment in Government securities to total securities ratio. The above ratios indicate the financial strength and financial stability of the banks. The average of the rankings in the individual components has been taken. A lower rank is indicative of better financial health. The final ranking based on

Table 2: Capital Adequacy ratios of sample banks

Name of Bank	CAR		Debt-Equity		Advances/Assets		Government Securities/ Total Investments		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
State Bank of India	13.16	6	1.53	7	62.97	5	78.81	7	6.3	8
Bank of Baroda	13.87	4	0.85	4	62.04	7	81.32	5	5.0	5
Syndicate Bank	11.98	10	1.55	8	67.12	1	87.69	1	5.0	5
State Bank of Mysore	12.49	9	1.19	5	65.95	2	84.40	4	5.0	5
Indian Overseas Bank	12.51	8	1.66	9	62.98	4	84.48	3	6.0	7
ICICI Bank	18.07	1	1.99	10	55.04	10	54.92	10	7.8	10
Axis Bank	14.85	3	1.34	6	58.54	8	61.53	9	6.5	9
HDFC Bank	16.50	2	0.67	2	58.49	9	79.46	6	4.8	3
South Indian Bank	13.80	5	0.40	1	63.47	3	77.49	8	4.3	1
Canara Bank	12.89	7	0.84	3	62.22	6	86.50	2	4.5	2

Table 3: Asset Quality ratios of sample banks

Name of Bank	Net NPAs to Net Advances		Total Investment to Total Assets		Net NPA to Total Assets		% change in Net NPAs		Group Bank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
State Bank of India	1.96	9	24.59	8	1.24	9	21.93	2	7	8
Bank of Baroda	0.89	4	20.07	10	0.54	4	57.24	8	6.5	7
Syndicate Bank	1.14	5	22.67	9	0.77	6	36.29	5	6.3	5.5
State Bank of Mysore	1.85	8	25.80	7	1.23	8	51.16	7	7.5	9
Indian Overseas Bank	2.54	10	26.74	6	1.59	10	72.86	9	8.8	10
ICICI Bank	1.34	6	31.12	1	0.74	5	16.12	1	3.3	3
Axis Bank	0.37	2	30.90	2	0.22	2	27.99	4	2.5	2
HDFC Bank	0.29	1	27.65	3	0.17	1	26.35	3	2	1
South Indian Bank	0.66	3	26.90	4	0.41	3	75.99	10	5	4
Canara Bank	1.65	7	26.85	5	1.02	7	39.61	6	6.3	5.5

all the parameters indicates that South Indian Bank is the best performer followed by Canara Bank and ICICI bank has been ranked the last. Though ICICI topped the list of banks in the Capital Adequacy ratio, it has performed poorly in the other dimensions of capital adequacy and hence finds itself in the bottom of the list.

Asset Quality

The health of commercial banks can be assessed by the quality of the assets held by them. The biggest risk facing the bank is the risk of loan losses. The quality of the asset (loan) depends on the ability of the borrower to repay the same. NPAs are those assets where the recovery of the loan is doubtful. Asset Quality can be examined by arriving at the Non-Performing Assets (NPA) values. Such assets cause a stress on the bank's performance and its profitability. According to Baral (2005), the extent of the credit risk depends on the quality of assets held by an individual bank. A low NPA ratio is preferred as it indicates good quality of assets held by the bank. A high NPA ratio will eventually lead to losses for the bank as the non-recoverable assets have to be written off from the profits and will lead to degeneration of the profits. As opined by R De Bock, (2012) "Economic activity slows down when non-performing loans increase or credit contracts while the exchange rate tends to depreciate."

The Asset Quality ratios table is constructed based on the individual components of Asset Quality. The average of the rankings in the individual components has been taken. It can be observed that HDFC is in the first position with an average rank of 2 followed by Axis Bank with a ratio of 2.5. IOB has the last position with an average rank of 8.8.

Management Efficiency

A sound management is the key to the performance of any organization. The capability of the management plays an important role in the success of an organization. Management efficiency refers to the capability of the management to plan and respond quickly to a dynamic and changing environment. This component is measured using various measures which indicate the efficiency of the workforce, management of resources, ratio of credit to deposit which indicates the proportion of funds which have been lent, and the efficiency ratio which delivers value to the shareholder i.e. Return on Net Worth.

The composite Management Efficiency table is constructed based on the individual components of Management Efficiency discussed above. The average of the rankings in the individual components has been taken. Bank of Baroda secures the first position with an average ranking of 1.8. Indian Overseas Bank occupies the last position. Bank of Baroda has

Table 4: Management Efficiency ratios of sample banks

Name of Bank	Business Per Employee		Profit Per Employee		Credit Deposit Ratio		Return on Net Worth		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
	State Bank of India	8.47	9	5.10	8	81.35	3	13.42	8	7.0
Bank of Baroda	14.26	1	9.07	3	84.72	2	17.00	1	1.8	1
Syndicate Bank	11.54	4	5.49	7	77.10	5	15.09	6	5.5	5
State Bank of Mysore	8.74	7	3.84	9	78.41	4	13.70	7	6.8	7.5
Indian Overseas Bank	10.80	5	2.63	10	75.65	8	6.56	10	8.3	10
ICICI Bank	8.59	8	12.57	2	96.33	1	10.74	9	5.0	3
Axis Bank	12.33	2.5	13.86	1	76.28	7	16.89	2	3.1	2
HDFC Bank	7.13	10	8.22	4	76.69	6	16.61	3	5.8	6
South Indian Bank	9.95	6	5.71	6	70.97	10	15.76	5	6.8	7.5
Canara Bank	12.33	2.5	6.90	5	71.22	9	16.56	4	5.1	4

Table 5: Earnings Quality ratios of sample banks

Name of Bank	Net Profit to Total Assets		Net Interest Income to Total Assets		Operating Profit to Total Assets		Interest Income to Total Income		Group Bank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
	State Bank of India	0.79	7	2.99	6	2.03	4	85.99	7	6.0
Bank of Baroda	0.91	4	2.58	9	1.95	5	88.50	6	6.0	7
Syndicate Bank	0.69	8.5	2.61	8	1.75	10	92.14	2	7.1	9
State Bank of Mysore	0.69	8.5	3.12	4	1.84	6.5	89.97	4	5.8	5
Indian Overseas Bank	0.43	10	3.22	3	1.83	8	90.15	3	6.0	7
ICICI Bank	1.38	3	3.08	5	2.69	3	80.33	9	5.0	4
Axis Bank	1.46	2	3.75	2	3.17	2	78.92	10	4.0	2
HDFC Bank	1.52	1	4.81	1	3.19	1	83.04	8	2.8	1
South Indian Bank	0.89	1	2.83	7	1.84	6.5	92.15	1	4.9	3
Canara Bank	0.84	6	2.40	10	1.79	9	89.61	5	7.5	10

the highest business per employee score amongst all the banks and also the highest Return on Net Worth.

Earnings Quality

The quality of earnings is a very important criterion in judging the performance of a bank. The quality of earnings is a reflection of the bank's ability to sustain the income generated. It strengthens the ability of the bank to sustain shocks arising from the risks it faces in its operations. Earnings are vital for supporting present and future operations. Good earnings help in increasing the capital base, paying dividends to the shareholders, increasing the capacity to absorb losses and also financing future expansion plans.

It can be observed that HDFC bank has been awarded the first position. HDFC Bank has maintained a lead position in three of the four parameters of Earnings Quality. Axis Bank follows with a ratio of 4.0 and has also maintained the second position in three of the four parameters. Both these banks have a low score when it comes to Interest Income to Total Income which indicates that the banks earn more out of other services than core lending activities. The third position has been occupied by South Indian Bank with a rank average of 4.9. Canara Bank is at the 10th position with an average rank of 7.5.

Liquidity

Liquidity is of prime importance for a bank. Liquidity measures the bank's ability to meet its financial obligations which are mainly demands from the depositors. Banks can meet their financial obligations by either mobilizing short term deposits from customers or by quickly converting their assets into cash. Dang (2001) observed that in banks in the US, adequate level of liquidity was synchronous with profitability. The inability of banks to match their short term liquidity requirements can cause an impact on the performance of banks by increasing their cost of funds as banks may now have to rely on borrowings at higher rates of interest.

The table 6 reveals that Bank of Baroda has the most comfortable liquidity position with an average ranking of 3.3 followed by Canara Bank with a ranking of 3.5. Bank of Baroda has a good ratio in three of the four parameters maintaining the first position which indicates it has a high liquidity level. The banks with the least liquidity are State Bank of Mysore and Axis Bank with an average ranking of 9.5.

Final CAMEL rankings

The average rankings from the individual parameters are consolidated to get the final CAMEL rankings.

Table 6: Liquidity ratios of sample banks

Name of Bank	Liquid Assets to Total Assets		Liquid Assets to Total Deposits		Liquid Assets to Demand Deposits		Government Securities to Total Assets		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
State Bank of India	8.65	3	11.23	4	103.49	7	19.40	7	5.3	4
Bank of Baroda	15.40	1	17.90	1	224.78	1	16.31	10	3.3	1
Syndicate Bank	8.17	5	9.47	7	102.07	8	19.75	6	6.5	8
State Bank of Mysore	5.41	10	6.44	10	103.56	6	21.78	4	7.5	9.5
Indian Overseas Bank	7.54	8	9.02	8	127.41	4	22.55	2	5.5	5.5
ICICI Bank	7.98	6	14.37	2	108.45	5	17.03	9	5.5	5.5
Axis Bank	7.64	7	10.08	5	52.21	10	19.03	8	7.5	9.5
HDFC Bank	8.70	2	11.56	3	59.69	9	22.02	3	4.3	3
South Indian Bank	7.51	9	8.42	9	213.24	2	20.73	5	6.3	7
Canara Bank	8.37	4	9.58	6	181.32	3	23.22	1	3.5	2

Table 7: Composite Ranking of CAMEL parameters of sample banks

Name of Bank	C	A	M	E	L	Average	Rank
HDFC Bank	4.8	2.0	5.8	2.8	4.3	3.94	1
Bank of Baroda	5.0	6.5	1.8	6.0	3.3	4.52	2
Axis Bank	6.5	2.5	3.1	4.0	7.5	4.72	3
ICICI Bank	7.8	3.3	5.0	5.0	5.5	5.32	4
Canara Bank	4.5	6.3	5.1	7.5	3.5	5.38	5
South Indian Bank	4.3	5.0	6.8	4.9	6.3	5.46	6
Syndicate Bank	5.0	6.3	5.5	7.1	6.5	6.08	7
State Bank of India	6.3	7.0	7.0	6.0	5.3	6.32	8
State Bank of Mysore	5.0	7.5	6.8	5.8	7.5	6.52	9
Indian Overseas Bank	6.0	8.8	8.3	6.0	5.5	6.92	10

The above table 7 depicts the overall CAMEL rankings of the 10 chosen banks. Under the Capital Adequacy parameter, South Indian Bank was at the top position and ICICI bank was at the last position. HDFC bank occupies the top position under the Asset Quality parameter and Indian Overseas Bank occupies the last position. It can be observed that Indian Overseas Bank has very high NPAs and its profit margins have dwindled over the last few years. In the Management Efficiency parameter, Bank of Baroda ranks first and again Indian Overseas Bank is at the last position. In the Earnings Quality parameter, HDFC bank is rated the best and Canara Bank occupies the last position. Finally, under the Liquidity parameter, Bank of Baroda occupies the prime position and both State Bank of Mysore and Axis Bank occupy the last position. Taking a consolidated view, it can be observed that HDFC bank is rated as the first bank among all the banks and Indian Overseas Bank is at the last position.



CONCLUSION

CAMEL approach is an important tool to assess the financial strengths of commercial banks. The analysis helps to identify financial weaknesses of banks and find remedial measures to strengthen the banks financially. RBI has initiated a Risk-Based supervision (RBS) system since 2012 where 30 large private and public sector banks have initially been identified for evaluation. The RBS helps to develop a risk profile of commercial banks. This method of supervision

addresses several concerns that exist today in the banks' ability to identify and manage key risks in its operations. With banks moving into this methodology of supervision, India will now be at par with best practices around the world.

The following are some of the findings from the analysis.

1. The Capital Adequacy ratio of all banks is much above the benchmark of 9% as mandated by RBI. The CAR of ICICI bank is the highest at 18.07%. The minimum capital adequacy requirement under BASEL III is 10.5% including Capital Conservation buffer of 2.5%. All the banks are having ratios above this benchmark.
2. The debt-equity ratios for the selected banks have been found to be less than 2:1. ICICI has the maximum ratio of 1.99:1. The ideal benchmark ratio is 2:1 for industries. However, for banks, this benchmark does not apply as the major source of funds for banks is from deposits which are debt for the bank. The debt used in this study considers only outside borrowings other than deposits.
3. NPAs of Indian Overseas bank is much higher than other banks. In fact, RBI has initiated the Prompt Corrective Action (PCA) process with IOB as it has run into losses in the recent years due to high NPAs.
4. Though ICICI bank's business per employee is low at the 8th position, the profit per employee is the highest. It can be inferred that the efficiency at ICICI is much higher as

compared with other banks.

- Profitability ratios are generally high in case of new private sector banks. Interest income ratio to total income is high in public sector banks. This indicates that public sector banks are more into the traditional business of lending whereas new private sector banks earn their income from non-fund based activities and investments. It can be seen that the total investment to total assets ratio is high in ICICI bank indicating that ICICI bank's investments earn

good returns for the bank. However, the ratio of government investments to total investments is low meaning that ICICI bank invests in high income generating securities rather than in government securities.

- The liquidity position of Bank of Baroda is high as compared to the other banks. Though liquidity is necessary, excessive liquidity may affect profitability.

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Table of CAMEL parameters, ratios used and interpretation of the same

Parameter	Ratio	Description	Interpretation
Capital Adequacy	Capital Adequacy ratio (CAR)	CAR is a ratio of Capital to Risk Weighted Assets. Risk weighting adjusts the value of an asset (loan) for risk by multiplying it with a factor that reflects its risk. $\frac{(\text{Tier I capital} + \text{Tier II capital})}{\text{Risk weighted assets}}$	As per BASEL II norms, RBI has stipulated a minimum of 9% CAR.
	Debt-Equity ratio	This is calculated as a ratio of total outside borrowings to net worth. Deposits have not been considered as borrowings. $\frac{\text{Total Outside borrowings}}{\text{Shareholder's net worth}}$	A ratio of 2:1 is considered ideal for industries. There is no stipulation for banks. A high ratio indicates high leverage and high risk.
	Total Advances to Total Assets	Indicates proportion of advances to total assets. $\frac{\text{Total Advances}}{\text{Total Assets}} \times 100$	A high ratio indicates banks' aggressiveness in lending, leading to better profitability for the bank.

A COMPARATIVE ANALYSIS OF PERFORMANCE OF SELECT TEN BANKS BASED ON CAMEL MODEL

Parameter	Ratio	Description	Interpretation
	Government Securities to Total Investments	Indicates the level of investment in government securities as compared to the total investments in other securities. $\frac{\text{Investment in govt. securities}}{\text{Total investments}} \times 100$	A higher ratio is preferable as it indicates lower risk.
Asset Quality	Net NPA to Net Advances Ratio	This is a measure of the overall quality of the bank's loan book. Non-performing assets cease to generate income for the bank. $\frac{\text{Net NPA}}{\text{Net Advances}} \times 100$	A lower ratio means that the NPAs of the bank is low and is preferred as it indicates good quality of the loans.
	Total Investments to Total Assets Ratio	Banks deploy their funds into investments to reduce the risk of their loans becoming non-performing assets. These funds are locked up and cannot be lent by the bank. $\frac{\text{Total Investments}}{\text{Total assets}} \times 100$	A higher ratio shows the conservative policy of a bank to safeguard their funds.
	Net NPA to Total Assets Ratio	Indicates efficiency of banks in assessing credit risk and recovering debts $\frac{\text{Net NPA}}{\text{Total Assets}} \times 100$	A lower ratio is a preferred one.
	Percentage change in Net NPAs	Helps to study the trend in the NPA over the years $\frac{\text{Change in NPA}}{\text{NPA of previous year}} \times 100$	A low increase is preferred
Management Efficiency	Business per employee	This ratio expresses the efficiency and productivity of the human resources in garnering business for the bank $\frac{\text{Total Business}}{\text{No. of Employees}}$	The higher the ratio the better will be the performance of the bank.
	Profit per employee	Indicates the productivity and efficiency of the employees in improving business and maximizing profitability $\frac{\text{Net Profit}}{\text{No. of Employees}}$	A high value is preferred; indicates higher efficiency and profitability
	Credit Deposit Ratio	Ratio indicates the ability of a bank to make optimal use of deposits which are low cost funds to maximize profits. $\frac{\text{Total Advances}}{\text{Total Deposits}} \times 100$	A ratio of 70% is considered moderate. Higher ratio indicates a bank is borrowing funds to create loans. A very high level of leverage is risky.
	Return on Net Worth (RONW)	This ratio is a measure of profitability. $\frac{\text{Net Profit}}{\text{Net Worth}} \times 100$	A high ratio is a favorable one. RONW can be expected to be upwards of 10%.
Earning Quality	Net Profit to Total Assets Ratio	This ratio is one of the profitability indicator ratios. It indicates the efficiency of utilization of assets to produce profits during a period. $\frac{\text{Net Profit}}{\text{Total Assets}} \times 100$	A high ratio is indicative of good performance. A ratio up to 2% to 3% is normal.
	Net Interest Income to Total Assets Ratio	Indicates the earning capacity of the bank and its ability to lend its resources to earn interest income $\frac{(\text{Net interest Income})}{\text{Total Assets}} \times 100$	A high ratio indicates good performance

A COMPARATIVE ANALYSIS OF PERFORMANCE OF SELECT TEN BANKS BASED ON CAMEL MODEL

Parameter	Ratio	Description	Interpretation
	Operating Profit to Total Assets Ratio	This ratio is a measure of operating efficiency. It measures the revenue left after paying away the operating costs. $\frac{\text{Operating Profit}}{\text{Total Assets}} \times 100$	A high ratio is a preferred as it indicates a high level of profitability and efficient management of operations.
	Interest Income to Total Income Ratio	This ratio measures the interest income generated from the banks' core activity of lending as a proportion to the banks' total income earned by the bank. $\frac{\text{Interest Income}}{\text{Total Income}} \times 100$	A high ratio indicates efficiency of the bank in conducting its core operations.
Liquidity	Liquid Assets to Total Assets Ratio	This ratio measures the liquidity position of the bank. It reveals the readiness of the bank to meet its financial obligations. $\frac{\text{Liquid Assets}}{\text{Total Assets}} \times 100$	A higher ratio is a preferred one as it indicates higher liquidity. Too high a level of liquidity is not good as funds remain idle.
	Liquid Assets to Total Deposits Ratio	This ratio indicates how efficient a bank is in meeting the unexpected deposit withdrawals by its customers with its own liquid assets. $\frac{\text{Liquid Assets}}{\text{Total Deposits}} \times 100$	Too high a ratio is not good as funds will remain idle.
	Liquid Assets to Demand Deposits Ratio	It reflects the ability of a bank to meet the demand of depositors for which the banks have to place their funds in a liquid form. Demand deposits are withdrawn on demand and hence a bank has to be always prepared to meet these obligations. $\frac{\text{Liquid Assets}}{\text{Demand Deposits}} \times 100$	
	Government Securities to Total Assets Ratio	Banks invest in government securities to meet their statutory requirements. Government securities are the most liquid and safest among different forms of investments. $\frac{\text{Govt. Securities}}{\text{Total Assets}} \times 100$	A higher ratio indicates safety and liquidity for the depositors.