

Comparative Analysis of Financial Performance of Top Six Commercial Banks Based on Camels Approach

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Abstract:

The role of the Financial Sector is very important for the well-being of the nation's economy. The banking industry is the essential component of any financial system, therefore an efficient and essential way to gauge the strength of an economy's financial system is to look at the banking sector's financial performance. The Camel approach serves as an important tool for evaluating the comparative financial strength of a bank and recommending essential actions to address its weaknesses. In India, the Reserve Bank of India (RBI) implemented this approach in 1996, following the suggestions made by the Padmanabham Working Group committee in 1995. In the present study an attempt has been made to rank the top six commercial banks in India using the CAMEL model. Analysis is conducted on the financial data of the top three public and private sector banks for a period of 10 years (2015-2024). The financial data is acquired from secondary sources like proweiss, Indian Banking Association & RBI websites. The study concluded that HDFC Bank stood at the Top Positions for capital adequacy, management efficiency, assets quality and earning parameters While PNB held the first rank Under liquidity parameter. Under the composite CAMEL ranking HDFC secured the first position followed by SBI, ICICI, Axis Bank, and PNB respectively while BOB held the last position.

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Introduction

Banks and other financial institutions are important for improving the economy. Murthy (2020). Economic growth is guaranteed when a country has a strong banking industry. The authentic advancement of the activities carried out by a banking sector fosters economic activity and promotes growth through the encouragement of savings and the mobilization of public funds. Consequently, when the banking sector functions effectively, economic success is assured. (AL-Najjar and Assous,2021). A contemporary economy is inconceivable without the services provided by banks. The banking sector has evolved into a global enterprise, as the functions of banking have transcended national borders(Islam and Rahaman 2018). Implementing a regulatory banking supervision framework is crucial for assessing overall performance. One such supervisory information metric is the CAMEL rating system, which was initially implemented in the United States of America in 1979. The Padmanabhan Working Group, Established by the Reserve Bank of India (RBI) in 1995, recommends the implementation of two distinct models for bank regulation in India: The CACS model for International banks doing business within India and the CAMEL approach for domestic banks..The CAMEL Metrics assesses the banks based on five main criteria: Capital Adequacy, Asset Quality, Management Efficiency, Earnings, and Liquidity. In 1996, the CAMEL model was added an extra criterion—'Sensitivity to Market Risk,' leading to the upgraded CAMELS framework. The CAMELS ratings play a vital role in evaluating the strengths and weaknesses of banking institutions. Since 1997, the RBI has employed the CAMEL framework to evaluate the performance of banks.

The CAMEL ratings utilize a measurement scale from 1 to 5, with 1 representing the highest ranking and the lowest rating is denoted by 5. High performance and efficient management are indicated by the ratings of 1 or 2, whereas ratings of 3, 4, and 5 indicate banks that are fundamentally underperforming.. Typically, banks are assessed annually; however, for those with low ratings, evaluations may occur more frequently.

Review of Literature

GL Meena (2016) evaluated the performance of banks and ranked them using the camel model. 20 banks were selected using stratified random sampling. Regression analysis and mean were used as statistical tools to conclude the findings of the study. The findings indicated that ICICI was the leader in Capital Adequacy. Yes Bank ranked the lowest regarding Debt Equity. The Central Bank of India recorded the highest Net NPA's to total assets ratio. In terms of managerial effectiveness, ICICI Bank was ranked the highest. HDFC excelled in Earning

Capacity, while BOB was the leader in Liquidity Parameters. The results of the regression analysis revealed that profit per employee, debt-equity ratio, total advances to total deposit ratio, and net NPA's to total advance ratio are significant factors influencing the financial performance of banks.

EM Ferrouhi (2014) employed the CAMEL model to pursue the evaluation of the performance of major Moroccan financial institutions. For the research purposes ATTIJARIWABA BANK (AWB), BANQUE CENTRALE POPULAIRE (BCP), BANQUE MAROCAINE POUR LE COMMERCE ET L'INDUSTRIE (BMCI), BANQUE MAROCAINE DU COMMERCE EXTERIEUR (BMCE BANK), CREDIT AGRICOLE DU MAROC (CAM) and CREDIT DUMAROC (CDM) during time period 2001-2011 was taken. The data collection was done from the annual reports and financial statements of banks. The findings exhibited that AWB was at the top in terms of Capital Adequacy. Under Assets Quality, BMCI secured the top ranking. In terms of Management Quality, BCP held the top ranking. BMCI secured the top position in terms of earning ability. Under the liquidity parameter, BCP was at the top. However, in terms of overall ranking, CDM stood at the top.

DSK Misra, P Aspal (2012) directed the study towards analyzing the financial position and performance of SBI Bank and its subsidiaries using the CAMEL model and statistical tools such as Arithmetic Mean, F-test, One Way ANOVA on the data collected from the annual reports published by the banks for the period of 3 years from 2009 to 2011. The findings of the study indicated that in Capital Adequacy Ratio, SBBJ and SBP were at the top position. Under the Assets Quality Parameter, SBBJ ranked first. In terms of management efficiency, SBT was the top-ranking bank. SBM ranked highest in terms of the Earning Quality Ratio. In the overall performance of State Bank Group, SBT outperformed all the other banks considered for the study. ANOVA result signified that there is no significant difference in the performance of SBI and its subsidiaries bank as per the CAMEL model.

Y Singh, R Milan (2023) The research aimed to explore the relationship between the performance of public sector banks in India and factors such as capital adequacy, liquidity, asset quality, and management efficiency. The CAMEL model, along with canonical correlation and dynamic panel modeling, was employed to assess the relationship between capital adequacy, asset quality, managerial efficiency, and liquidity concerning bank performance. The analysis utilized data sourced from annual reports, the World Bank database, and the OECD database spanning the period from 2008-09 to 2018-2019. The findings revealed that asset quality has a strongly negative correlation with the performance of public sector banks, while liquidity and inflation exhibited an inverse relationship with bank performance.

Conversely, capital adequacy showed a positive correlation with bank performance. GDP growth Considerably influences banks performance while managerial efficiency is insignificantly related to banks performance.

S Pandit, J Gandhi (2021) examined SBI and HDFC Bank's financial results in relation to a number of CAMEL parameters. The study was carried out between 2013–14 to 2019–20, a span of seven years. ANOVA was used to see whether the performance of the chosen banks differed in any way. The findings showed that SBI was superior to HDFC in terms of liquidity, while HDFC bank performed better on the three CAMEL model parameters of capital adequacy, asset quality, and management. Overall, HDFC did better than SBI Bank.

S Suman, and S Swati (2023) conducted a study using the CAMEL model to assess the performance of 12 commercial banks, 7 of which were public sector banks and 5 of which were private sector banks. The data was taken from the RBI website, the annual reports, and moneycontrol.com of the individual banks from 2004 to 2019. ANOVA and the arithmetic mean were employed as the study's statistical tool. According to the survey, ICICI Bank surpassed other banks in terms of capital adequacy. For the Assets Quality criterion, South Indian Bank performed quite well. When it came to managerial efficiency, Axis Bank was at the top. In the Liquidity Parameter, ICICI Bank was placed first, but HDFC Bank did better in Earning Quality. It was clear from a comprehensive analysis of the data that HDFC was at the top, followed by Axis Bank.

S Sharma, AK Patel(2019) conducted a study using the camel model to assess the financial performance and CAMEL parameter of the State Bank group's SBI, SBBJ, SBH, SBM, SBP, and SBT banks over a five-year period from 2010 to 2015. The balance sheet, profit and loss statements, and annual reports of the individual banks provided the data for the study. Additionally, to ascertain whether there was a truly significant difference in the calculated camel ratio among all of the chosen banks, the Kruskal-Wallis H test was used.. The outcome of the analysis demonstrated that the above-mentioned banks in the state bank group achieved varied ranks with respect to CAMEL parameters. In terms of ranking from 1-6 SBH was at the top, followed by SBBJ, SBP, SBT, SBM and SBI in the order respectively. Kruskal -Wallis H test concluded that there is no significant difference in the calculated CAMEL ratio among all the selected banks.

S Visalakshi, and R Kasilingam (2016) conducted research to evaluate banks' financial standing and performance using the CAMEL Model. Based on information gathered from the annual reports of different banks, the study involved analyzing the financial status and performance of ten banks in India, six of which were in the public sector and four of which were in the private sector. According to the evaluation, South Indian Bank ranked highest in the Capital Adequacy criterion.

When it came to the Asset's Quality metric, HDFC Bank performed better. When it comes to the Management Efficiency metric, BOB is at the top. HDFC topped the Earning Quality metric, while Bank of Baroda was placed first under the Liquidity metric. HDFC Bank held the top position in the CAMEL Composite Ranking.

S Biswas, and M Bhattacharya(2020) concentrated their study on comparing and analyzing the performance of new-generation private sector banks in India. Using purposive sampling technique 10 private sector banks were selected and secondary data was collected from annual reports of respective banks and money control.com for the period of five years from 2014-15 to 2018-19. Statistical technique mean, standard deviation and One way ANOVA was used. The findings of the study concluded that under the Capital Adequacy parameter, ICICI was at the top position. HDFC Bank excelled in terms of the Assets Quality parameter. IDFC's first bank secured first position under Management Quality. In Earning Quality and Liquidity Parameter, Bandhan Bank stood at the top. ANOVA analysis suggested there was a considerable variation in the performance of ten new generations of private sector banks.

S Palamalai, Y Swaminathan (2016) oversaw the study to anatomize the financial performance of 51 commercial banks out of which 25 were public sector banks, 18 were private sector banks, 08 were foreign banks. Data was taken for the time period 2012-2014 from the annual reports published by RBI. Mean and one-way ANOVA was used during the study. The result obtained indicated that among the public sector banks, UCO Bank secured the top position followed by IDBI Bank in all parameters of the CAMEL model. In private sector banks Axis Bank was at the top followed by Tamilnad Mercantile Bank Ltd., Among the foreign banks Royal Bank of Scotland N.V. scored the top ranking followed by CITI BANK. As per ANOVA testing there was a statistically significant difference between the mean values of the CAMEL ratio of public sector banks, private sector banks, and foreign sector banks.

PKSinghal(2020) evaluated the financial performance of Indian public sector banks using the CAMEL Model Approach. The study focused on assessing the financial performance of 21 Indian Public Sector Banks over a ten-year span, from 2008-09 to 2018-19, using information gathered from the RBI website and the banks' annual reports. The analysis result exhibited that under the Capital Adequacy parameter, BOB was the top bank. Under the Assets Quality parameter, Vijaya Bank ranked highest. Under the Managerial Efficiency parameter, BOB outperformed other banks. Under the Earning Quality parameter, Indian Bank excelled. In terms of Liquidity parameters, Syndicate Bank was the top-ranking bank. Indian Bank outperformed other banks in overall CAMEL ratings.

M Alemu, and M Aweke (2017) conducted a CAMEL model analysis on the Private sector Bank of Ethiopia to interpret a comparative evaluation of the performance

of the selected banks. For the Study six Private Commercial Banks named Awash Bank, Dashen Bank, Wegagaen Bank, NIB, Bank of Abyssinia, and United Bank were taken into consideration for the period of 2007-2016. The data for analysis was gathered from annual reports of selected banks. Statistical tools such as men, percentage, ratio and panel data regression models were utilized. The conclusion signified that under Capital Adequacy WEGAGEN Bank was at the top. In terms of the Assets Quality parameter, UB Bank ranks first, DB Banks secured the highest position under the Management Quality category, NIB Bank was at the top in terms of the Earning Quality parameter and finally in terms of liquidity, OB occupies the prime position. Further, in the overall composite ranking NIB Bank is rated the best among all the selected banks. The result obtained by the utilization of Panel model regression interpreted that LEVRAGE, NIEGE, NPEP, TDBRA, NIITA and LATD were significant in determining the profitability indicators – ROA and ROE.

CC Meetei, KR Singh, K Nao, TP Devi, and N Koveihrii (2024) carried out an assessment of the financial performance of banks using the CAMEL model and compared the results of the CAMEL model with the social banking ratio. The data was procured from annual reports, publications from RBI and other easily accessible databases. The evaluation included accessing the financial performance of SBI, BOB, HDFC, and ICICI based on the CAMEL model that covered a time period of 10 years from 2012-2021. Statistical tools like mean and ANOVA were put to use to reach the conclusion. The results indicated that, as per the CAMEL rating, HDFC Bank occupies the top position in terms of bank performance and private banks outperformed public sector banks. However, in terms of the social banking ratio, the public bank excelled in performance as compared to the private banks. It was also concluded that there was no significant difference among the selected banks as per the CAMEL model.

MTH Majumder, MM Rahman(2017) oversaw the performance of the banks of Bangladesh using the CAMEL model. The analysis was carried out on 15 selected banks in Bangladesh over a period of 5 years from 2009 to 2013. Data acquired from sources such as textbooks, research articles, electronic library sources and published annual financial reports of respective banks were made use of. ANOVA test employed to test the hypothesis. The outcome showed that IBBL Bank was the leading bank in terms of capital adequacy. AIBL Bank received the highest rating for Asset Quality. EBL Bank was ranked first in both the Management Efficiency and Earning Quality parameters, and DBBL Bank was placed first in the Liquidity metric. In terms of the total CAMEL ranking, EBL Bank did better than other banks. According to the CAMEL model, the performance of a few chosen banks in Bangladesh differed significantly, as indicated by the ANOVA result.

MD Sangmi, and T Nazir(2010) focused the study on utilizing the CAMEL Model to analyze the performance of Jammu and Kashmir Bank (JKB) and Punjab National Bank (PNB) over a five-year period from 2001 to 2005. For the study, secondary data was gathered from banks' published annual reports. The mean and standard deviation were employed as statistical tools. According to the study's findings, both banks kept their capital adequacy ratios over the 10% minimum needed. For PNB and JKB banks, the ratio of net non-performing assets to net advances was 3.42% and 1.76%, respectively. PNB's and JKB's advances and deposits had compound growth rates of 14% and 16%, respectively, while PNB's and JKB's operating profits had compound growth rates of 24% and 5% respectively. The average Net interest margin for PNB and JKB was 0.034 and 0.028 respectively. The liquid assets to deposit ratio for PNB and JKB bank was 0.148 and 0.100 respectively while the Investment to deposit ratio was 0.460 and 0.450 for PNB and JKB bank respectively.

J Kaur, M Kaur, S Singh(2015),oversaw the study that used the CAMEL model to assess the financial performance of five public sector banks over the five years from 2010 to 2014: SBI, BOB, PNB, BOI, and Canara Bank. The information was gathered from banks' annual reports. The result of the study revealed that BOB occupied the prime position in all parameters of the CAMEL Model approach followed by PNB bank.

Objective

1. To evaluate the financial performance of selected banks using the CAMELS model approach.
2. To rank the selected banks performance on the basis of CAMELS parameters for the past 10 years.

Research Methodology

The present study is a descriptive research study. A sample of a total of six banks, of which 3 top public sector banks viz. State Bank India (SBI), Punjab National Bank (PNB), and Bank of Baroda (BOB) and 3 top private sector banks viz. HDFC Bank, ICIC Bank, and Axis Bank are considered for the study purpose. The RBI, NSE, and BSE websites, as well as the annual reports released by the chosen banks, provided the data for the sample banks for the years 2015–2024. The chosen banks are being ranked according to their performance for the current study using the CAMEL ranking technique. Because it makes evaluating and analyzing bank financial data more easier to understand, a rating system has been implemented. This approach examines each bank's performance in relation to those of other banks. Based on how well they perform in each of the sub-parameters, all of the chosen banks are

ranked. To get the ranking in the CAMEL parameter, the rankings in the sub-parameters are combined using simple averages. To get the final CAMEL rating, these rankings will be consolidated once again. The different sub-parameters (ratios) chosen for evaluation based on the CAMEL model are shown in the following table. We will discuss these ratios separately.

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

CAMEL Parameter	Sub-Parameters Capital Adequacy
Capital adequacy	1 Capital Adequacy ratio 2 Debt/Equity ratios 3 Total Advances to Total Assets ratio
Assets Quality ratio	1 Net NPAs to Net Advances (%) ratio 2 Total Investment to total assets ratio 3 Gross NPAs to Advances (%) ratio
Management Efficiency	1 Business per Employee 2 Profit per Employee 3 Total Advances to Total Deposit ratio
Earnings Quality	1 Net Profit margin in (%) 2 Return on Assets 3 Earning per Share 4 Operating Profit to Total Assets ratio
Liquidity Ratio	1 Liquid Assets to Total Assets 2 Liquid Assets to Total Deposits 3 Liquid Assets to Demand Deposits 4 G-securities to Total Assets

Table 2: Capital Adequacy ratios of banks

Name of Bank	Capital Adequacy Ratio		Debt-Equity Ratio		Advances/Assets		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
Axis Bank	16.72	3	1.79	5	64.36	2	3.33	3
Bank of Baroda	14.01	4	1.13	3	66.30	1	2.67	2
HDFC Bank	18.82	1	0.92	1	61.21	4	2.0	1
ICICI Bank	17.54	2	1.29	4	60.55	5	3.67	4
PNB	12.85	6	0.95	2	59.80	6	4.67	5.5
SBI	13.31	5	1.81	6	63.70	3	4.67	5.5

One of the most important measures of the banking system's financial stability is capital adequacy. In addition to having the capacity to identify, monitor and control these risks, a financial institution must keep capital that is proportionate to the type and magnitude of those risks. The Capital Adequacy Ratio (CAR) gauges a bank's capacity to withstand a manageable amount of losses brought on by the risks associated with its operations. The rankings derived from the Capital Adequacy sub-parameters are used to build the Capital Adequacy ratios table. HDFC Bank has the highest score of 18.82 under the Capital Adequacy ratio. According to the debt-to-equity ratio, HDFC Bank has the best performance. When it comes to the Assets to Advances ratio, HDFC Bank is at the top. The bank's financial health and strength are shown by the aforementioned ratios. The ranks in each of the different components have been averaged. Better financial health is indicated by a lower rank. HDFC is the top performer, followed by Bank of Baroda, and Axis Bank is ranked last, according to the final rating based on all the criteria.

Table 3: Asset Quality ratios of banks

Name of Bank	Net NPAs to Net Advances %		Total Investment to Total Assets		GNPAs to Advances %		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
Axis Bank	1.34	2	0.22	5	3.45	2	3.0	2
Bank of Baroda	3	5	0.22	6	7.89	5	5.33	6
HDFC Bank	0.33	1	0.23	3	1.17	1	1.67	1
ICICI Bank	2.23	3	0.23	4	4.99	3	3.33	3.5
PNB	5.80	6	0.27	1	12.04	6	4.33	5
SBI	2.44	4	0.27	2	5.62	4	3.33	3.5

The condition of commercial banks can be evaluated based on the quality of the assets they possess.

The quality of an asset (loan) is reliant on the borrower's ability to fulfill repayment obligations. NPAs are classified as assets where the likelihood of loan recovery is questionable. Asset Quality can be evaluated by calculating the values associated with Non-Performing Assets (NPA). These assets create stress on the bank's performance and its profitability. The components of Asset Quality are the foundation upon which the Asset Quality ratios table is built. The ranks in each of the different components have been averaged. With an average rating of 1.67, it is evident that HDFC is in first place, followed by Axis Bank. Bank of Baroda gets the lowest rank..

Table 4: Management Quality ratios of banks

Name of Bank	Business Per Employee		Profit/Loss Per Employee		Total Advances to Total Deposit Ratio		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
Axis Bank	166.43	4	1.05	3	0.82	2	3.0	1
Bank of Baroda	207.23	2	0.57	5	0.65	5	4.0	5
HDFC Bank	164.07	5	2.21	1	0.78	3	3.0	1
ICICI Bank	128.91	6	1.59	2	0.82	1	3.0	1
PNB	174.37	3	-0.12	6	0.62	6	5.0	6
SBI	212.56	1	0.88	4	0.68	4	3.0	1

Effective management is crucial for the performance of any organization. The ability of management significantly contributes to the success of an organization. This component is evaluated through several metrics that reflect workforce efficiency, resource management, the business ratio per employee, profit and loss figures per employee, and the total advances compared to total deposits. The aforementioned individual components of management efficiency serve as the foundation for the creation of the composite management efficiency table. The ranks in each of the different components have been averaged.. In terms of business per employee SBI tops the chart, in terms of profit loss per employee HDFC stood at first position and in total advances to total deposits ICICI Bank secured first rank. In group ranking Axis Bank, HDFC Bank, ICICI Bank and SBI hold the highest position with an average group score of 3.0 PNB occupies the last position.

Table 5: Earning Quality ratios of banks

Name of Banks	Net Profit Margin		Return on Assets		EPS		Operating Profit to Total Assets		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
Axis Bank	3.22	3	0.96	3	28.30	2	19.58	3	2.75	3
Bank of Baroda	1.55	5	0.25	5	6.79	5	10.17	6	5.25	5
HDFC Bank	18.61	2	1.97	1	59.17	1	23.62	1	1.25	1
ICIC Bank	15.18	1	1.46	2	24.12	4	22.31	2	2.25	2
PNB	(6.67)	6	(0.16)	6	(6.82)	6	10.69	5	5.75	6
SBI	3.14	4	0.52	4	23.65	3	11.06	4	3.75	4

The quality of earnings is an essential benchmark for assessing a bank's performance. It indicates the institution's ability to sustain its generated income. Additionally, it enhances the bank's capacity to withstand shocks arising from operational risks. Earnings play a fundamental role in facilitating both current and future operations. Strong profits contribute to the enhancement of the capital base, facilitate the distribution of dividends to shareholders, improve the ability to withstand losses, and support the financing of future expansion plans. It is evident that HDFC Bank has been given the top spot. HDFC Bank has consistently held the top spot in three of the four Earnings Quality criteria. The second-place ranking has been held by ICICI Bank. Currently, Axis Bank holds the third place. PNB is positioned last.

Table 6: Liquidity Parameters of Banks

Name of Bank	Liquid Assets		Liquid Asset		Liquid Assets		G-Sec to		Group Rank	
	Total Assets		Total deposit		Demand deposits		Total Assets			
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
Axis Bank	17.50	6	24.36	5	150.14	6	16.66	6	5.75	6
Bank of Baroda	19.67	4	23.12	6	304.87	3	19.28	3	4.0	4
HDFC Bank	19.84	3	26.17	3	172.45	5	19.30	4	3.75	3
ICICI Bank	18.04	5	26.10	4	184.87	4	17.27	5	4.75	5
PNB	22.87	1	26.26	2	420.86	1	22.59	1	1.25	1
SBI	22.45	2	27.97	1	405.18	2	21.96	2	1.75	2

Liquidity holds significant importance for a bank. It assesses the bank's capability to fulfill its financial commitments, primarily arising from the demands of depositors. Banks can address these financial obligations by either attracting short-term deposits from clients or by swiftly converting their assets into liquid cash. A bank's failure to align its short-term liquidity needs can adversely affect its performance, as it may lead to higher funding costs when banks are compelled to depend on borrowings at increased interest rates. With an average group ranking of 1.25, PNB has the most comfortable liquidity position, followed by SBI with a ranking of 1.75, according to Table 6. Maintaining its top position, PNB has a strong ratio in three of the four metrics, indicating a high level of liquidity. With average group scores of 4.75 and 5.75, respectively, ICICI Bank and Axis Bank are the least liquid banks.

Table 7: Composite Ranking of CAMEL parameters of banks

Name of Bank	C	A	M	E	L	Group Average	Group Rank
Axis Bank	3.33	3.0	3.0	2.75	5.75	3.57	4
BOB	2.67	5.33	4.0	5.25	4.0	4.25	6
HDFC	2.0	1.67	3.0	1.25	3.75	2.33	1
ICICI	3.67	3.33	3.0	2.25	4.75	3.4	3
PNB	4.67	4.33	5.0	5.75	1.25	4.2	5
SBI	4.67	3.33	3.0	3.75	1.75	3.3	2

The CAMEL technique is a crucial instrument for evaluating commercial banks' financial health. The analysis aids in determining the banks' financial vulnerabilities and identifying corrective actions to fortify their finances. Since 2012, the RBI has implemented a Risk-Based Supervision (RBS) system, in which 30 sizable public and private sector banks were first selected for assessment. The RBS contributes to the creation of commercial banks' risk profiles. This supervision approach tackles a number of issues that now affecting banks' capacity to recognize and control major operational risks. India will now be on par with global best practices as banks adopt this oversight system. Some of the conclusions drawn from the analysis are listed below.

All banks' capital adequacy ratios are significantly higher than the RBI-mandated guideline of 9%. According to our analysis, HDFC ranked first in terms of the capital adequacy ratio metric, followed by ICICI Bank, while SBI and PNB received the lowest rankings.

HDFC Bank was ranked first, followed by Axis Bank, while Bank of Baroda was ranked worst in terms of the Asset Quality metric. This might have been caused by Bank of Baroda's worst performance in the ratios of gross non-performing assets to total advances, total investments to total assets, and net non-performing assets to net advances.

According to the Management Efficiency metric, Axis Bank, HDFC Bank, ICICI Bank, and SBI Bank were ranked highest, while PNB was ranked lowest. PNB's negative performance in terms of total advances to total deposits and profit per employee may have been the cause of this.

HDFC was ranked first in terms of the Earning Quality metric, followed by ICICI Bank, while PNB was ranked last. This might have been caused by PNB's poor results in terms of earnings per share, return on assets, and net profit margin.

Axis Bank was ranked lowest and PNB was ranked highest under the liquidity metric. This could have been caused by Axis Bank's poor performance in terms of G-sec to total assets, liquid assets to total assets, liquid assets to total deposits, and liquid assets to demand deposits ratios.

In the overall group ranking of banks, HDFC secured the first position followed by SBI Bank, ICICI Bank, Axis Bank, PNB Bank and Bank of Baroda respectively.

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