Financial Performance Analysis of Selected Banks using CAMEL Approach

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Abstract: The paper has made a modest attempt to analyze the performance of eleven commercial banks in India during the period 2013 to 2017, using CAMEL approach. Based on the various ratios under CAMEL parameter, it is observed that Kotak Bank and HDFC Bank are the top performers while the public sector giant State Bank of India and Punjab National bank are at the bottom. This study also reveals the financial position and soundness among top eleven commercial banks.

Keywords: CAMEL Approach, Efficiency, Soundness, Financial Position

Introduction

The banking sector is the backbone of the economy of a country and occupies the core position. Banks occupy the prime position in any financial system by virtue of the significant role they play in economic growth by undergoing transformations and supporting the critical payment systems. The specificity of banks, the volatility of financial markets, increased competition and diversification and initiated banks towards assessing risks and challenges. In the wake of recurring bank failures and consequent financial crisis over the last two decades, the authorities across the globe have tried to limit the impact of bank failures and provided safety nets in the form of deposit insurance and liquidity support by Central banks/ governments. This creates the need of effective supervisory system and a tool to ensure safety and soundness of the banks (RBI, 2012). The Indian banks in general and the Public Sector Banks (PSBs) in particular, are grappling with the huge stock of stressed assets that has piled up in the system over the years. This has led to the phenomenal build-up of Non-Performing *Spelling corrections Assets-*Aassets (NPAs). This stress on the assets has impacted as a sharp decline in net interest margin of the banks. In such view of things, measuring financial performance of the banks is a matter of serious interest for regulators, customers, investors and managers.

This paper is divided into five sections. Section II elaborates a review of literature on CAMEL approach and its utility over a period of time from 1999 to 2013. Section III is the research methodology in the study. Ratios and results are provided in section IV and section V concludes with suggestion for future research.

Review of Literature

This section of the paper incorporates brief review of literature on performance and soundness measurement of banks using CAMEL approach. Sathye (2005) studied the financial performance of the Indian banking sector for the period of 1998 to 2002. The focus of the research was on

traditional financial ratios to measure the performance of Indian banks in context of Indian strategy of privatization. B. Nimalathasan (2008) compared a financial performance of 48 banks in Bangladesh using CAMELS approach from financial year 1999–2006. This analysis divided Bangladesh banking sector into four categories to apply the CAMELS rating. Manoj P. K. (2010) in his paper makes a comparative analysis of the financial soundness of old private sector banks in India and also benchmarks Kerala based old private sector banks with national level banks using CAMEL rating model. This study focused on ten years' period from FY 2000 to 2009. For the analysis, scores under every parameter under each group of CAMEL are averaged and then ranked accordingly. Further, individual rankings are averaged to identify group rankings which further averaged to reach the overall rankings. Apart from CAMEL model, for bench marking, 't' test is used. The author revealed that all Kerala based old private sector banks are lagging behind the best in class old private sector banks at nationalized level in financial soundness. Prasad K.V.N. and Ravinder G. (2012) evaluated the performance of the Indian banking sector by choosing 20 nationalized banks for the period of 2005–06 to 2009–10. The composite rank is achieved using average of ranks for individual parameters as well as group ranking. Mishra A.K. *et al.* (2012) analyzed the soundness in Indian banking by focusing on twelve banks which are traded on National Stock Exchange and are part of CNX Bank Index. The overall ranking of the banks is presented by analyzing the data over eleven year's period of 2000 to 2011 using CAMEL approach. The findings of the study state that Public Sector Banks are lagging in comparison to Private Sector Banks on performance. Reddy K.S. (2012) computed the relative positions of public sector, domestic private sector and foreign banks by giving the ranks for the period 1999 to 2009 using CAMEL ratios. The author observed the significant improvement in performance of public sector banks. Gupta R. (2014) scrutinized the performance of public sector banks in India using CAMEL approach for a five year period from 2009 to 2013. Andhra Bank was found to be the best performer among public sector banks. Kaur P. (2015) analyzed the financial performance of five public sector banks and five private sector banks for the period 2009 to 2014 using CAMEL model. This study revealed that profit per employee, total advances to deposits and CAR is most impacting factor on performance of the banks.

Research Methodology

Framework of CAMEL Approach

Regulators, analysts and investors have to periodically assess the financial condition of each bank. Banks are rated on various parameters, based on financial and non-financial performance. The popularly used assessment goes by the acronym CAMELS, where each letter refers to a specific category of performance. The components of the CAMELS rating system comprise of both objective and subjective parameters. The details are based on publicly available information published at Reserve Bank of India, Indian Banks Association, referred papers and a book.

C-Capital Adequacy: This indicates the bank's capacity to maintain capital commensurate with the nature and extent of all types of risks, as also the ability of the bank's managers to

identify, measure, monitor and control these risks. In accordance with this following ratios are considered: i. Capital Adequacy Ratio ii. Equity Capital to Total Assets iii. Advances to Total Assets Ratio iv. Government Securities to Total Investments

A-Asset Quality: This measure reflects the magnitude of credit risk prevailing in the bank due to its composition and quality of loans, advances, investments and off-balance sheet activities. Following ratios are considered for the purpose of analysis (i) Net NPAs to Net Advances (ii) Net NPAs to Total Assets (iii) Total Investments to Total Assets.

M-Management Quality: Signaling the ability of the board of directors and senior managers to identify, measure, monitor and control risks associated with banking. This qualitative measure uses risk management policies and processes as indicators of sound management. Following ratios are identified to indicate the quality perspective: (i) Business per employee (ii) Profit per employee (iii) Total advances to total deposits (iv) Return on Net Worth

E-Earnings: This indicator not only shows the amount of and the trend in earnings but also analyses the robustness of expected earnings growth in future. For better understanding of above dynamics, following ratios are considered: (i) Return on Assets (ROA), (ii) Net Interest Margin (NIM), (iii) Interest income to Total income, (iv) Cost to Income ratio

L-Liquidity: This measure takes into account the adequacy of the bank's current and potential sources of liquidity, including the strength of its fund management practices. To measure this impact, following ratios are used. (i) Liquid Assets to Demand Deposits (ii) Liquid Assets to Total Deposits iii. Liquid Assets to Total Assets

S-Sensitivity to Market Risk: This is a recent addition to the ratings parameters and reflects the degree to which changes in interest rates, commodity prices and equity prices can affect earnings and hence, the bank's capital. Because of lack of availability of data for this parameter, this group component is not considered in this paper.

The selection of the banks is based on the NIFTY Bank Index which comprises of most liquid and large Indian banking stocks. This Index has 12 stocks from the banking sector which trades on the National Stock Exchange of India Ltd. (NSE). This Index is computed using free float market capitalization method. Twelve banks considered for evaluation are ICICI Bank Ltd., Kotak Mahindra Bank Ltd., Indus Ind Bank Ltd., Federal Bank Ltd., Axis Bank Ltd., HDFC Bank Ltd., State Bank of India Ltd. (SBI), Canara Bank Ltd., Bank of Baroda Ltd., Yes Bank Ltd., Punjab National bank Ltd. and IDFC Bank Ltd. For the purpose of CAMEL ratio calculations, the data is obtained from ACE Equity software. This data is evaluated for a period of five years from financial year 2013 to 2017. IDFC Bank Ltd. is excluded from the data set as data for this bank is available only for FY 2016 and 2017.

The selected banks will be ranked after calculation of ratios for each parameter. The best ratio is ranked 1 while the worst is ranked 11. In case of tie, the rank will be average of the ranks.

Results and Discussion

For every parameter of acronym CAMEL, individual ratios are calculated for the period of FY 2013 to FY 2017. Each ratio is averaged further to reach the group ranking. Table 1 to Table 6 represent the average of individual ratios under each parameter of CAMEL from the year 2013 to 2017. The source of this data is ACE equity database by Accord Fintech.

Table 1: Capital Adequacy Individual Ratios Average (FY 2013–017)

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Capital Adequacy Ratio	17.188	17.278	14.183	14.230	15.350	15.735	12.668	11.283	12.573	15.875	11.668
Equity Capital to Total Assets	0.124	0.128	0.105	0.088	0.0970	0.0971	0.062	0.050	0.054	0.079	0.059
Advances to Total Assets	0.583	0.612	0.6210	0.615	0.607	0.6207	0.636	0.595	0.585	0.550	0.622
G. Sec. to Total Investments	0.624	0.766	0.779	0.745	0.671	0.780	0.775	0.874	0.837	0.644	0.802

Table 2: Asset Quality Individual Ratios Average FY 2013–2017

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Net NPA to Net Advances	2.352	0.992	0.340	1.074	0.822	0.266	2.862	3.912	2.894	0.256	5.136
Net NPA to Total Assets	0.014	0.006	0.0021	0.007	0.005	0.0017	0.018	0.023	0.017	0.0015	0.031
Total Invest to Total Assets	0.2587	0.277	0.233	0.276	0.269	0.2589	0.242	0.265	0.185	0.331	0.255

Table 3: Management Quality Individual Ratios Average (FY 2013–2017)

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Business per employee (Rs. in Cr.)	8.492	7.310	7.916	11.678	13.400	10.050	12.554	14.362	17.744	16.694	13.086
Profit per employee (Rs. in Cr.)	0.140	0.098	0.096	0.074	0.142	0.126	0.054	1.406	0.086	0.206	0.028
Total Advances to Total Deposits (CDR)	101.287	89.032	90.034	74.026	86.340	83.134	83.510	69.200	67.782	81.705	74.833
Return on Net Worth %	12.792	13.562	17.250	11.196	15.456	19.440	10.070	5.542	5.618	21.936	5.572

Table 4: Earnings Quality Individual Ratios Average FY (2013–2017)

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Return on Assets (ROA)	1.576	1.716	1.822	1.056	1.478	1.854	0.632	0.296	0.312	1.626	0.350
Net Interest Margin (NIM)	3.060	4.070	3.718	3.282	3.204	4.044	2.732	1.876	1.984	2.716	2.708
Interest Income to Total Income	0.790	0.852	0.800	0.901	0.805	0.843	0.864	0.895	0.894	0.840	0.886
Cost to Income Ratio	37.242	51.654	47.276	50.888	40.740	45.480	49.420	48.992	44.604	40.270	44.114

Table 5: Liquidity Individual Ratios Average FY (2013–2017)

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Liquid Assets to Demand Deposits	3.538	2.792	2.819	6.045	2.134	2.260	4.538	10.376	8.046	4.182	6.050
Liquid Assets to Total Deposits	0.482	0.453	0.458	0.338	0.393	0.383	0.369	0.442	0.599	0.429	0.424
Liquid Assets to Total Assets	0.278	0.310	0.316	0.281	0.277	0.286	0.280	0.380	0.517	0.289	0.353

Using Table 1 to Table 5, individual ranking for each ratio of all five parameters of CAMEL is given. This ranking is from 1 to 11, where rank 1 defines the best value of a particular ratio among all eleven banks while rank 11 defines the worst value of a particular ratio. This ranking is shown in Table 6 to Table 10. These ranks are further averaged to reach the group ranking of each parameter of CAMEL. All the calculations are based on MS Excel.

Table 6: Capital Adequacy Parameter Group Ranking

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Capital Adequacy Ratio	2.000	1.000	7.000	6.000	5.000	4.000	8.000	11.000	9.000	3.000	10.000
Equity Capital to Total Assets	2.000	1.000	3.000	4.000	6.000	5.000	8.000	11.000	10.000	7.000	9.000
Advances to Total Assets	10.000	6.000	3.000	5.000	7.000	4.000	1.000	8.000	9.000	11.000	2.000
Govt. Sec. to Total Investments	11.000	7.000	5.000	8.000	9.000	4.000	6.000	1.000	2.000	10.000	3.000
Avg. of Individual Rankings	6.250	3.750	4.500	5.750	6.750	4.250	5.750	7.750	7.500	7.750	6.000
Group Ranking	7.000	1.000	3.000	4.500	8.000	2.000	4.500	10.500	9.000	10.500	6.000

Table 7: Asset Quality Parameter Group Ranking

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Net NPA to Net Advances	7.000	5.000	3.000	6.000	4.000	2.000	8.000	10.000	9.000	1.000	11.000
Net NPA to Total Assets	7.000	5.000	3.000	6.000	4.000	2.000	9.000	10.000	8.000	1.000	11.000
Total Invest. to Total Assets	7.000	2.000	10.000	3.000	4.000	6.000	9.000	5.000	11.000	1.000	8.000
Avg. of individual rankings	7.000	4.000	5.333	5.000	4.000	3.333	8.667	8.333	9.333	1.000	10.000
Group Ranking	7.000	3.500	6.000	5.000	3.500	2.000	9.000	8.000	10.000	1.000	11.000

Table 8: Management Quality Parameter Group Ranking

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Business per employee (Rs. In Cr.)	9.000	11.000	10.000	7.000	4.000	8.000	6.000	3.000	1.000	2.000	5.000
Profit per employee (Rs. In Cr.)	4.000	6.000	7.000	9.000	3.000	5.000	10.000	1.000	8.000	2.000	11.000
Total Advances to Total Deposits (CDR)	1.000	3.000	2.000	9.000	4.000	6.000	5.000	10.000	11.000	7.000	8.000
Return on Net Worth (RONW) %	6.000	5.000	3.000	7.000	4.000	2.000	8.000	11.000	9.000	1.000	10.000
Avg. of individual rankings	5.000	6.250	5.500	8.000	3.750	5.250	7.250	6.250	7.250	3.000	8.500
Group Ranking	3.000	6.500	5.000	10.000	2.000	4.000	8.500	6.500	8.500	1.000	11.000

Table 9: Earnings Quality Parameter Group Ranking

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Return on Assets (ROA)	5.000	3.000	2.000	7.000	6.000	1.000	8.000	11.000	10.000	4.000	9.000
Net Interest Margin Ratio (NIM)	6.000	1.000	3.000	4.000	5.000	2.000	7.000	11.000	10.000	8.000	9.000
Interest Income to Total Income	11.000	6.000	10.000	1.000	9.000	7.000	5.000	2.000	3.000	8.000	4.000
Cost to Income Ratio	1.000	11.000	7.000	10.000	3.000	6.000	9.000	8.000	5.000	2.000	4.000
Avg. of individual rankings	5.750	5.250	5.500	5.500	5.750	4.000	7.250	8.000	7.000	5.500	6.500
Group Ranking	6.500	2.000	4.000	4.000	6.500	1.000	10.000	11.000	9.000	4.000	8.000

Table 10: Liquidity Parameter Group Ranking

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
Liquid Assets to Demand Deposits	7.000	9.000	8.000	4.000	11.000	10.000	5.000	1.000	2.000	6.000	3.000
Liquid Assets to Total Deposits	2.000	4.000	3.000	11.000	8.000	9.000	10.000	5.000	1.000	6.000	7.000
Liquid Assets to Total Assets	10.000	5.000	4.000	8.000	11.000	7.000	9.000	2.000	1.000	6.000	3.000
Avg. of individual rankings	6.333	6.000	5.000	7.667	10.000	8.667	8.000	2.667	1.333	6.000	4.333
Group Ranking	7.000	5.500	4.000	8.000	11.000	10.000	9.000	2.000	1.000	5.500	3.000

The overall ranking of all eleven banks considering all sub-criteria rankings under CAMEL analysis is shown in Table 11. The group rankings obtained in Table 6 to Table 10 are further averaged to reach the overall ranking for each parameter of acronym CAMEL for all eleven banks for the period of FY 2013 to 2017.

Table 11: Overall CAMEL Ranking FY 2013–2017

	ICICI	Kotak	Indus Ind	Federal	Axis	HDFC	SBI	Canara	BOB	Yes Bank	PNB
C- Capital Adequacy	7.000	1.000	3.000	4.500	8.000	2.000	4.500	10.500	9.000	10.500	6.000
A- Asset Quality	7.000	3.500	6.000	5.000	3.500	2.000	9.000	8.000	10.000	1.000	11.000
M- Management Quality	3.000	6.500	5.000	10.000	2.000	4.000	8.500	6.500	8.500	1.000	11.000
E- Earnings Quality	6.500	2.000	4.000	4.000	6.500	1.000	10.000	11.000	9.000	4.000	8.000
L- Liquidity	7.000	5.500	4.000	8.000	11.000	10.000	9.000	2.000	1.000	5.500	3.000
Average of Group Rankings	6.100	3.700	4.400	6.300	6.200	3.800	8.200	7.600	7.500	4.400	7.800
Overall Ranking	5.000	1.000	3.500	7.000	6.000	2.000	11.000	9.000	8.000	3.500	10.000

The results obtained from CAMEL approach indicate, Kotak Mahindra Bank as the most efficient and sound bank in financial analysis for the period of FY 2013 to 2017. Even though HDFC Bank is at second position in overall ranking, the position is sounder in case of Earning quality and Management quality parameter than any other bank out of the selected eleven. By increasing liquid assets, the position of HDFC Bank will be better than Kotak Mahindra Bank. Yes Bank and Indus IndBank are at the same position. But in case of Yes Bank, variation in a rank of all five parameters is more as compared to Indus IndBank. The bottom position is with the biggest bank of India i.e. State Bank of India. The scale of the bank seems to be the reason for such a low efficiency among other peer banks. Non-performing assets proportion has scaled up in most of the banks. Impact of this is clearly seen on returns on assets as well as returns on net worth of these banks over a span of five years. Decreasing level of interest income as compared to total income, clearly indicate the growth in other income avenues of all selected eleven banks.

Conclusion

Financial performance analysis of an individual entity is easier as compared to the industry; specifically for banking, the traditional approach of ratio analysis under the CAMEL approach is preferred. The sample of banks in this article represents the top eleven banks in a country with respect to market capitalization. This study can be further extended for all public sector, private sector and foreign banks for better analysis of the banking industry. During this study, author has also observed a new tool for efficiency measurement, Data Envelopment Analysis (DEA). Further scope for the study is to use DEA model and benchmark the inefficient banks for improvement in the performance of the non efficient ones. This study is restricted to ranking of the banks based on CAMEL parameters and analyzing the performance of the banks based on these rankings. Further study can be extended to compare the performance of the banks based on management style. This study gives a brief idea about the position of the top banks in India. It also helps to understand the impact of various parameters on profitability of the banks. Risk profile, liquidity position, asset quality, earning approach and management quality can be estimated and further action can be taken for better performance of the banks. This study clearly shows that private sector banks have outperformed the public sector banks on all the parameters discussed above. Finally, the results and interpretations are subject to the secondary data obtained from annual reports and databases. Hence, the findings of the study are suggestive rather than conclusive and more investigation needed to address the issues identified.

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