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FINANCIAL PERFORMANCE ANALYSIS OF VARIOUS PUBLIC & PRIVATE SECTOR BANKS USING CAMEL MODEL

KEY WORDS: Financial Performance Analysis, CAMEL Model, Public Banks, Private Banks

Dr Sneha S Shukla

Professor, Faculty of Management, GLS University

ABSTRACT

Banking sector is an important component of Indian Financial System. It plays a key role in the economic development of India stimulating capital formation, innovation and monetization in addition to facilitation of monetary policy. Continuous Performance evaluation of it from time to time is therefore necessary to ensure financial stability of an economy. In the light of world-wide banking crisis in past years, it becomes important to evaluate the overall performance of banks by implementing a regulatory banking supervision framework. CAMEL approach is one such useful tool to examine the safety and soundness of banks. In the present study, the financial performance of selected public and private sector banks in India is measured on the basis of ratios like Capital Adequacy, Assets Quality, Management Capability, Earnings Ability, and Liquidity using CAMEL model.

INTRODUCTION

Banking sector is an important component of Indian Financial System. It plays a key role in the economic development of India stimulating capital formation, innovation and monetization in addition to facilitation of monetary policy. It has also undergone a complex, but comprehensive phase of restructuring since 1991, with a view to make it sound, efficient, and at the same time forging its links firmly with the real sector for promotion of savings, investment and growth. Some improvements in the Indian banking sector has been seen after the reforms. Continuous Performance evaluation of it from time to time is therefore necessary to ensure financial stability of an economy. In the light of world-wide banking crisis in past years, it becomes important to evaluate the overall performance of banks by implementing a regulatory banking supervision framework. CAMEL approach is one such useful tool to examine the safety and soundness of banks. It is a framework under which banks are required to enhance capital adequacy, strengthen asset quality, improve management, increase earnings and reduce sensitivity to various financial risks.

Review of Literature

Various scholars have made several studies on the financial performance analysis of banking sector in India using CAMEL model. Some of the important studies reviewed for present paper are as under:

(Bothra & Purohit, Mar-2018) conducted comparative study of ICICI bank and SBI through CAMEL approach and the study revealed that ranking of ratios is different of ICICI bank and SBI bank. But there was no statistically significant difference between the CAMEL ratios. ICICI needs to improve its position with regard to Capital adequacy and asset quality, while SBI needs to improve its position with regard to Management Efficiency, Earning quality and Liquidity.

(Vinod & Bhawna, July 2017) considered top 5 private banks in the study and compared their performance with the parameters of CAMEL model and it was found the axis bank is at the top position whereas IndusInd bank was at the lowest position compared to other banks under the study due to its poor performance in context of Capital Adequacy, Earnings Ability and Liquidity whereas it performed better in case of capital adequacy. So it was suggested IndusInd bank should improve its position in low performed areas.

(Dr.Srinivasan & Saminathan, march 2016) carried out to rank the various commercial banks operating in India. The banks in India have been categorized into Public sector, Private sector, and Foreign banks where 25 Public Sector, 18 Private Sector, and 8 foreign banks were considered for the study. And it was known that in India, RBI adopted this approach in 1996 followed on the recommendations of Padmanabham Working Group (1995) committee. And it was found that CAMEL approach is significant tool to assess the relative financial strength of a bank and to suggest necessary measures to improve weaknesses of a bank.

(Ahsan, March 2016) conducted the study to examine financial performance of three selected Islamic banks among eight Islamic banks in Bangladesh during 2007-2014 based on the CAMEL model. This study was based on measuring performance of banks with respect to CAMEL model and shows that all selected Islamic banks (IBBL, EXIM bank, and SJIBL) financial performance under CAMEL rating was "strong" in every respect.

(Jagjeet & Dr.Harsh, July-Sept 2016) carried out CAMEL analysis of selected public sector banks and on the basis of various ratios used under the CAMEL rating, it was found that Bank of Baroda and PNB are considered the most stable banks; Indian Bank and IDBI banks, Canara Bank & SBI are considered average, and the Union Bank, Bank of India, Syndicate Bank & CBI are considered below average, and are closely monitored to ensure their viability

(Kumar Aspal & Dhawan, Oct-Dec 2016) found that CAMEL model is important tool to evaluate the relative financial strength of a banking system and to suggest suitable remedies to improve the deficiencies. CAMEL model is a ratio-based model to appraise the performance of banks. The study was an effort to describe the various ratios which are helpful for the assessment of financial performance of banking sector. The ratios in the study were used by various researchers for the evaluation of banks performance in their respective studies. Banks required to enhance capital adequacy, strengthen asset quality, improve management, increase earnings, maintain liquidity, and reduce sensitivity to various financial risks. And it was known that the CAMEL framework does not take into consideration forms of risk (such as credit risk).

The present study is another attempt to evaluate financial performance of banks.

Research Methodology

The study was analytical in nature and based on secondary data covering a period of five years from 2013-2018. The data was collected from the annual reports of following public & private sector banks. The following banks were selected based on Market Capitalisation:

Public Banks:

1. State Bank Of India
2. Bank Of Baroda

3. IDBI
4. Punjab National Bank
5. Canara Bank

Private Banks:
1. HDFC Bank
2. ICICI Bank
3. Axis Bank
4. Kotak Mahindra Bank
5. IndusInd Bank

The performance of the banks was measured through different ratios of CAMEL model (Table 1).

Table 1: CAMEL Ratios

Sr. No.	CAMEL Parameters	Ratios used in the present study
1	C	Capital Risk Adequacy Ratio Advances to Assets Ratio Debt Equity Ratio Equity to Assets Ratio
2	A	Deposits to Total Assets Ratio Net NPAs to Net Advances Ratio Net NPAs to Total Assets Ratio Total Investment to Total Assets Ratio
3	M	Business Per Employee Profit Per Employee Return on Equity Net Profit Margin Ratio Asset Turnover Ratio
4	E	Dividend Payout Ratio Operating Profit to Assets Ratio Cost to Income Ratio Net Profit to Total Assets Ratio Return on Assets
5	L	Credit Deposit Ratio Current Ratio Quick Ratio Cash Deposit Ratio Investment Deposit Ratio

All the banks were first individually ranked based on the sub-parameters of each parameter. The sum of these ranks was then taken to arrive at the group average of individual banks for each parameter. Finally the composite rankings for the banks were arrived at after computing the average of these group averages. Banks were ranked in the ascending/descending order based on the individual sub-parameter.

The CAMEL parameters are discussed below:

Capital Adequacy Ratio: Capital adequacy ratios ("CAR") are a measure of the amount of a bank's core capital expressed as a percentage of its risk-weighted assets.

Capital adequacy ratio is defined as:
CAR = (Tier 1 Capital + Tier 2 Capital) / Risk weighted Assets

TIER 1 CAPITAL - (paid up capital + statutory reserves + disclosed free reserves) - (equity investments in subsidiary + intangible assets + current and brought forward losses)

TIER 2 CAPITAL – i. Undisclosed Reserves, ii. General Loss reserves, iii. hybrid debt capital instruments and subordinated debts where risk can either be weighted assets (a) or the respective national regulator's minimum total capital requirement. If using risk weighted assets,

CAR = [(T1 + T2) / a] 10% percent threshold varies from bank to bank (10% in this case, a common requirement for regulators conforming to the Basel accords) is set by the national banking regulator of different countries.

Two types of capital are measured: tier one capital (T1 above), which can absorb losses without a bank being required to cease trading, and tier two capital (T2 above), which can absorb losses in the event of a winding-up and so provides a lesser degree of protection to depositors.

Asset Quality: It is a measure to account for the extent of Non-Performing Asset in the portfolios of the banks and the extent of damage this particular asset class can have on the financial performance.

Management Quality: The management dimension in CAMEL analysis has assumed unprecedented significance. This measure captures the possible effect of management efficiency on the financial performance of the banks.

Earnings Quality: Banks depend on their quality of earnings for performing activities like funding dividends, maintaining adequate capital levels, finding new opportunities for bank to grow, entering new geographic and product markets and maintaining the competitive outlook.

Apart from the sources of earning, the following dimensions also have significant impact on the financial performance of the banks. i. Level, trend, and stability of earnings, ii. Quality and sources of earnings. iii. Ability to augment capital through retained earnings. iv. Exposure to market risks. v. Provisions for loan losses

Liquidity: Liquidity management in banks has assumed critical importance due to competitive pressures and the easy flow of foreign capital in the domestic markets. The liquidity crisis in the banks can adversely impact the financial performance of the banks. Inability of the banks to manage its short term liquidity liabilities and loan commitments can adversely impact the performance of the banks by substantially increasing its cost of fund and over exposure to unrated asset categories. The cash flow from principal and interest payments could vary due to the types of loans on the balance sheet impacting the liquidity position.

The selected banks have been ranked on the basis of the values of the ratios. The banks with higher average value of the ratios are ranked higher. The bank with best ratio is given rank one and so on up to rank six with an interval of one. In case of tie the average rank is assigned to the banks. All the ratios having higher value get higher rank except the ratios relating to Asset Quality Position which gets the rank in reverse order i.e. the bank with lowest average gets highest rank.

RESULTS & DISCUSSION

The ranks of selected banks through different ratios using CAMEL rating methodology was calculated.

Table 2: ***Camel Ratings (2013-18): Capital Adequacy***

Type of Bank	Name of Banks	CRAR (%)		ADVS TO ASSETS RATIO (%)		DE RATIO (Times)		EQU TO ASS RATIO (%)		GROUP RANKING	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Public sector banks	State Bank of India	12.758	6	61.2	5	2.66	9	0.0326	10	7.5	9.5
	Bank of Baroda	12.67	7	58	9	1.53	4	0.0668	8	7	7.5
	IDBI Bank	11.244	9	55.2	10	3.28	10	0.582	1	7.5	9.5
	Punjab National Bank	11.89	8	60.2	6	1.76	5	0.0628	9	7	7.5
	Canara Bank	11.242	10	59.6	7	1.45	3	0.0978	5	6.25	6

Private sector banks	HDFC bank	15.552	4	62.6	3	1.36	2	0.068	7	4	2.5
	Kotak Mahindra Bank	17.466	1	71.4	1	1.15	1	0.466	2	1.25	1
	ICICI Bank	17.434	2	58.6	8	2.23	8	0.164	4	5.5	5
	Axis Bank	15.756	3	62	5	2.21	7	0.09	6	5.25	4
	IndusInd Bank	14.352	5	63.2	2	1.86	6	0.42	3	4	2.5

The various ratios measuring capital adequacy of selected banks and the ranks assigned to them are presented in Table 2. It is clear that all banks have maintained higher CAR than the prescribed level. It is found that Kotak Mahindra Bank secured the top position with highest average CAR of 17.466 followed by ICICI Bank (17.434), Axis Bank (15.756). Canara bank was at the bottom most position with a least average CAR of 11.242. In terms of Advances to Assets Ratio, Kotak Mahindra Bank is at top position with highest average of 71.4 followed by IndusInd Bank (63.2) & HDFC Bank (62.6). IDBI Bank was at the bottom most position with least average of 55.2. In terms of Debt Equity Ratio, Kotak Mahindra Bank is at the top position with least average of 1.15 followed by HDFC Bank (1.36) and Canara Bank (1.45).

On the basis of group averages of three sub-parameters of capital adequacy Kotak Mahindra Bank was at the top position with group average of 1.25, followed by HDFC & IndusInd Bank (4). SBI & IDBI Bank stood at the last position due to its poor performance in all parameters.

Table 3: ***Camel Ratings (2013-18): Asset Quality Position***

Type of Bank	Name of Banks	Deposits To Total Assets Ratio (%)		Net Npas To Net Advances Ratio		Net Npas To Total Assets Ratio		Total Investment To Total Asset Ratio (%)		Group Ranking	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Public sector banks	State Bank of India	75.8	5	3.584	6	2.156	7	25.6	8	6.5	7
	Bank of Baroda	90.4	2	3.72	7	2.144	6	18.2	1	4	3
	IDBI Bank	71.4	7	8.21	9	4.442	10	28.2	10	9	10
	Punjab National Bank	79.4	4	6.896	8	4.106	9	25	7	7	9
	Canara Bank	85.2	3	18.538	10	3.376	8	24.8	6	6.75	8
Private sector banks	HDFC	153.6	1	0.304	1	0.19	1	24.4	3	1.5	1
	Kotak Mahindra Bank	72	6	1.06	3	0.662	3	26	9	5.25	5
	ICICI Bank	59	10	3.284	5	1.948	5	24.8	5	6.25	6
	Axis Bank	68.8	8	1.652	4	0.972	4	24.8	4	5	4
	IndusInd Bank	678	9	0.38	2	0.244	2	22.6	2	3.75	2

Table 3 presents the various ratios representing asset quality position of selected banks and the ranks assigned to them.

HDFC Bank was at the top position with deposits to total assets ratio of 153.6, followed by BOB (90.4), Canara Bank (85.2). ICICI was at the last position with ratio of 59. In case of Net NPAs to Net Advances Ratio, it's again HDFC Bank was at the top position with a least average of 0.304 followed by IndusInd Bank (0.38), Kotak Mahindra Bank (1.06). For Net NPAs to Total Assets Ratio, HDFC Bank (0.19) leads again followed by IndusInd Bank (0.244). In terms of TI/TA, BOB was at the first position with an average of 18.2 followed by IndusInd (22.6), HDFC bank (24.4). IDBI Bank was at the last position with highest average of 28.2.

On the basis of group averages of sub-parameters of assets quality, the HDFC Bank was at the top position with group average 1.5, followed by IndusInd Bank (3.75), BOB (4), Kotak Mahindra Bank (5.25). IDBI Bank occupies the last position.

The various ratios representing management quality of selected banks and their ranks are depicted in Table 4.

IDBI ranked first with respect of business per employee followed by BOB. Contrary to that, HDFC Bank ranked first in terms of profit per employee followed by ICICI Bank.

As far as Return on Equity is concerned, HDFC Bank (17.118) ranked first followed by IndusInd Bank (15.292). Canara Bank (-0.198) & PNB (-12.472) were last with negative Return on Equity.

At the front of net profit margin ratio, HDFC Bank was at the first place with an average 20.97, followed by IndusInd Bank (19.21), ICICI Bank (18.76). IDBI Bank was at the bottom with negative net profit margin ratio.

In terms of asset turnover ratio, Kotak Mahindra Bank was at the top most position with asset turnover ratio of 10.2 followed by IndusInd (10), HDFC Bank (9.6).

On the basis of group averages of sub-parameters, HDFC Bank & Axis Bank were at the top position with group average 2.4 & 4.4 respectively, followed by Kotak & ICICI Bank (4.6). PNB was positioned last due to its poor performance in all parameters especially return on equity.

Table 4: ***Camel Ratings (2013-18): Management Quality***

Type of Bank	Name of Banks	Divident Payout Ratio (%)		Operating Profits To Assets Ratio		Cost To Income Ratio (%)		Net Profit To Total Assets Ratio		Return On Assets (%)		Group Ranking	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Public sector banks	State Bank of India	20.29	6	-0.81	8	40.28	7	0.37	6	0.24	6	6.6	8
	Bank of Baroda	21.93	3	-0.74	7	38.40	5	0.04	7	0.04	8	6	6.5
	IDBI Bank	14.04	8	-0.43	3	42.49	9	-0.83	10	-0.83	10	8	9
	Punjab National Bank	15.67	7	-1.73	10	50.48	10	-0.18	9	-0.62	9	9	10
	Canara Bank	20.41	5	-0.98	9	33.04	1	0	8	0.20	7	6	6.5
Private sector banks	HDFC	19.51	4	0.20	1	37.50	3	1.70	2	1.7	1	2.2	1
	Kotak Mahindra Bank	3.94	10	-0.07	2	38.11	4	1.54	4	1.53	3	4.6	4
	ICICI Bank	26.10	2	-0.21	4	38.52	6	2.74	1	1.08	5	3.6	2
	Axis Bank	118.5	1	-0.72	6	40.61	8	1.08	5	1.35	4	4.8	5
	IndusInd Bank	7.93	9	-0.61	5	36.52	2	1.62	3	1.62	2	4.2	3

Table 5 presents the earning quality positions of sample banks in terms of dividend pay-out ratio, operating profits to assets ratio, cost to income ratio, net profit to total assets ratio & return on assets.

The Axis Bank was ranked highest in case of Dividend Pay-out Ratio with an average of 118.5 followed by ICICI Bank (26.10), BOB (21.93). Kotak Mahindra Bank was at the bottom most position with least average of 3.94. In case of operating profits to assets ratio, HDFC Bank stood at the top place. All other banks under the study are having negative average operating profits. The cost of running the business compared to the operating profits is least for Canara Bank (33.04) followed by IndusInd Bank (36.52%) & HDFC Bank (37.50%). This ratio is highest for PNB Bank (50.48%). Only HDFC Bank and Kotak Mahindra Bank are having consistent cost to income ratio throughout the years from 2013-2018 which shows efficiency of their operations.

The private sector banks have better net profit to total assets ratio compared to the public sector banks. The average ratio of Canara Bank is zero. IndusInd Bank is having the most consistent net profit to total assets ratio throughout the years from 2013-2018.

Table 5: Camel Ratings (2013-18): Earnings Quality

Type of Bank	Name Of Banks	Business Per Employee (rs Crore)		Profit Per Employee (rs Crore)		Return On Equity (%)		Net Profit Margin (%)		Asset Turnover Ratio		Group Ranking	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Public sector banks	State Bank of India	150775795	3	366904	7	5.922	7	5.128	6	8.5	5	5.6	6
	Bank of Baroda	195794397	2	506862	6	1.11	8	1.006	7	6.4	10	6.6	7
	IDBI Bank	262672208	1	-1685269	10	9.924	6	-12.01	10	7.7	8	7	8.5
	Punjab National Bank	110001666	8	-314753	9	-12.472	10	-3.366	9	7.6	9	9	10
	Canara Bank	150017870	4	-7305	8	-0.198	9	-0.314	8	8	6	7	8.5
Private sector banks	HDFC	125376602	6	1538843	1	17.118	1	20.97	1	9.6	3	2.4	1
	Kotak Mahindra Bank	73901064	10	846650	5	11.476	3	17.80	4	10.2	1	4.6	3.5
	ICICI Bank	113886067	7	1278638	2	11.042	4	18.76	3	7.8	7	4.6	3.5
	Axis Bank	138255541	5	1108892	3	11.04	5	13.98	5	8.4	4	4.4	2
	IndusInd Bank	87909716	9	1078377	9	15.292	2	19.21	2	10	2	4.8	5

In case of Return on Assets Ratio, HDFC Bank was at the first position with an average of 1.7, followed by IndusInd Bank (1.62). IDBI Bank was at the last place.

On the basis of group averages, HDFC Bank, IDBI Bank & ICICI Bank were at the top position with group average (3) followed by Punjab National Bank (3.67). Axis Bank performed poorly in Dividend Pay-out Ratio & II/TI Ratio and stood at last place.

Group Ranking reveals that HDFC bank was ranked first with average of 3.2 followed by Kotak Mahindra Bank and Axis Bank with averages of 3.4 and 3.8 respectively representing the high quality of a bank's profitability and its capability to maintain quality and earn consistently.

Contrary to this, PNB & Canara Bank were ranked last with averages of 7.2 and 7.8 respectively representing poor quality of bank's earning and profitability.

Table 6: Camel Ratings (2013-18): Liquidity

Type	Name of Banks	Credit Deposit Ratio		Current Ratio		Quick Ratio		Cash Deposit Ratio		Investment Deposit Ratio		Group Raking	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Public sector banks	State Bank of India	81.798	6	0.062	5	12.29	10	6.534	2	32.904	7	6	7
	Bank of Baroda	68.08	10	0.036	9	20.73	3	3.57	10	21.812	10	8.4	10
	IDBI Bank	78.822	7	0.098	2	19.84	5	5.11	6	40.524	2	4.4	3
	Punjab National Bank	73.634	8	0.03	10	25.80	1	4.624	8	30.542	8	7	8
	Canara Bank	69.698	9	0.042	8	24.19	2	4.504	9	30.276	9	7.4	9
Private sector banks	HDFC	83.412	5	0.054	6	12.88	9	6.782	1	33.396	5	5.2	5
	Kotak Mahindra Bank	88.226	4	0.046	7	17.08	6	4.886	7	38.646	3	5.4	6
	ICICI Bank	100.424	1	0.104	1	15.36	7	6.55	4	44.508	1	2.8	1
	Axis Bank	88.438	3	0.066	3	20.41	4	6.562	3	37.154	4	3.4	2
	IndusInd Bank	91.468	2	0.064	4	18.67	6	6.082	5	33.222	6	4.6	4

It can be seen that ICICI Bank tops the list in credit deposit ratio, current ratio & investment deposit ratio. Bank of Baroda holds last position in credit deposit ratio, cash ratio & investment deposit ratio. Overall, ICICI has the highest capacity of to pay its short term debts compared to all the banks and it was at the top position with average composite liquidity of 2.8 followed by Axis Bank and IDBI with the average composite liquidity of 3.4 and 4.4 respectively. Whereas Canara Bank and Bank of Baroda were ranked last with average composite liquidity of 7.4 and 8.4 respectively which shows the poor capacity to pay short term debts

Table 7: Composite Ranking: Overall

Type	Name of banks	C	A	M	E	L	Average	Rank
Public Sector Banks	State Bank of India	9.5	7	6	8	7	7.5	7
	Bank of Baroda	7.5	3	7	6.5	10	6.8	6
	IDBI Bank	9.5	10	8.5	9	3	8	9
	Punjab National Bank	7.5	9	10	10	8	8.9	10
	Canara Bank	6	8	8.5	6.5	9	7.6	8
Private Sector Banks	HDFC	2.5	1	1	1	5	2.1	1
	Kotak Mahindra Bank	1	5	3.5	4	6	3.9	5
	ICICI Bank	5	6	3.5	2	1	3.5	4
	Axis Bank	4	4	2	5	2	3.4	3
	IndusInd Bank	2.5	2	5	3	4	3.3	2

It is clear from table 7 that HDFC bank is ranked at top position with composite average of 2.1, followed by IndusInd Bank (3.3), Axis Bank (3.4). IDBI Bank and PNB were at the bottom most position.

CONCLUSION

In the process of evaluation of performance of various banks, our study concluded that, different banks have obtained different performances with respect to CAMEL ratios. Our study also concluded the following:

- The Kotak Mahindra Bank, HDFC Bank & IndusInd Bank stood at top position in terms of capital adequacy.
- In terms of asset quality, the HDFC Bank was at top most position.
- In context of management quality, HDFC Bank & Axis Bank positioned at first & second respectively.
- In terms of earnings quality, HDFC Bank, ICICI Bank & IndusInd Bank obtained the top position.
- The HDFC Bank was ranked top in liquidity criterion.
- The overall performance table shows that, HDFC Bank is ranked first followed by IndusInd Bank & Axis Bank.

Mostly private sector banks were having better position in terms of most of the parameters of camels rating compared to public sector banks. However, banks cannot be judged solely based on the absolute values of the camel ratios. Looking at the trend of all the ratios studied, it can be seen that private banks are growing at a faster pace than public sector banks. Further research can be undertaken extending period of data, increasing the number of samples, and covering different nature of banks to give appropriate representation.

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