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EVALUATING THE PERFORMANCE OF SELECTED BANKS: A CAMEL MODEL ANALYSIS

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ABSTRACT

The advancement of an economy is significantly dependent upon deployment as well as optimum utilization of resources and most importantly operational efficiency of the various sectors, of which banking sector plays a very vital role. Banking sector helps in stimulation of capital formation, innovation and monetization in addition to facilitation of monetary policy. Monitoring and supervision of banks has become very important due to significant Non-performing Assets and bank failures from the 1980s till now. Therefore, it is imperative to evaluate and analyze the financial health of banks so as to ensure a healthy financial system and efficient economy. In this paper, an effort has been made to evaluate the financial performance and soundness of six Public Sector banks in India using CAMEL approach for a five year period 2012-2017.

KEYWORDS
CAMEL approach, financial performance, public sector banks.

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G21

1. INTRODUCTION

The banking sector has been undergoing a complex, but comprehensive phase of restructuring since 1991, with a view to make it sound, efficient, and the same time forgoing its links firmly with real sector for promotion of savings, investment and growth. Although a complete turnaround in banking sector performance is not expected till the completion of reforms, signs of improvement are visible in some indicators under the CAMEL frame work. Under CAMEL approach bank is required to enhance capital adequacy, strengthen asset quality, improve management, and increase earnings at various financial risks and liquidity.

The whole banking scenario has changed in the very recent past on the recommendations of Narasimham Committee. Further BASELL II Norms were introduced to internationally standardize processes and make the banking Industry more adaptive. The fact that banks work under the most volatile conditions and the banking industry as such in the booming phase makes it an interesting subject of study. Amongst these reforms and restructuring the CAMEL framework has its own contribution to the way modern banking is looked up on now. (Kumar, Harsha, Anand, & Dhruva, 2012) CAMEL is an acronym for six measures (capital adequacy, assets quality, management soundness, earnings, liquidity, and sensitivity to market risk). In this analysis the six indicators which reflect the soundness of the institution framework are considered. The attempt here is to see how various ratios have been used and interpreted to reveal a bank's performance and how this particular model encompasses a wide range of parameters making it a widely used and accepted model in today's scenario.

2. LITERATURE REVIEW

The financial performance of banks, both public and private, has been analyzed by academicians, scholars and administrators using CAMEL model in the last decade. A summary of some of the studies is given below:

Kwan and Eisenbeis (1997) observed that Asset Quality is commonly used as a risk indicator for financial institutions, which also determines the reliability of capital ratios. Their study indicated that capitalization affects the operation of financial capitalization affects the operation of financial institution. More the capital, higher is the efficiency.

Said and Saucier (2003) evaluated the liquidity, solvency and efficiency of Japanese Banks using CAMEL rating methodology. The study assessed the capital adequacy, assets and management quality, earnings ability and liquidity position.

Prasuna (2003), analyzed the performance of Indian banks by adopting the CAMEL Model. The performance of 65 banks was studied for the period 2003-04. The author concluded that the competition was tough and consumers benefited from better services quality, innovative products and better bargains.

Sarker (2005) scrutinized the CAMEL model for regulation and supervision of Islamic banks by the central banking Bangladesh. The study enabled the regulators and supervisors to get a Shariah benchmark to supervise and inspect Islamic banks and financial institutions from an Islamic perspective.

Gupta and Kaur (2008) assessed the performance of 20 old and 10 new Indian Private Sector Banks on the basis of Camel Model for the period of five years i.e., from 2003-07.

Hugar S.S. and Vaz N.H. (2008), evaluated the customer orientation in 5 public sector banks 3 new private sector and 3 foreign banks are selected. The study concluded that new private sector banks had more ATMs as on March 2006 followed by SBI where 77.5% branches were fully computerized and 18.2% were partially computerized. Business per employee and profits per employee was higher in foreign banks where SBI had received more number of complaints followed by ICICI. The study also suggested adopting CRM by public sector banks to stand strong in competitive environment.

Sangmi and Nazir (2010) analysed the performance of biggest nationalised bank (PNB) and biggest private sector bank (J&K Bank) using the CAMEL model for the period from 2001-2005. The study exhibited that the position of both the banks under study was sound and satisfactory in case of capital adequacy, asset quality, management capability and liquidity.

Chaudhry and Singh (2012) analyzed the impact of the financial reforms on the soundness of Indian Banking through its impact on the asset quality. The study identified the key players as risk management, NPA levels, effective cost management and financial inclusion.

Sushendra Kumar Misra and Parvesh Kumar Aspal (2013) empirically tested the applicability of CAMEL MODEL and its consequential impact on the performance of SBI Groups for the years 2009, 2010, 2011. The study concluded that annual CAMEL scanning helps the PSU banks to diagnose its financial health and alert the bank to take preventive steps for its sustainability.

3. OBJECTIVES & RESEARCH METHODOLOGY

3.1 Objectives of the Study

The main objective of the study is to analyze the financial position and performance of the selected Public Sector banks in India using CAMEL model.

3.2 Research Design

CAMEL is a ratio-based model used to evaluate the performance of banks with the help of different criteria, viz. Capital Adequacy, Asset Quality, Management Quality, Earnings and Liquidity. The present study is a descriptive research study based on analytical research design.

3.3 Hypothesis of the Study

The present study tested the following null hypothesis:

H0 = There is no significant difference in performance of Public Sector Banks in India as assessed by CAMEL model

H1 = There is a significant difference in performance of Public Sector Banks in India assessed by CAMEL model

4.1 DATA ANALYSIS TECHNIQUES

4.1.1 CAPITAL ADEQUACY

Capital base of financial institutions facilitates depositors in forming their risk perception about the organization. Also, it is a significant structure for financial managers to maintain adequate levels of capitalization. Capital adequacy is very useful for a bank to conserve & protect stakeholders‟ confidence and prevent the bank from bankruptcy. Reserve Bank of India prescribes banks to maintain a minimum Capital to risk-weighted Assets Ratio (CRAR) of 9 % with regard to credit risk, market risk and operational risk on an ongoing basis, as against 8 % prescribed in Basel documents.

For the study, the following ratios have been used to measure capital adequacy:

- Capital Adequacy Ratio
- Advances to Assets Ratio
- Government securities to Total Investment Ratio
- Debt Equity Ratio

TABLE 1: COMPOSITE CAPITAL ADEQUACY

Bank	Capital Adequacy		Advances to Assets		Govt Securites to Total Investment		Debt Equity Ratio		Group Rank	
	%	Rank	%	Rank	%	Rank	%	Rank	Average	Rank
SBI	12.74	3	64.9	1	78.76	4	12.61	2	2.5	1.5
BOB	13.47	1	61.62	4	83.6	1	14.93	4	2.5	1.5
PNB	12.44	4	63.82	2	81.55	3	13.79	3	3	3
IDBI	12.96	2	60.74	5	72.52	5	12.02	1	3.25	4
CBOI	11.68	5	62.36	3	82.77	2	22.29	5	3.75	5

On the basis of group averages of four ratios of capital adequacy as expressed in table 1, SBI and Bank of Baroda are at the top position with group average of 2.5, followed by PNB (3.00), IDBI (3.25) and CBOI (3.75). CBOI scored the lowest position due to its poor performance in Debt- Equity and capital adequacy ratio

4.1.2 ASSET QUALITY

Asset quality determines the healthiness of financial institutions against loss of value in the assets as asset impairment risks the solvency of the financial institutions. The weakening value of assets has a spillover effect, as losses are eventually written-off against capital, which eventually expose the earning capacity of the institution. With this framework, the asset quality is assessed with respect to the level and severity of nonperforming assets, adequacy of provisions, distribution of assets etc.

For the study, the following ratios have been used to measure asset quality:

- Net NPA to Net Advance (%)
- Net NPA to Total Assets (%)
- Total Investments to Total Assets

TABLE 2: COMPOSITE ASSET QUALITY

Bank	Net NPA to Net Advances		Net NPA to Total Assets Ratio		Total Investments to TA Ratio		Group Rank	
	%	Rank	%	Rank	%	Rank	Average	Rank
SBI	2.05	3	1.64	4	23.26	2	3.00	2.5
BOB	1.12	1	0.67	1	19.08	1	1.00	1
PNB	2.33	4	1.47	3	26.12	3	3.33	4
IDBI	1.92	2	1.16	2	30.51	5	3.00	2.5
CBOI	2.8	5	1.75	5	28.04	4	4.67	5

On the basis of group averages of four ratios of assets quality as expressed in table 2, BOB was at the first position with group average of 1, followed by SBI and IDBI with ranking of (2.5). CBOI scored the lowest position with 5 rank due to its poor performance in net NPAs to net advances, total investments to total assets and net NPAs to total assets ratios.

4.1.3 MANAGEMENT EFFICIENCY

Management efficiency, another indispensable component of the CAMEL framework, means adherence to set norms, knack to plan and be proactive in the dynamic environment, leadership, innovativeness and administrative competence of the bank.

The following ratios have been used to measure management efficiency:

- Business per Employee
- Profit Per Employee
- Total Advances to Total deposits

TABLE 3: COMPOSITE MANAGEMENT EFFICIENCY

Bank	Business Per Employee		Profit per Employee		Total Advances to Total Deposits		Group Rank	
	%	Rank	%	Rank	%	Rank	Average	Rank
SBI	9.49	5	0.053	4	83.7	2	3.67	4
BOB	16.28	2	0.099	1	71.88	4	2.33	2
PNB	11.83	3	0.069	3	77.29	3	3.00	3
IDBI	19.15	1	0.098	2	84.87	1	1.33	1
CBOI	9.66	4	0.025	5	73.41	5	4.67	5

On the basis of group averages of four ratios in table 3, IDBI was at the first position with group average of 1.33, followed by BOB (2.33) and PNB (3.00) respectively. CBOI scored the lowest position with 5.0 rank due to its poor performance in total advances to total deposits, and profit per employee.

4.1.4 EARNING QUALITY

The quality of earnings represents the sustainability and growth of future earnings, value of bank's lucrativeness and its competency to maintain quality and earn consistently. Earnings and profitability are examined as against interest rate policies and adequacy of provisioning. The single best indicator used to gauge earning is the Return on Assets (ROA), which is net income after taxes to total asset ratio.

For the study, the following ratios have been used to measure earnings quality:

- Return On Assets
- NIM to Total Assets (%)
- Interest Income to Total Income

TABLE 4: COMPOSITE EARNING QUALITY

Bank	Return On Asset		NIM to Total Assets		Interest Income to Total Income		Group Rank	
	%	Rank	%	Rank	%	Rank	Average	Rank
SBI	0.73	3	3.37	2	87.03	5	3.33	4
BOB	0.86	2	2.68	4	89.86	2	2.67	2
PNB	0.94	1	3.58	1	89.56	3	1.67	1
IDBI	0.6	4	2.06	5	89.48	4	4.33	5
CBOI	0.23	5	2.85	3	92.88	1	3.00	3

On the basis of group averages of four ratios of quality of earning as expressed in table 4, PNB was at the top position with group average of 1.67, followed by BOB and CBOI with an average of (2.67) and (3.00) respectively. IDBI scored the lowest position with 5.0 rank due to its poor performance in Net Interest Margin (NIM) to Total Assets ratios.

4.1.5 LIQUIDITY

In case of an adequate liquidity position, the institution can obtain sufficient funds, either by increasing liabilities or by converting its assets to cash quickly at a reasonable cost.

The following ratios have been used to measure liquidity:

- Liquid Assets to total Assets (%)
- Government securities to Total Assets (%)
- Liquid Assets to Total Deposits (%)
- Liquid Assets to Demand Deposits (%)

TABLE 5: COMPOSITE LIQUIDITY

Bank	Liquid Assets to Total Assets		Govt Assets to Total Assets		Liquid Assets to Demand deposits		Liquid Assets to Total Deposits		Group Rank	
	%	Rank	%	Rank	%	Rank	%	Rank	Average	Rank
SBI	8.11	2	18.36	4	110.33	3	10.51	2	2.75	2.5
BOB	16.89	1	15.97	5	243.87	1	19.61	1	2	1
PNB	7.48	3	21.24	3	122.56	2	9.03	3	2.75	2.5
IDBI	5.86	4	21.89	2	62.64	5	8.14	4	3.75	4.5
CBOI	5.58	5	22.97	1	102.25	4	6.58	5	3.75	4.5

On the basis of group averages of four ratios of liquidity as expressed in table 5, BOB was at the top position with group average of 2, followed by SBI with average of (2.75) and PNB (2.75) respectively. IDBI and CBOI scored the last position due to their poor performance in Liquid Assets to Total Assets, Liquid Assets to Total Deposits and Liquid Assets to Demand Deposits ratios.

4.1.6 COMPOSITE RANKING OF BANKS

TABLE 6: COMPOSITE RANKING (OVERALL PERFORMANCE) OF SELECTED PUBLIC SECTOR BANKS

Bank	SBI	BOB	PNB	IDBI	CBOI
C	1.5	1.5	3	4	5
A	2.5	1	4	2.5	5
M	4	2	3	1	5
E	4	2	1	5	3
L	2.5	1	2.5	4.5	4.5
Average	2.9	1.5	2.7	3.4	4.5
Rank	3	1	2	4	5

4.2 TESTS OF NORMALITY

For testing the normality of data, we proposed the hypothesis that the population distribution is normal.

TABLE 7: SHOWING THE SHAPIRO-WILK TEST

Bank	Statistic	df	P - Values
SBI	0.9814	5	0.9421
BOB	0.8614	5	0.2334
PNB	0.8317	5	0.1433
IDBI	0.9282	5	0.5839
CBOI	0.8792	5	0.3056

The results highlighted that calculated P- values are greater than the chosen alpha level of 0.05 for all banks, which means data are normally distributed.

4.3 ANOVA RESULTS

For determining whether there is any significant difference between the means of CAMEL ratios, we applied one-way ANOVA test on the data shown in table 6. The results of one-way ANOVA test are presented in table 8.

TABLE 8: SHOWING ANOVA CALCULATIONS

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Column 1	5	15.25	3.05	0.21389
Column 2	5	10.5	2.1	0.43889
Column 3	5	13.75	2.75	0.40972
Column 4	5	15.6667	3.13333	1.27292
Column 5	5	19.8333	3.96667	0.50208

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	9.13611	4	2.28403	4.02472	0.01488	2.86608
Within Groups	11.35	20	0.5675			
Total	20.4861	24				

For determining whether there is any significant difference between the means of CAMEL ratios, one-way ANOVA test has been applied on the data. The results of ANOVA test highlighted the **F_{STAT} = 4.0247 > F_{CRITI} = 2.866**. It means there is a statistically significant difference between the mean values of CAMEL ratios and thus, the null hypothesis is rejected. It connotes that there is a significant difference in performance of all the public sector banks as assessed by CAMEL model.

5. CONCLUSION

The central banks all around the world have improved their supervision quality and techniques. In evaluating the function of the banks, many of the developed countries are now following uniform financial rating system (CAMEL RATING) along with other existing procedures and techniques. Various studies have been conducted in India as well on various banks using CAMEL framework. Different banks are ranked according to the ratings obtained by them on the five parameters. The results show that there is a statistically significant difference between the CAMEL ratios of all the Public Sector Banks in India, thus, signifying that the overall performance of Public Sector Banks is different. Also, it can be concluded that the banks with least ranking need to improve their performance to come up to the desired standards.

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