Analysis of The Performance of Selected Public Sector Banks using Camels' Approach

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ABSTRACT

The development of an economy largely depends on the availability as well as optimum utilization of resources and on the efficient functioning of various sectors in the economy. Of all the sectors, banking sector has a very vital role to play. A sound banking system mobilizes the small and scattered savings of the community and makes them available for investment for productive purposes. It leads to capital formation innovation and growth. However the menace of NPAs has increased to a gigantic proportion and India is ranked 5th in terms of bad loans in the world. Therefore it becomes imperative to continuously measure the performance of the banks and CAMELS approach is one of the widely used methods to measure the performance of the bank.
This study aims to evaluate the performance of public sector banks in India using CAMELS for a five year period from 2012- 2016.

Keywords: NPAs, CAMELS, Banking System, Public sector Banks.

INTRODUCTION:

A sound and effective banking system is necessary for a healthy economy. They should not only be hassle free but it should be ready to face new challenges posed by the technology and any other external and internal factors. Without an efficient banking system, it is difficult to think about the efficient banking system. As a role of an intermediary these banks help to satisfy various different requirements from various categories of stakeholders of society. Banks also play a link depositor and the borrower. Along with, the banks are operating in a dynamic and competitive environment where customers' needs are changing day by day and want more and more specialized financial services, which banks have to perform apart from their traditional banking activities.

With continuous product and process innovation the banking of India is reforming and expected to offer manifold sophisticated services to the customers[1]. The future of Indian banking represents a unique mixture of unlimited opportunities amidst insurmountable challenges. Globalization not only reduces the geographical boundaries but also increases the sphere of trade and commerce and even employment opportunities. All these indicate newly emerging opportunities for Indian Banking. However, on the darker side we see decades of controlled and regimented management of the banks in past. It has not only eroded profitability of the government owned banks, accumulated bloated NPA and threatens Capital Adequacy of the banks and their continued stability.

While performing their functions, banks is exposed to a variety of risks that are generally mapped onto three broad categories i.e. credit risk, market Risk and operational risk which adversely affect the performance of a bank. There are so many tools to measure the performance of the banking sector CAMELS' is one of them. To

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[1]Bhattacharjee, K., (2017), "*Satisfaction of E-banking: a Comparative Study on Degree-holder &Non-degree holder Customers*", Commonwealth Journal of Commerce &Management Research, Vol. 4, Issue-12, pp. 30-46.

rate banks and other financial institutions CAMELS rating system is developed in the US that is used by supervisory authorities. Every bank in U.S. and various financial institutions outside U.S use this rating system. This rating system was adopted by National Credit Union Administration in 1987. For assessing financial institutions the Basel Committee on Banking Supervision of the Bank of International Settlements (BIS) proposed the CAMELS framework in 1988. The acronyms of "CAMELS" are Capital adequacy, Asset quality, Management, Earnings, Liquidity and Sensitivity.[2]

Ratings are assigned for each component in addition to the overall rating of a bank's financial condition. The ratings scale is classified on 1 to 5.Each of the component factors is rated on a scale of 1 to 5, 1 is considered best whereas 5 are considered the worst. Banks with ratings of 1 or 2 are considered good, if any, supervisory concerns, while banks with ratings of 3, 4, or 5 present moderate to extreme degrees of supervisory concern[3]. In1994, Board of Financial Supervision (BFS) was established by the RBI, which operates as a unit of the RBI. For the strong and stable financial system entire supervisory mechanism was realigned to suit the changes. Further supervisory jurisdiction of the BFS was slowly extended to the entire financial system barring the capital market institution.

LITERATURE REVIEW:

CAMELS approach helps not only for the appraisal but also for the regulations. Many researchers have work on to measure the profitability with the help of CAMEL approach.

In 2008, Gupta and Kaur has conducted a study to measure the performance of Indian private sector banks using CAMEL model and provided rating to top five and bottom five banks. [4]

Various financial ratios are use in CAMELS framework which help to evaluate a bank's performance (Barker and Holdsworth, 1993)[5].

Reddy and Prasad (2011) explained the financial performance of selected regional rural banks during post reorganization period. The study adopted CAMEL model to examine the overall performance of Andhra Pragathi Grameena Bank and Sapthagiri Grameena Bank.[6]

In 2011, Siva and Natarajan (2011) have used CAMEL and its consequential impact on the performance of SBI Groups and it was found that it helps the bank to diagnose its financial health and alert the bank to take preventive steps for its sustainability.[7]

In CAMELS system six categories of ratios are used, applied and summarized in relative model of that category to define CAMELS system in any group of ratios. Those categories are pointed out by Nimalathasan, B., (2008) and Sarker (2005) These are:

Capital Adequacy (C): Capital Adequacy measures the capacity of a bank, how they manage their losses and obligations without affecting their operations. This can be met only on the basis of an amount and the quality of capital, a bank can access. A ratio of Capital to Risk Weighted Assets determines the bank's capital adequacy.

Asset Quality (A): It covers an institutional loan's quality which reflects the earnings of the institution. An asset represents all the assets of the bank, Viz. Current and fixed. Through this indicator, the performance of an asset can be evaluated.

Management Quality (M): It measures the effectiveness of the management, how well they respond to the changing market conditions, how well the duties and responsibilities are delegated, how well the compensation policies and job descriptions are designed, etc. It covers the management's ability to ensure the safe operation of the institution as they comply with the necessary and applicable internal and external regulations.

Earning Ability (E): Earning of a bank comes from interest, commission or brokerage. This parameter helps to check the efficiency of a bank in relation with its capital adequacy to cover all the potential losses and the ability to pay off the dividends.

Liquidity (L) Liquidity means conversion of liquid assets into cash. This parameter helps to measure the bank's ability, how efficiently they convert their assets into cash

[2]Amandeep (1993). *Profit and Profitability in Commercial Banks,* Deep and Deep Publications, New Delhi.
[3]Gupta.Ruchi. (Jan. 2014). *An analysis of Indian Public sector banks using CAMEL approach*", "IOSR Journal of Business and Management, Volume-16, Issue – 1, PP- 94- 102.
[4] Gupta &Kaur 2008, '*A CAMEL Model Analysis of Private Sector Banks in India*', Journal of Gyan Management, vol. 2, no. 1, pp. 3-8.
[5]Barker, D., Holdsworth, D. (1993).*The Causes of Bank Failures in the 1980s*. Research Paper No. 9325, Federal Reserve Bank of New York
[6] Reddy, D Maheshwara & Prasad, KVN 2011, '*Evaluating Performance of Regional Rural Banks: An Application of CAMEL Model*', Journal of Arts, Science & Commerce, vol. 2, no. 4, pp. 61-67.
[7] Siva, S &Natarajan, P 2011, '*CAMEL Rating Scanning (CRS) of SBI Groups*', Journal of Banking Financial Services and Insurance Research, vol. 1, no. 7, pp. 1-17.

Sensitivity (S): This parameter helps to measure the bank's sensitivity towards the changing market conditions, i.e. how adverse changes in the interest rates, foreign exchange rates, commodity prices, and fixed assets will affect the bank and its operations and how they react.

RESEARCH METHODOLOGY:

Research Design:
CAMELS 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, Liquidity and Sensitivity. The present study is a descriptive research study based on analytical research design.

OBJECTIVE OF THE STUDY:

The main objective of the study is to analyze the financial position and performance of the 5 select Public Sector banks in India using CAMELS model during the period 2012 to 2016.

DATA COLLECTION & ANALYSIS:

Sampling:
For the purpose of the study on the basis of market capitalization five major Public Sector Banks in India excluding SBI and its associate banks have been selected.

Data Collection:
Secondary Sources are the main source for data collection and it is collected through annual reports (Balance Sheets, Profit & Loss Accounts) of the banks, various circular from RBI, RBI'S guidelines, Trend& Progress reports of RBI, Various journals, from the web sites available on net.

DATA ANALYSIS TECHNIQUES:

Statistical Tools:
The data has been analyzed for the 6 factors of the CAMELS approach using ratios. The ratios under respective six heads are calculated and then ranked. The ranks so calculated are then used for computing the group rank. The statistical tool used along with their purpose is enumerated below:
1. Arithmetic mean and Standard Deviation for calculating values for the purpose of evaluation

Data Analysis and Interpretation:
Analysis of Components of CAMELS Framework

Capital Adequacy:
Capital adequacy ratio (CAR) is a specialized ratio used by banks to determine the adequacy of their capital keeping in view their risk exposures. Banking regulators require a minimum capital adequacy ratio so as to provide the banks with a cushion to absorb losses before they become insolvent. This improves stability in financial markets and protects deposit-holders. Capital Adequacy indicates the overall financial position of a bank. It indicates whether the bank has sufficient capital to bear unexpected losses in the future and bank leverage. The capital adequacy of a bank is measured by following ratios:

Capital to Risk-Weighted Assets Ratio (CRAR):
This ratio is propounded to ensure that bank scan adopt a reasonable level of losses arising from operations and to ascertain bank's loss bearing capacity. Higher the ratio means banks are stronger and the investors are more protected.
Latest RBI guideline for banks in India is to maintain a CRAR of 9%. Capital to Risk-weighted Assets Ratio (CRAR) = (Tier-I + Tier-II)/Risk Weighted Assets. Tier 1 capital includes shareholders' equity; perpetual non-cumulative preference shares, disclosed reserves and innovative capital instruments. Tier 2 capitals include undisclosed reserves, revaluation reserves of fixed assets and long-term holdings of equity securities, general provisions/general loan-loss reserves; hybrid debt capital instruments and subordinated debt.[8]

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[8] Mishra Kumar Sushendra &Aspal Kumar Parvesh 2013," *A Camel model anslysis of state bank Group*" , world Journal of social ssciences, vol. 3 no.4,Pp. 36-55.

Debt-Equity Ratio: The degree of leverage of a bank is reflected by debt-equity ratio. It shows the proportion of debt and equity in the total finance of the bank. It is calculated by dividing total borrowings with shareholders' net worth. Net worth includes equity capital, and reserves and surpluses. Higher ratio indicates less protection for the depositors and creditors and vice-versa.

Advances to Assets Ratio: This is a ratio between total advances and total assets. It is calculated by dividing the total advances with total assets. This ratio indicates a bank's aggressiveness in lending which ultimately leads to better profitability. The value of total assets does not include the revaluation of all the assets. Receivables are also included in total advances. Higher ratio is preferred as compared to lower one.

Government Securities to Total Investments Ratio: The risk involved in a bank's investment is indicated by this ratio. It is calculated by dividing the amount invested in government securities by total investment. Government securities are considered one of the most safe and risk-free debt instruments. So higher the investment in government securities, lower will be the risk involved and vice versa.

Table 1: Camel Rating (2012- 16): Capital Adequacy

Bank	Capital Adequacy Ratio (%)		Advances / Total Assets ratio (%)		Debt Equity Ratio (Times)		Government Securities to Total Investment Ratio		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
BOB	13.204	1	60.288	4	15.77	2	85.444	1	2	4
Canara Bank	11.686	3	59.224	5	17.98	3	84.666	2	3.25	3
PNB	12.326	2	63.592	2	15.176	1	80.936	3	2	4
Central Bank of India	11.432	4	61.806	3	20.49	5	80.232	4	4	1
Union Bank of India	10.976	5	66.248	1	18.764	4	79.824	5	3.75	2

The above table defines that the bank which have maximum points will be considered as good and will be ranked no. 1 which shows that the bank less risk and their capital are invested in the risk free instruments.

Asset Quality:

The quality of assets also plays a crucial role in determining the financial strength of a bank. The prime objective to assess the quality of assets is to ascertain the composition of Non- performing Assets (NPAs) as percentage of the total assets. NNPA to Net Advance, NNPA to Total Assets and Total Investment to Total Assets ratios helps the banks to assess the quality of assets.

Net NPAs to Net Advances Ratio:

Measuring the net non-performing assets as a percentage of net advances are the most standard measure to assess the assets quality. Net NPAs are calculated by deducting net of provisions on non-performing assets and interest in suspense account from Gross NPAs.

Net NPAs to Total Assets Ratio:

This ratio indicates the efficiency of bank in ascertaining the risk arising from credit and recovering the debts. Under this ratio, the net NPAs are expressed as a percentage of total assets. Lower the ratio reflects the better is the quality of advances and vice versa.

Total Investments to Total Assets Ratio:

Total investments to total assets reflect the extent of deployment of assets of a bank in investment as against advances. This ratio measures the proportion of total assets locked up in investments. It is ascertained by dividing total investments with total assets. A higher ratio represents that the bank has maintained a high cushion of investments as a safeguard against NPAs by adopting a conservative policy.

Table 2: Camel Rating (2012- 16): Asset Quality

Bank	NNPA to NET Advance		NNPA to Total Assets		Total Investment to Total Assets		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
BOB	2.058	1	0.872	1	18.684	1	1	5
Canara Bank	2.938	3	1.504	2	26.934	4	3	3
PNB	3.878	4	2.3	4	25.744	3	3.6666667	2
Central Bank of India	4.142	5	2.518	5	28.458	5	5	1
Union Bank of India	2.72	2	1.792	3	24.574	2	2.3333333	4

The above table explains the quality of the assets the banks have. In this table the banks which have less points will be considered good and will be ranked one.

Management Efficiency:
Management efficiency is one of the crucial component of the CAMEL model that ensures the survival and growth of a bank. Management efficiency means follow up of defined norms, capability to plan and respond to dynamic environment and administrative ability of the bank. Effective management is one of the crucial factors behind any institution's performance.

Business per Employee:
Business per employee reveals the productivity and efficiency of human resources of bank. It is calculated by dividing the total business with total number of employees. Higher the ratio, the better it is for the bank and vice versa.

Profit per Employee:
As the name indicates this ratio reveals the profit per employee. It is calculated by dividing the profit after tax earned by the bank with the total number of employees. The higher the ratio, higher is the efficiency of the management and vice versa.

Credit Deposit Ratio:
This ratio assesses the efficiency of the bank's management in applying the deposits (including receivables) available excluding other funds like equity capital, etc. into advances with high yields. Savings deposits, demand deposits, term deposits and deposits of other banks are included in total deposits.

Return on Net worth: It is a measure of the profitability of a bank. In calculation of this ratio, Profit after tax is expressed as a percentage of shareholders investment.

Table 3: Camel Rating (2012- 16): Management Efficiency

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
BOB	17.178	1	7.802	1	70.73	4	7.99	3	2.25	4
Canara Bank	14.232	2	5.036	3	70.038	5	7.606	5	3.75	2
PNB	12.516	4	4.392	4	77.074	2	8.082	2	3	3
Central Bank of India	10.574	5	-0.2	5	73.768	3	7.772	4	4.25	1
Union Bank of India	13.316	3	5.288	2	78.534	1	10.732	1	1.75	5

The above table defines the efficiency of employees as well as management. The banks which have more points will be considered more efficient and ranked one.

Earning Quality:

The quality of earnings is a very important criterion which represents the quality of income in terms of income generated by core activity-income from lending operation. This criterion contains importance in the light of the argument that most of bank's earnings are from non-core activities such as treasury operation, investments, and corporate advisory service and so on.

Return on Assets:

This ratio reflects the percentage of how profitable a bank's assets are in generating income. The better utilization of assets will result in higher operating profit.

Net Interest Margin (NIM) to Total Assets:

NIM is the difference between the interest incomes and the interest expended. It is expressed as a percentage of total assets. A higher spread indicates the better earnings given the total assets.

Operating Profit to Total Assets:

This ratio reflects the return on assets employed. It is calculated by dividing the net profits with total assets of the bank. Higher the ratio reflects better earning potential and vice versa.

Interest Income to Total Income:

This ratio calculates the income from lending operations as a percentage of the total income earned by the bank during a year. Interest income includes interest/discount on advances/bills, income on investments, interest on balances with RBI and other interbank funds and others. Total income includes interest income and other income like commission, net profit (loss) on sale of investment, land and other assets, revaluation of investment and miscellaneous income.

Table 4: Camel Rating (2012- 16): Earning Quality

Bank	Return on Assets		NIM To Total Assets		Operating profit to Total Asset		Interest Income to Total Income		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
BOB	0.472	2	2.47	3	0.506	3	88.53	5	3.25	2
Canara Bank	0.458	4	2.322	5	0.432	4	90.464	2	3.75	1
PNB	0.55	3	3.406	1	0.526	1	89.592	4	2.25	4
Central Bank of India	-0.008	5	2.74	2	0.004	5	93.01	1	3.25	2
Union Bank of India	0.588	1	2.4	4	0.524	2	89.678	3	2.5	3

The above table defines the ranking of the banks on the basis of earning capacity of the banks more the points more efficient and better ranking.

Liquidity:

Liquidity is a crucial aspect which reflects bank's ability to meet its financial obligations and to maintain adequate level of liquid assets, which will otherwise result in decline in the earnings. An adequate liquidity position can be obtained either by increasing liabilities or by converting its assets quickly into cash. Bank has to take proper measures to hedge the liquidity risk, at the same time securing good proportion of funds to be invested in high return generating securities.

Liquid Assets to Total Assets:

This ratio measures the overall liquidity position of a bank. The liquid assets include cash in hand, money at call and short notice, balance with Reserve bank of India and balance with other financial institutions/banks (India and Abroad). The total assets include the revaluation of all the assets.

Government Securities to Total Assets:

This ratio is calculated by dividing the total amount invested in approved securities with total assets. Approved

securities include investments made in the state associated/owned bodies like Electricity Corporations, Housing Development Corporations, Regional Rural Banks and corporation bond.

Liquid Assets to Total Deposits:
This ratio measures the liquidity available to the depositors of a bank. The liquid assets include cash in hand, money at call and short notice, balance with Reserve bank of India and balance with other institutions/banks (India and Abroad). Total deposits include savings deposits, demand deposits, term deposits and deposits of other financial Institutions/banks.

Liquid Assets to Demand Deposits:
This ratio reflects the ability of bank to honour the demand from depositors during a particular year. In order to provide higher liquidity for depositors, bank has to invest these funds in highly liquid form.

Table 5: Camel Rating (2012- 16): Liquidity

Bank	Liquid Assets To Total Assets		Govt. Securities To Total Assets		Liquid Assets To Total Deposits		Liquid Assets To Demand Deposits		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
BOB	18.058	1	15.326	5	9.846	1	6.4344	1	2	3
Canara Bank	10.122	2	22.84	1	8.9905	2	7.3661	2	1.75	4
PNB	8.036	3	15.958	4	7.7485	3	6.7413	3	3.25	2
Central Bank of India	5.09	5	22.418	2	8.627	5	8.609	4	4	1
Union Bank of India	6.176	4	19.066	3	8.0605	4	7.6253	5	4	1

The above table shows the liquidity of the banks more average shows the more liquidity and have better rank.

Sensitivity (S):
Sensitivity ratios those are related to risk and covering power of organization are defined and calculated to finalize bank's performance model because risk indicators is very important and highlighted in CAMELS model. Under sensitivity various ratios i.e. Doubtful debts to Loans, Provisions of loan to Loans, demand deposits to total deposits and long term deposits to total deposits are calculated to measure the risks of a bank that affect their profitability.

Table 6: Camel Rating (2012- 16): Sensitivity

Bank	Doubtful debts/Loans		Provisions of loan/Loans		Demand deposits/Deposit		Long term deposits/Deposits		Group Rank	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
BOB	0.0232	4	0.025	4	0.07658	3	0.7378	2	3.25	2
Canara Bank	0.0164	3	0.0412	5	0.1178	5	0.7542	1	3.5	1
PNB	0.0278	5	0.003	1	0.071	2	0.6318	5	3.25	2
Central Bank of India	0.0036	1	0.005	2	0.0562	1	0.6624	4	2	4
Union Bank of India	0.0112	2	0.0072	3	0.08114	4	0.693	3	3	3

The above table explains the sensitivity of the banks means how much they are sensitive towards change. The less average explain the most sensitivity towards change and will get good rank.

Overall Composite Rating:

In order to assess the overall performance of Public Sector Banks in India, the composite rating has been calculated from the group ranking of the public sector banks in India for the period of 2012-2016 and results are presented in the below table.

Table 7: Overall Composite Camel Ratings (2012-16)

Banks	Capital Adequacy (C)	Asset Quality (A)	Management Efficiency (M)	Earnings Quality (E)	Liquidity (L)	Sensitivity (S)	Mean (X)		Rank
BOB	2	1	2.25	3.25	2	1.3125	1.9688	0.821289063	1
Canara Bank	3.25	3	3.75	3.75	1.75	2.125	2.9375	0.00390625	4
PNB	2	3.66667	3	2.25	3.25	2.4791667	2.7743	0.010139371	3
Central Bank of India	4	5	4.25	3.25	4	3.3125	3.9688	1.196289063	5
Union Bank of India	3.75	2.33333	1.75	2.5	4	2.0208333	2.7257	0.022292149	2
Grand Mean								2.053915895	
Standard Deviation							0.2637		

Table 7: depicts the group ranking of the selected 5 Indian public sector banks for the period 2012-2016. The table also defines the overall performance according to CAMELS approach. BOB have more points it means this bank is more efficient as compare to other bank.

Table 8: Classification of Public Sector Banks Based On Camel Criteria

Rank	CAMEL Criteria	Mean = 2.875, SD = 0.26	Banks under Study
Excellent	Upto (Mean–0.67 SD)	2.82	BOB,PNB,UBI
Good	From (Mean–0.67 SD) up to mean	2.82 to 2.87	
Fair	Above Mean, upto (Mean + 0.67 SD)	2.87 to 3.17	CB,
Poor	Above (Mean + 0.67 SD)	above 3.17	CBI

CONCLUSION:

Due to the many changes in the banking sector that have been witnessed in the recent years, like improved, quality of service, supervision and awareness about the need for banking, there has been a universally accepted evaluating technique like the CAMELS approach along with other existing procedures to analyze the performance from time to time. Various studies have been conducted in India over the performance of different categories of banks on various parameters. Different banks are ranked according to the ratings obtained on the most essential six parameters of CAMELS. The results of the present study clearly indicate that there is statistically no significant difference in the performance of the selected Public Sector Banks' performance during the period of study. Also it can be concluded that the banks with low ranking need to improve their performance to reach up to the desired standards.

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