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AN ANALYSIS OF CAMEL MODEL IN SELECT PUBLIC SECTOR BANKS

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ABSTRACT

As a country's financial system depends upon the financial soundness of banking industry, it is very much essential to measure it. The main objective of this study is to analyze the financial performance of select private sector banks and compare them using CAMEL Model. The study is related to a period of five years from financial year 2014-2015 to 2018 – 2019. The CAMEL model helped to measures the performance of banks from each of the important parameter like Capital Adequacy, Assets Quality, Management Efficiency, Earning Quality and Liquidity. From the analysis of select private banks, PNB, SBI Bank, BOB, UBI and BOM,the study is concluded giving the relative positions of the banks.

Introduction:

Though, Significance of performance evaluation in a Banking sector, for sustainable growth and development has been recognized since long it still requires a system that first measures all aspects of banks and then brings out the strengths and weaknesses of the banks to ensure further improvement. With the advances in computational tools, performance evaluation systems have evolved over a period of time from single aspect systems to more comprehensive systems covering all aspects of banks. CAMEL Model is one such rating system that proved to be better for performance measurement, evaluation and strategic planning for future growth and development of the Indian banks in the light of changing requirements of this sector.

Review of Literature:

CAMEL model as a tool is very effective, efficient and accurate to be used for evaluating the performance in banking industries and to anticipate the future and relative risk. CAMEL, as a rating system for judging the soundness of Banks is a quite useful tool that can help in mitigating the conditions and risks that lead to Bank failures. The CAMEL stands for

C - Capital adequacy, A - Asset quality, M – Management, E – Earning, L – Liquidity

Majumdar (2016), measured the financial performance of 15 banks in Bangladesh with CAMEL Model. Using Composite Ranking, average and ANOVA he concluded that there had been significant difference in the performance of selected banks. The study suggested that banks should take required steps to recover their shortcomings.

Erol (2014), compared the performance of Islamic banks against conventional banks in Turkey by using CAMEL model. The results showed that Islamic banks performed better in profitability and asset management ratios compared to conventional banks but slow in sensitivity to market risk criterion.

Anita Makkar (2013), analyzed comparative analysis of the financial performance of Indian commercial banks. The study concluded that on an average, there is no statistically significant difference in the financial performance of the public and private sector banks in India, but still, there is a need for overall improvement in the public sector banks to make their position strongin the competitive market.

Sushendra KumarMisra(2013), assessed the performance and financial soundness of State Bank Group using CAMEL approach, and concluded that there is a requirement to improve its position in respect to asset quality and capital adequacy

Aswini Kumar Mishra and et.al (2013), analyzed the soundness and the efficiency of 12 public and private sector banks based on market cap. CAMEL approach has been used over a period of twelve years (2000-2011), and it is established that private sector banks are at the top of the list, with their performances in terms of soundness being the best.

PriyaPonraj and GurusamyRajendran (2012), measured the bank competitiveness among the select Indian commercial banks in terms of financial strength. Financial strength of the bank is measured in terms of financial ratios viz. efficiency ratio, profitability ratio, capital adequacy ratio, income-expenditure ratio, deposits and return ratios. It is found that foreign banks are the most competitive compared to the private and public sector banks in terms of the profitability ratio, returns ratio and capital adequacy ratio.

Sufian Fadzlan (2012) examined the internal and external factors that influenced the performance of banks operating in the Indian banking sector during the period 2000-2008. The empirical findings from this study suggest that credit risk, network embeddedness, operating expenses, liquidity and size have statistically significant impact on the profitability of Indian banks.

Ashok Khurana and KanikaGoyal (2011), analysed the financial performance of public-sector banks and commercial banks in India , using the trend of operating cost / total cost, cost to income, labor/non labor cost, net interest income, NPA and capital to risk weighted asset ratio, the study observed that there is a need for increased absorption of enhanced technological capability by several banks to further argument yield of the banking sector and this would call for changes in processes and improvement in human resource skills.

Doonger Singh Kheechee (2011), attempted to compare the profitability of different categories of banks .The results shows that return on funds and return on advances are high in private and foreign banks whereas interest income is highly seen in public sector banks compared to their counter parts.

Ashish Kumar (2011), attempted to investigate the efficiency of Indian commercial banks with data envelopment analysis (DEA), a deterministic on- parametric approach. The results of the study show that only 22 banks are efficient on the criteria of technical efficiency and pure technical efficiency respectively. Further using ANOVA it was found that there is no significant difference in the mean technical efficiency scores of various banks belonging to various groups defined for the purpose of the study.

Bhagirathi NayakandNahak (2011), analyzed the performance of public sector banks in India during the post-liberalization period. It is found that reform measures have impacted positively in enhancing the stability and soundness of the public sector banks in India.

Vikas Choudhary and SumanTandon (2010), analyzed the financial performance of Public sector banks in India. It is concluded the CAGR of various variables have shown variation s frombank to bank.

Sreeramulu and et.al (2010), compares the efficiency of Indian banking industry over two time periods, 1999 - 2003 and 2004-2008. A Cobb Douglas stochastic frontier model is adopted in order to estimate the bank efficiency. The analysis suggests that there is a substantial efficiency improvement in the Indian banking sector during 2004-2008 as compared with 1999-2003. The improvements in the Indian banking sector are mainly attributed due to globalization, deregulation and advances in information technology. Nevertheless, still there is a wide scope for Indian banking industry to improve efficiency further.

Mabwe Kumbirai and Robert webb (2010)investigates the performance of south Africa`s commercial banking sector for the period 2005- 2009.Financial ratios are employed to measure the profitability, liquidity and credit quality. The study found that overall bank per Increased considerably in the first two years of the analysis. A significant change in trend is noticed at the onset of the global financial crisis in 2007, reaching its peak during 2008-2009.This resulted in falling profitability, low liquidity and deteriorating credit quality in the south African banking sector.

Ramachandran and Kavitha (2009), analyzed the importance of improving the profitability performance of the banking sector in recent years, a census study has been adopted by covering all the Indian scheduled commercial banks. The nationalized banks group showed a position of provisions and contingencies to total expenses in the first half of the study period and Capital Adequacy Ratio (CAR) during the second half of the study period. In relation to the private banks group, it has changed from other interest expenses ratio to capital adequacy ratio. noticed at the onset of the global financial crisis in 2007, reaching its peak during 2008-2009.This resulted in falling profitability, low liquidity and deteriorating credit quality in the south African banking sector.

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Need of the study

Although many studies based on the CAMEL model revealed performance of the public sector banks, it is always necessary to evaluate them continuously, so as to monitor the effectiveness and ensure the true financial position.

Objectives

1. To study the performance analysis of select public sector banks
2. To analyze the financial growth of the select public sector banks.
3. To rank the banks under the study based on performance and efficiency.

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Methodology of the study

Scope of the study: The study covers only five public sector banks in India and CAMEL ratios are used to evaluate their performance and efficiency to come to a conclusion that which bank is leading position in performance and efficiency.

Sources of Data: Data is collected from the secondary sources, which include Annual Reports, Data published on bank websites, Journals.

Sample Size: Sample is selected randomly. Data of top five private banks under BSE is collected for period of 5 years, from 2014 to 2019.

Tools for Analysis: CAMEL Model

1. C-capital adequacy
2. A-asset quality
3. M-management
4. E-earning and profitability
5. L-liquidity (also called asset liability management)

Table-1
Debt Equity Ratios (DER) & Capital Adequacy Ratios (CAR) For Select Banks

Year/Bank	**PNB**		**SBI**		**UBI**		**BOB**		**BOM**	
	DER	CAR	DER	CAR	DER	CAR	DER	CAR	DER	CAR
2014-15	6.5	18.7	9.1	16.8	8.9	17	7.5	16.0	15.1	16.0
2015-16	6.6	17.7	9.3	16.0	8.6	16.6	5.8	18.8	13.4	18.8
2016-17	6.6	17.1	8	16.7	9	15.0	6.1	17.1	10.0	17.1
2017-18	6.8	16.7	8.2	15.5	8.6	15.2	6.66	16.3	10.4	16.3
2018-19	6.5	17.4	8.0	14.6	9.3	14.9	6.6	16.7	8.23	16.7
AVG	6.6	17.5	8.5	15.98	8.9	15.8	6.5	17.0	11.4	17.0
Rank	**1**	**1**	**3**	**4**	**4**	**5**	**2**	**2**	**5**	**2**

The debt to equity ratio shows the percentage of company financing that comes from creditors and investors. A higher debt to equity ratio indicates that more creditor financing (bank loans) is used than investor financing (shareholders). A debt equity ratio of 1 would mean that investors and creditors have an equal stake in the business assets. From the table-1, it is observed that the average debt equity ratio of

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PNB BANK is lowest among all 5 banks. Hence the financial stability of SBI is better. Debt equity ratio of BOM bank is decreasing continuously since the financial year 2014-15.There is growth in the financial stability of BOM bank. And there are fluctuations in the debt equity ratio of other banks. Hence there is no continuous growth regarding debt to equity of other banks. Higher value of CAR ratio indicates better solvency and financial strength of the banks and lower value indicates poor solvency and financial strength of the banks. CAR ratio is fluctuating yearly for all the selected banks. Here the average CAR of PNB is higher than all the other banks with 17.498 hence the PNB Bank is strong to absorb its losses than other 4 banks. So it can be inferred that when considered C-CAR. As per two ratios PNB performance is better than all other select banks.

Table-2
Net NPA to Total Assets (NNTA) & Net NPA to Total Advances (NNTAD) Ratio for Select Banks

Year/Bank	PNB		SBI		UBI		BOB		BOM	
	NNTA	NNTAD	NNTA	NNTAD	NNTA	NNTAD	NNTA	NNTAD	NNTA	NNTAD
2014-15	0.4	0.7	0.1	0.1	0.2	0.3	0.3	0.6	0	0.0
2015-16	0.5	0.9	0.1	0.2	0.2	0.4	0.6	1.0	0.0	0.0
2016-17	0.9	1.6	0.1	0.2	0.2	0.4	0.5	0.9	0	0
2017-18	1.7	2.9	0.1	0.2	0.4	0.7	0.6	1.0	0.1	0.2
2018-19	3.2	5.4	0.2	0.3	1.4	2.3	0.3	1.2	0.4	0.8
AVG	1.36	2.3	0.1	0.2	0.5	0.8	0.8	0.9	0.1	0.2
RANK	5	5	2	2	3	3	4	4	1	1

The average **Net NPA to Total Asset Ratio** indicates the efficiency of the bank in assessing credit risk and, to an extent, recovering the debts. Lower the ratio better is the performance of the bank. It is observed from table-2, that the average Net NPA To Total Asset Ratio Of BOM Bank is lower than other selected banks. Hence the efficiency of BOB BANK in assessing credit is better than the other banks. BOM AND BOB BANK has growth in assessing credit compared to the financial year 2012-2013 and there is downfall in remaining banks. The Net NPA levels help us to know the efficiency of Credit Risk Management system of the bank. The ratio of Net NPAs to Net Advances is a measure of quality of assets and advances of the banks. The lower the Net NPA level, the better is the quality of the assets of the bank. The average Net NPA to Total Advances ratio of BOM bank is lower than all other selected banks. Hence

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BOM is better performing than other banks. There is no growth in the Net NPA to total Advances Ratio of all the selected banks when compared to the financial year 2014-15. Therefore, based on the ratios considered for ASSET QUALITY of the banks, SBI and BOM banks are performing better than other banks under the study.

Table-3
Credit Deposit (CDR) & Return on Net worth (RNR) Ratios for Select Banks

Year/Bank	**PNB**		**SBI**		**UBI**		**BOB**		**BOM**	
	CDR	**RNR**	**CDR**	**RNR**	**CDR**	**RNR**	**CDR**	**RNR**	**CDR**	**RNR**
2014-15	99.2	12.4	80.9	18.5	77.9	15.6	94.9	14.4	70.1	22.3
2015-16	102.0	13.4	82.4	19.5	81.8	16.2	89.7	12.2	74.9	22.7
2016-17	107.1	13.8	81.0	16.4	87.1	16.6	88.3	13.1	82.8	17.1
2017-18	103.2	11.1	85.0	16.9	94.6	15.4	85.5	8.7	87.9	18.4
2018-19	94.7	10.1	86.1	16.2	90.0	16.5	86.4	12.3	92.5	15.0
AVG	101.2	12.2	83.1	17.5	86.3	16.1	89.0	12.1	81.7	19.1
Rank	1	4	4	2	3	3	2	5	5	1

Credit deposit ratio indicates the total advances as a proportion of total deposits. It shows the management's aggressiveness to improve income by higher lending operations. The ratio of 60 percent is considered as a norm for banks. If CD ratio is higher a larger percentage of deposits mobilized are lent to different sectors and it will lead to an improvement in profitability of banks. It is noted from table-3, that the average credit deposit ratio of PNB is higher than all other selected banks. Hence, the performance of PNB BANK in terms of deposits is efficient than the other banks. There is a continuous growth in all the selected banks except BOB regarding credit deposit ratio. The return on net worth ratio is a profitability ratio that measures the ability of a firm to generate profits from its shareholders investments in the company. The average return on net worth ratio of BOM bank is higher in all the selected banks with 19.152. Hence, the BOM is performing more effectively in management of funds than other selected

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banks. There is no growth in all selected banks except UBI regarding Return on Net worth Ratio when compared to the 2014-15.

So it can be inferred that when considered Management Quality ratios. As per two ratios PNB bank is performing well among all 5 select banks.

Table-4
Interest Income to Total Assets (IITA) & Return on Assets (ROA) Ratios for Select Banks

YEAR/BANK	PNB		SBI		UBI		BOB		BOM	
	IITA	ROA	IITA	ROA	IITA	ROA	IITA	ROA	IITA	ROA
2014-15	7.4	1.5	8.7	1.6	7.9	1.5	9.6	1.6	8.3	1.3
2015-16	7.4	1.6	8.3	1.7	7.9	1.6	10	1.7	9.1	1.4
2016-17	7.5	1.7	8.2	1.7	7.6	1.5	9.1	1.7	8.4	1.4
2017-18	7.3	1.3	8.4	1.7	7.8	1.5	8.5	1.08	8.1	1.5
2018-19	7.0	1.2	8.0	1.6	7.4	0.6	8.2	1.5	7.6	1.5
AVG	7.3	1.5	8.3	1.7	7.77	1.3	9.1	1.5	8.3	1.4
RANK	5	2	2	1	4	5	1	3	3	4

Net interest margin is the ratio of net interest income to total asset. A positive net interest margin means the investment strategy pays more interest than it costs. Conversely, if net interest margin is negative, it means the investment strategy costs more than it makes interest. As analyzed from the table, the average interest income to total assets ratio of BOB is higher in selected banks with 9.104 and the performance of BOB is better than other banks. There is no growth in all the selected banks regarding to the Interest Income to Total Assets compared to the financial year 2014-15. Return on Assets measures the bank profits per currency units of assets. It is an indicator of assets management's efficiency of an organization. It is one among the guidelines of RBI for balance sheet analysis of bank. Higher value of this ratio indicates better financial productivity and profitability of banks and lower value indicates lower productivity of banks. Table- 4 reveals that the average return on assets ratio of HDFC bank is higher in all selected banks. Hence, the HDFC BANK shows a better financial productivity and profitability than the other selected banks. So it is understood that when considered two efficiency ratios, SBI and UBI banks are performing well among all 5 select banks.

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Table-5
Liquid Assets to Total Assets (LATA) & Liquid Assets to Total Deposits (LATD) Ratios forSelect Banks

Year/Bank	PNB		SBI		UBI		BOB		BOM	
	LATA	LATD	LATA	LATD	LATA	LATD	LATA	LATD	LATA	LATD
2014-15	7.7	14.1	6.1	9.2	6	8.0	4.4	7.2	4.1	6.0
2015-16	6.9	12.5	8.0	10.7	7.3	10.0	6.8	10.1	5.4	7.9
2016-17	6.5	11.7	6.1	8.0	7.8	11.1	5.9	8.3	5.5	8.2
2017-18	8.3	14.2	5.4	7.1	6.3	9.3	5.6	7.8	4.9	7.3
2018-19	9.1	15.4	5.6	7.6	8.4	12.1	10.5	14.3	9.0	13.6
AVG	7.7	13.6	6.3	8.5	7.1	10.1	6.6	9.5	5.8	8.6
RANK	1	1	4	5	2	2	3	3	5	4

Ratio of Liquid Assets to Total Assets indicates that what percent of total assets are held as liquid assets. This liquidity can be considered to be adequate enough to meet the immediate liabilities of the banks. This ratio shows the degree of liquidity preference adopted by the Bank. Higher value of this ratio indicates higher liquidity of banks and lower value indicates lower liquidity of banks. From table-5, it can be analyzed that there is a growth in the liquidity efficiency of all the selected banks in the financial year 2018-19 compared to the financial year 2014-15.The average Liquid Assets to Total Assets ratio of PNB higher in all selected banks with 7.75. The liquid assets to total deposits ratio indicates that percent of total deposits are held as liquid Assets. Higher value of this ratio indicates higher liquidity of bank and lower value of the ratio indicates lower liquidity of bank. The average Liquid Assets to Total Deposits ratio of PNB is higher in all selected banks with 13.60. Hence, the liquidity position of PNB BANK is better than the other banks. There is a growth in the liquidity position of the BOB, UBI and BOM compared to the financial year 2014-15. Therefore from two ratios of liquidity, it can be inferred that PNB and UBI banks are performing well in the aspects of liquidity among all 5 select banks

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Table-6:
Overall ranking for select banks based on CAMEL Rating

Ratio/Bank	PNB	SBI	UBI	BOB	BOM
Debt Equity Ratio	1	3	4	2	5
Capital Adequacy Ratio	1	4	5	2	3
Net NPA To Total Assets	5	2	3	4	1
Net NPA To Total Advances	5	2	3	4	1
Credit Deposit Ratio	1	4	3	2	5
Return On Net worth	4	2	3	5	1
Interest Income To Total Assets	5	2	4	1	3
Return On Assets	2	1	5	3	4
Liquid Assets To Total Assets	1	4	2	3	5
Liquid Assets To Total Deposits	1	5	2	3	4
Final Ranks Of Banks	**1**	**2**	**5**	**3**	**4**

table-6, it can be inferred that PNB bank has best performance in Debt equity ratio, Capital adequacy ratio, Credit deposit ratio, Liquid assets to total assets ratio and Liquid assets to total deposits ratio. SBI bank has best performance in Return on assets ratio and Net NPA to total advances ratio. BOB bank has best performance in Interest income to total assets ratio. BOM bank has performance Net NPA to total assets ratio and Return on net worth ratio. By considering ranks scored on the selected ratios in the CAMEL MODEL the PNB is ranked first and UBI as last in their performance.

Conclusion:

Due to radical changes, 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. In the present study with reference to Capital adequacy ratios PNB bank is performing well than other banks. As per Asset quality ratios SBI and BOM banks are performing well. When considered Management quality ratios, ICICI bank performance is better than other banks. As per earning capacity ratios SBI and BOB are performing better than other banks. When Liquidity is considered PNB is in top among 5 banks and SBI and BOM banks are in last place. There is no continuous growth with respect to any parameters in all selected Banks.