ANALYZING SOUNDNESS OF NATIONALIZED BANKS IN INDIA: A CAMEL APPROACH

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Abstract: Performance of the economy of any country is largely dependent on the performance of its banking sector. Since, banking sector constitutes a major component of the financial service sector. Soundness of the banking sector is essential for a healthy and vibrant economy. The efficiency, productivity, profitability, stability and a shock free economy is possible only when a country is having a sound and healthy banking sector. The present research work has been undertaken to analyze the soundness of five nationalized banks in India. In order to measure the performances of these banks CAMEL MODEL Approach has been applied, incorporating important parameters like Capital Adequacy, Assets Quality, Management Efficiency, Earnings Quality and Liquidity. The finding of the study shows that Bank of Baroda has been ranked at the top position, the Union Bank of India and Dena Bank secured the 2nd position, the next was the State Bank of India which secured the 4th position and in the last position was the UCO Bank which secured the 5th position.

Keywords: Capital Adequacy, Assets Quality, Management Efficiency, Earning Quality and Liquidity.
JEL Code: G2, G12, G21, G32& G33.

Introduction

The banking arena in the country has witnessed significant changes in the last two decades due to the outbreak of reforms in the financial sector. The process of liberalization initiated in 1991 has made ingress of new private sector banks possible and permitted the foreign sector banks to increase their branches in the banking sector. As a result of which, the nationalized banks were forced to face the cutthroat competitions created in the market, which is created due to the entry of private banks, foreign banks and NBFC's. The private banks and foreign banks are coming up with their attractive policies and providing the customer with better services with the aid of hi-technology and new ways of providing convenience to customer. Influenced by the new found technology and increased thrust on product innovation, the nationalized banks in the country also witnessed a phenomenal growth in the last two decades. In the above background it is essential to examine the financial soundness of nationalized banks by using the CAMEL Model. Since, CAMEL Model attempts to detect problems before they manifest themselves. CAMEL model is basically a ratio based model used for evaluating the performance of banks and is used for ranking or rating of the banks.

Review of literature

Prasuna (2003) opinioned that 'tough competition amongst the banks benefits the consumers with better facilities, innovative products and better bargains'. A competitive banking system promotes the efficiency and therefore important for growth, but market power is necessary for stability in the banking system (Northcott, 2004). Bodla and Verma (2006) emphasized that the prime objective of the CAMEL model of rating banking institutions is to catch up the comparative performance of various banks. In the views of Ghosh Saibal (2010), privatization improves bank soundness, enhances profitability and efficiency since government ownership has been empirically proven to be detrimental to growth. Goyal Krishna A., (2010) analyzes the various risk management measures and strategies in place in India owing to increase in competition, deregulation, innovative financial instruments and delivery channels.

A profitable and sound banking sector is at a better point to endure adverse upsets and adds performance in the financial system (Athanasoglouet al., 2008). Sen Gupta (2011) paper deals with the introduction of Basel III norms post the 2008 financial crisis, and the challenges associated with its implementation in India. Chaudhary Sahila and Sultan Singh (2012) analyze the impact of the financial reforms of 1991 on the increase in soundness of Indian Banking through its impact on the assets quality. According to them the key players to ensure this soundness are again, risk management, NPA levels, effective cost management and financial inclusion.

Importance of the study

With the emergence of the private sector banks as well as with increase in competition from foreign banks, the nationalized banks were forced to restructure their activities and were

obliged to improve professionalism in the banking activities. Increase in competition and the insistence on profitability has compelled the nationalized banks to move towards economic oriented model, leaving the social approach followed for decades. Against this back ground, it is imperative to measure the soundness of the banking sector through a performance measurement system that provides an opportunity to assess the performances of these nationalized banks.

Objective of the study

This study has the following objectives:

- To analyze the concept of CAMEL Model approach.
- To examine the Capital Adequacy, Assets Quality, Management Efficiency, Earning Quality and Liquidity of nationalized banks.
- To study the overall performances and soundness of nationalized banks with the help of CAMEL Model approach.

Hypothesis of the study

Ho: There is no significant difference in the performances and soundness of the five nationalized banks on the basis of CAMEL Approach.

Methodology

For the study, statistical data has been collected from various annual reports published periodically by the Nationalized Banks. The statistical techniques like percentage, averages, coefficient of variation, one way ANOVA have also been applied. For proper analysis and evaluation of operational performance and financial strength, the individual items of profit and loss accounts and balance sheet have also been regrouped.

Limitations of the study:

Limitations are always a part of any kind of research work, as the report is mainly based on secondary data; proper care must be taken in knowing the limitations of the required study.

1. The financial performance of the company is shown just for the last six years, ending 2013. Hence, any uneven trend before or beyond the set period will be the limitations of the study.
2. This analysis is based on only monetary information, analysis of the non monetary factors are ignored.
3. As per the requirement of the study some data have been grouped and sub grouped.

Performance Measurement of Nationalized Banks on the basis of CAMEL Model

CAMEL model is the mechanism which is used for the critical analysis of the balance sheet of banks and the presentation of such analysis to provide for the assessment of the health of the banks. In the present research work, CAMEL model has been used as a measuring rod to measure the capital adequacy, assets quality, management efficiency, earning quality and liquidity of five nationalized banks.

Capital Adequacy Ratio

Capital Adequacy indicates the financial health of a banking unit. Capital Adequacy maintains depositors' confidence and promotes the stability and efficiency of financial system. Capital Adequacy reflects the overall financial conditions of banks and its ability to meet the need for additional capital. It also shows the bank's ability to meet financial instability. Banks have to maintain Capital Adequacy as specified by RBI. As per RBI norms, Banks in India should have Capital Adequacy of 12%. It is calculated as follows:

$$Capital\ Adequacy\ Ratio = \frac{(Tier\ I + Tier\ II)\ Capital}{Risk\ Weighted\ Assets} \times 100$$

Interpretation

Table no.1, states the capital adequacy ratio of five nationalized banks. In the year 2007–2008 the State Bank of India had the highest CAR with 13.54% followed by Bank of Baroda (BOB) with 12.91%. The Union Bank was next with 12.51% followed by 11.09% by the DENA Bank and in the last position was UCO Bank with 10.09%. In the year 2008–2009 the CAR for SBI decreased to 12.97% followed by BOB to 12.88%. The highest in this year was of Union Bank with 13.27% and the lowest was of UCO Bank with 9.75%. In the year 2009–2010, the CAR was highest for BOB with 12.84% followed by DENA Bank with 12.77%. The lowest was of UCO bank with 11.35%. In the year 2010–2011, the CAR was highest of DENA Bank with 13.41% followed by BOB with 13.02%. In the year 2011–2012, the CAR of BOB was highest with 12.95% followed by SBI with 12.05%. In the year 2012–2013, the CAR was highest for UCO Bank 12.42% followed by BOB with 12.09%. The overall average of Capital Adequacy Ratio was highest of BOB with 12.78% followed by Union Bank with 12.42%. On the basis of Capital Adequacy Ratio, the BOB was having the 1st rank followed by Union Bank of India which was having the 2nd rank. The 3rd rank was of SBI followed by DENA Bank which was having the 4th rank and the last rank was of UCO Bank. The Standard Deviation was highest of State Bank of India with 0.97 and lowest of Bank of Baroda with 0.31. The coefficient of variation was highest of UCO Bank with 8.45% and the lowest was of Bank of Baroda with 2.46%.

Table No. 1: Capital Adequacy Ratio (%)

Year	State Bank of India	Bank of Baroda	Union Bank of India	Dena Bank	UCO Bank
2007–2008	13.54	12.91	12.51	11.09	10.09
2008–2009	12.97	12.88	13.27	12.07	9.75
2009–2010	12.00	12.84	12.51	12.77	11.35
2010–2011	10.69	13.02	12.95	13.41	11.87
2011–2012	12.05	12.95	11.85	11.51	11.03
2012–2013	11.22	12.09	11.45	11.03	12.43
Mean	12.08	12.78	12.42	11.98	11.09
Rank	3	1	2	4	5
S.D.	0.97	0.31	0.62	0.87	0.94
C.V.	8.00	2.46	4.97	7.30	8.45

Source: Compiled from the annual reports of the respective banks. (From 2008–2013)

Table No. 2: Net NPA to Net Advances Ratio

Year	State Bank of India	Bank of Baroda	Union Bank of India	Dena Bank	UCO Bank
2007–2008	1.78	0.47	0.17	0.94	1.98
2008–2009	1.79	0.31	0.34	1.09	1.18
2009–2010	1.72	0.34	0.81	1.21	1.17
2010–2011	1.63	0.35	1.19	1.22	1.84
2011–2012	1.82	0.54	1.7	1.01	1.96
2012–2013	2.1	0.24	1.79	1.39	3.17
Mean	1.81	0.38	1.00	1.14	1.88
Rank	4	1	2	3	5
S.D.	0.14	0.10	0.62	0.15	0.67
C.V.	8.02	26.79	62.06	13.03	35.46

Source: Compiled from the annual reports of the respective banks. (From 2008–2013)

Assets Quality

Assets Quality is an important tool to judge the degree of financial strength. It determines the component of non-performing assets as a percentage of total assets. It shows the types of debtors the banks are having. It is a measure of quality of assets when management has not provided for loss on NPAs. It is calculated as follows:

$$\textit{Net NPA to Net Advances Ratio} = \frac{\textit{Net NPA}}{\textit{Net Advances}}$$

Interpretation

Table no.2, states the Net NPA to Net Advances Ratio of five nationalized banks. According to the above study, in the year 2007–2008, the Net NPA to Net Advances Ratio was highest of UCO Bank with 1.98 followed by SBI with 1.78. The lowest Net NPA to Net Advances Ratio was 0.47 of BOB. In the year 2008–2009, the highest Net NPA to Net Advances Ratio was of SBI with 1.79 followed by UCO Bank with 1.18. The lowest Net NPA to Net Advances Ratio was of BOB with 0.31. In the year, 2009–2010 the Net NPA to Net Advances Ratio was highest of SBI with 1.72 followed by DENA Bank with 1.21. In the year, 2010–2011, the Net NPA to Net Advances Ratio was highest of UCO Bank with 1.84 followed by SBI with 1.63. In the year, 2011–2012, the Net NPA to Net Advances Ratio was highest of UCO Bank with 1.96 followed by SBI with 1.82. The Lowest Net NPA to Net Advances Ratio in this year was of BOB with 0.54. In the year 2012–2013, the Net NPA to Net Advances Ratio was highest of UCO Bank with 3.17 followed by SBI which was 2.1 and the lowest was of BOB with 0.24. The overall average of the Net NPA to Net Advances Ratio was highest of UCO Bank with 1.88 followed by SBI with 1.81. The next was DENA Bank with 1.14 followed by Union Bank of India with 1.00 and at last it was BOB with 0.38. On the basis of ranking, the BOB was ranked 1st, Union Bank of India was ranked 2nd, the DENA Bank was ranked 3rd, the SBI was ranked 4th and the UCO Bank was ranked 5th. The Standard Deviation was highest of UCO Bank with 0.67 and lowest of Bank of Baroda with 0.10. The coefficient of variation was highest of Union Bank of India with 62.06% and the lowest was of SBI with 8.02%.

Management Efficiency

Ratios in this area involve subjective analysis and efficiency of management. It shows management capability to assign premium to better quality bank and discount the poorly managed ones. For measuring the management efficiency, business per employee has been calculated. Business per employee attempts to measure the efficiency of all the employees of a bank in generating business for the bank. It is calculated as follows:

$$\textit{Business per Employce Ratio} = \frac{\textit{Total Business}}{\textit{Total Employees}}$$

Interpretation

Table no.3, states the business per employee of the five nationalized banks. In the year 2007–2008, the business per employee was highest of Bank of Baroda with 7.04, followed by Union Bank of India which was 6.2. The lowest in this ratio was of State Bank of India which was 4.56. In the year, 2008–2009, the business per employee was highest of Bank of Baroda which was 9.13, followed by UCO Bank with 7.32 and the lowest in this year was 5.56 of State Bank of India. In the next year 2009–2010, business per employee was highest of Bank of Baroda which was 9.81, followed

Table No. 3: Business per Employee (Per Lakh)

Year	State Bank of India	Bank of Baroda	Union Bank of India	Dena Bank	UCO Bank
2007–2008	4.56	7.04	6.2	5.76	5.8
2008–2009	5.56	9.13	6.94	7.31	7.32
2009–2010	6.36	9.81	8.53	8.27	9.01
2010–2011	7.05	12.29	10.43	10.99	11.36
2011–2012	7.98	14.66	10.7	13.17	12.47
2012–2013	8.07	16.89	12.15	14.75	13.43
Mean	6.60	11.64	9.16	10.04	9.90
Rank	5	1	4	2	3
S.D.	1.26	3.36	2.12	3.21	2.75
C.V.	19.14	28.91	23.17	31.96	27.81

Source: Compiled from the annual reports of the respective banks. (From 2008–2013)

Table No. 4: Return on Average Assets Ratio (%)

Year	State Bank of India	Bank of Baroda	Union Bank	Dena Bank	UCO Bank
2007–2008	1.01	0.89	1.26	1.06	0.52
2008–2009	1.04	1.09	1.27	1.02	0.59
2009–2010	0.88	1.21	1.25	1.01	0.87
2010–2011	0.71	1.33	1.05	1	0.66
2011–2012	0.88	1.24	0.79	1.08	0.69
2012–2013	0.91	0.9	0.79	0.86	0.33
Mean	0.91	1.11	1.07	1.01	0.61
Rank	4	1	2	3	5
S.D.	0.11	0.17	0.21	0.07	0.17
C.V.	11.81	15.08	19.70	7.03	27.05

Source: Compiled from the annual reports of the respective banks. (From 2008–2013)

by UCO Bank which was 9.01 and the lowest was of State Bank of India with 6.36. In the year 2010–2011, the business per employee was highest of Bank of Baroda which was 12.29, followed by UCO Bank which was 11.36 and the Lowest was 7.05 which was of State Bank of India. In the year, 2011–2012, the business per employee was highest of Bank of Baroda which was 14.66, followed by 13.17 which was of DENA Bank. The lowest business per employee for this year was of State Bank of India being 7.98. In the next year of 2012–2013, the highest business per employee was f Bank of Baroda which was 16.89, followed by 14.75 of DENA Bank. The lowest in this year was of 8.07 of SBI. The mean was highest of Bank of Baroda with 11.64, followed by DENA Bank with 10.04. The Bank of Baroda ranked 1st, DENA Bank 2nd, UCO Bank3d, Union Bank of India 4th an SBI 5th. The Standard Deviation was highest of Bank of Baroda with 3.36 followed by DENA Bank with 3.21 and lowest of State Bank of India with 1.26. The coefficient of variation was highest of DENA Bank with 31.96% followed by Bank of Baroda with 28.91 and the lowest was of SBI with 19.14%.

Earning Quality

Earning Quality shows the ability of a bank to earn regularly. It also explains the sustainability and growth in earnings in the future. This factors gains importance on the fact that much of the banks income come through non -core activities i.e., investments, treasury operations and so on. This ratio expresses the quality of income in form of income generated by core activities income. For measuring the earning quality of five nationalized banks return on average assets ratio was applied which measures the efficiency in utilization of assets. It is calculated as follows:

$$\textit{Return on Average Assets Ratio} = \frac{\textit{Net Profit}}{\textit{Averange Assets}} \times 100$$

Interpretation

Table no. 4, states the Return on Average Assets ratio of the five nationalized banks of India. In the year, 2007–2008, the Return on Average Assets ratio was highest of the Union Bank of India with 1.26, followed by DENA Bank with 1.06. The lowest Return on Average Assets ratio was of UCO Bank with 0.52. In the next year 2008–2009, the highest Return on Average Assets ratio was of Union Bank of India with 1.27, followed by Bank of Baroda with 1.09 and the lowest was of UCO Bank with 0.59. In the year 2009–2010, the highest Return on Average Assets ratio was of Union Bank of India with 1.25, followed by Bank of Baroda with 1.21 and the lowest of Return on Average Assets ratio was of UCO Bank with 0.87. In the year 2010–2011, the highest Return on Average Assets ratio was of Bank of Baroda with 1.33, followed by Union Bank of India with 1.05 and the lowest was of UCO Bank with 0.66. In the year 2011–2012, the highest Return on Average Assets ratio was of Bank of Baroda with 1.24, followed by DENA Bank with 1.08 and the lowest was of UCO Bank with 0.69. In the last year 2012–2013, the Return on Average Assets ratio was highest of SBI with 0.91, followed by Bank of Baroda with 0.90 and the lowest was of UCO Bank with 0.33. The overall average was highest of Bank of Baroda with 1.11, followed by Union Bank of India with 1.07 and the lowest was of UCO Bank with 0.61. Accordingly, the Bank of Baroda was ranked 1st, Union Bank of India 2nd, DENA Bank 3rd, SBI 4th and UCO Bank 5th. The Standard Deviation was highest of Union Bank of India with 0.21, followed by Bank of Baroda and UCO Bank with 0.17. The coefficient of variation was highest of UCO Bank with 27.05% followed by Union Bank of India with 19.70%.

Liquidity

Liquidity of a bank represents its ability to meet its financial responsibilities. Maintaining correct level of liquidity is

important for ensured growth and earning. Banks have to be more careful in investments in order to create more profit on investment as well as to provide liquidity to the depositors. High Liquidity ratio shows the banks efficiency. For measuring the liquidity of five nationalized banks liquid assets to total assets ratio was applied which measures the overall liquidity position of the bank. It is calculated as follows:

$$\textit{Liquid Assets to total Assets Ratio} = \frac{\textit{Liquid Assets}}{\textit{Total Assets}}$$

Interpretation

Table no. 5, shows the Liquid Assets to Total Assets Ratio of the five nationalized banks of India. In the year 2007–2008, the highest Liquid Assets to Total Assets Ratio was of Bank of Baroda with 0.1242, followed by SBI with 0.1234 and the lowest was of UCO Bank with 0.0871. In the next year 2008–2009, the Liquid Assets to Total Assets Ratio was of SBI being 0.1299, followed by DENA Bank with 0.1209 and the lowest was of UCO Bank with 0.0972. In the year 2009–2010, the highest Liquid Assets to Total Assets Ratio was of Bank of Baroda which was 0.1274, followed by SBI with 0.1061. In the following year 2010–2011, the highest Liquid Assets to Total Assets Ratio was Bank of Baroda with 0.1393, followed by SBI with 0.1269. In the year 2011–2012, the highest Liquid Assets to Total Assets Ratio was of Bank of Baroda with 0.1435, followed by SBI with 0.0955 and the lowest of Union Bank of India with 0.0598. In the last year 2012–2013, the highest Liquid Assets to Total Assets Ratio was of Bank of Baroda with 0.1561, followed by SBI with 0.0927 and the lowest Liquid Assets to Total Assets Ratio was of Union Bank of India with 0.052. The highest overall average of Liquid Assets to Total Assets Ratio was of Bank of Baroda with 0.1327 and the lowest was of Union Bank of India with 0.0781. Accordingly, the Bank of Baroda was ranked 1st, State Bank of India 2nd, DENA Bank 3rd, UCO Bank 4th and Union Bank of India 5th. The highest Coefficient of variation was 21.55 of Union Bank of India and lowest was of Bank of Baroda with 12.02.

Table No. 5: Liquid Assets to Total Assets Ratio

Year	State Bank of India	Bank of Baroda	Union Bank	Dena Bank	UCO Bank
2007–2008	0.1234	0.1242	0.0913	0.1045	0.0871
2008–2009	0.1299	0.1059	0.0993	0.1209	0.0972
2009–2010	0.1061	0.1274	0.0808	0.0888	0.059
2010–2011	0.1269	0.1393	0.0852	0.0764	0.1039
2011–2012	0.0955	0.1435	0.0598	0.0635	0.0754
2012–2013	0.0927	0.1561	0.052	0.0866	0.0621
Mean	0.1124	0.1327	0.0781	0.0901	0.0808
Rank	2	1	5	3	4
S.D.	0.02	0.02	0.02	0.02	0.02
C.V.	13.35	12.02	21.55	20.59	20.81

Source: Compiled from the annual reports of the respective banks.
(From 2008–2013)

Testing of Hypothesis

Null Hypothesis (Ho)-

There is no significant difference in the performances and soundness of the five nationalized banks on the basis of CAMEL Approach.

The critical value of F for $v_1 = 4$ and $v_2 = 20$ at 5% level of significance is 2.866 whereas the calculated value of F is 8.59. Since the calculated value of F is more than the table value, we conclude that there is significant difference in the performances and soundness of the five nationalized banks on the basis of CAMEL Approach during the study period. Hence, null hypothesis is rejected.

Conclusion

Interpretation

Table no.7, depicts overall raking based on CAMEL Model to rate the banks according to their performance. It is clear from the above table that BOB has been ranked at the top position with composite average of one. The Union Bank of India and Dena Bank secured the 2nd position with almost 2 each. The next was the State Bank of India which secured the 4th position with the composite average of 3.6 and in the last position was the UCO Bank which secured the 5th rank with the composite average of 4.4.

Table No. 6: Analysis of Variance (ANOVA) Table:
One Way Classification Model

Sources of Variation	Sum of Squares (SS)	Degree of Freedom (v)	Mean Square (MS)
Between Samples	31.6	4	7.90
Within Samples	18.4	20	0.92
Total	50.0		

Interpretation of ANOVA

$$\mathbf{F = -8.59 \ \& \ F_{0.05} = 2.866}$$

$$\mathbf{F > t_{0.05}}$$

Table No. 7: Composite Ranking: Overall Performance

Name of Banks	C	A	M	E	L	Average	Rank
State Bank of India	3	4	5	4	2	3.6	4
Bank of Baroda	1	1	1	1	1	1	1
Union Bank of India	2	2	4	2	5	3	2
Dena Bank	4	3	2	3	3	3	2
UCO Bank	5	5	3	5	4	4.4	5

Suggestions

The following suggestions could be laid down in the light of the findings:

i. The UCO Bank needs to increase its Capital Adequacy Ratio in order to maintain its depositors' confidence and to promote the stability and efficiency of its financial system.

ii. The UCO Bank should give due importance to the management of its assets since, the quality of assets is an important parameter to measure the degree of financial strength. .

iii. The State Bank of India should improve its management efficiency in order to take crucial decisions depending on the risk perception.

iv. The UCO Bank should try to improve the quality of its core banking activities i.e., from lending activities in order to increase income. Since, quality of earning is an important criterion that determines the ability of a bank to earn consistently.

v. The Union Bank of India should give utmost importance to its liquidity position and should try to improve it, since liquidity is a crucial aspect which measures the bank's ability to meet its financial obligations.

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