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ANALYSIS OF CAMEL RATING (A CASE STUDY OF SBI)

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Abstract
A country's economic development depends on its healthy financial system. The real macro economic factors are depending upon the financial system of a country. A healthy banking system in any economy is an effective measure and indicator of performance of economy as a whole of that country. Hence, evaluation of financial performance of banking sector is an effective indicator to check the soundness of economic activities of an economy. CAMEL (Capital Adequacy, Asset Quality, Management Quality, Earnings and Liquidity) rating criterion is used as bank supervision by the regulators to assess and evaluate the performance and financial soundness of the activities of the bank.

The objectives of this study are to analyse the overall financial position and performance of State Bank of India using CAMEL model using parameters like Capital Adequacy, Asset Quality, Managerial Efficiency, Earnings Quality and Liquidity and to provide findings and suggestions based on results. This study is a detailed research study based on analytical research design. SBI Bank has been selected for the purpose of the study. The data for the period 2009-10 to 2016-17 (three years) has been collected Only secondary source of data collection has been used viz. annual report of the banks, Statistics published by RBI and Moneycontrol.com etc. Sixteen financial ratios have been used to assess the performance of the bank. Both descriptive and inferential statistics are used for data analysis and interpretation. In descriptive statistics, average, Standard deviation, coefficient of variation and compound annual growth rate. In inferential statistics one way ANOVA is used. In nutshell, present study concludes that there is alarming decrease in quality of assets due to increase in NPAs and aggressive approach in its investment pattern during the study period.

Keywords: Cagr, Anova and C.V.

Introduction

A country's economic development depends on its healthy financial system. The real macro economic factors are depending upon the financial system of a country. A healthy banking system in any economy is an effective measure and indicator of performance of economy as a whole of that country. The studies of McKinnon (1973) and Shaw (1973) emphasized that there is a strong correlation between economic growth and financial system of a country. Banks played very important role in capital formation in the economy and transfer of resources from a region of saving groups to the region of deficit groups using financial resources for production of goods or services. Hence, evaluation of financial performance of banking sector is an effective indicator to check the soundness of economic activities of an economy. There is a substantial improvement over the previous supervisory system of banking sector in terms of assets quality, management efficiency, earning quality and recovery to regulate the level of risk and financial viability of commercial banks. CAMEL (Capital Adequacy, Asset Quality, Management Quality, Earnings and Liquidity) rating criterion is used as bank supervision by the regulators to assess and evaluate the performance and financial soundness of the activities of the bank. In India two supervisory rating models namely CAMEL (Capital Adequacy, Assets Quality, Management, Earning, and Liquidity) and CACS (Capital Adequacy, Assets Quality, Compliance, Systems and Controls) for rating of Indian commercial Banks and Foreign Banks operating in India are recommended by RBI. Therefore, present study is undertaken to analyse the performance of State Bank of India using CAMEL model.

Review of Literature

The financial performance of the banking sector has been assessed many times in different time period on the basis of different tested methods. Many researchers, academicians and policy makers have come up with investigated studies till date. Some of these studies' summaries are here:

Said and Saucier in their research title "Liquidity, Solvency and Efficiency? An empirical analysis of Japanese Bank's distress (2003) "studied the performance of the Japanese Bank. It evaluated the liquidity, solvency and efficiency using the CAMEL Model. The data sample for the study was taken from the year 1993 to 1998. It concluded the capital adequacy, assets and management quality, earning ability and liquidity positions of the banks.

Prasuna (2004) in his research title "Performance Snapshot 2003-04, in Chartered Financial Analyst" evaluated the performance of 65 Indian banks with the help of CAMEL Model. The study was conducted for the period 2003- 2004. The concluding analysis of the study enlightened the tough competition in the market, which benefited the consumers as it shoots up their bargaining power as well as created an urge for better service quality and innovation.

Sarkar (2005) in his analysis title "CAMEL Rating system in the context of Islamic Banking", which was published in Journal of Islamic Economics and Finance, examined the regulation and supervision of Islamic banks by central bank in Bangladesh. The study enabled the regulators and supervisors to get a Sariah benchmark to facilitate the supervision and inspection of Islamic banks and financial institutions from Islamic outlook.

Siva and Natarajan (2011) in their research paper "CAMEL rating scanning of SBI Groups" which was published in the Journal of Banking Financial Services and Insurance, inspected the applicability of CAMEL and it's impact on overall performance of SBI Group. It helped bank to diagnose its financial health and examined an alarming note to take preventive steps for its sustainability.

Chaudhary and Singh (2012) in their study "Impact of reforms on the Asset Quality in the Indian Banks" which was published in International Journal of Multidisciplinary analyzed the retrospective impact of financial reforms on soundness on Indian banking through its impact on its asset quality. It mainly identified the key players as risk management, NPA levels, effective cost management and financial inclusion.

Alabede James (2012) in his analysis "The intervening effects of global financial condition on the determinants of Banks performance – Evidences from Nigeria" concluded that asset quality and market performance are significant determinants of Nigerian Banks performance and his study suggested to reduce non-performing assets and introducing the policy to encourage fair competition among the banks.

Objectives of the Study

The main objectives of this study are

1. To analyze the overall financial position and performance of State Bank of India using CAMEL model using parameters like Capital Adequacy, Asset Quality, Managerial Efficiency, Earnings Quality and Liquidity and
2. To provide findings based on results.

Research Methodology

This study is a detailed research study based on analytical research design. SBI which has dominant position in banking industry in India with largest market share and wealth is selected for study. CAMEL model is used to evaluate the performance of bank with the help of different criteria viz. Capital Adequacy, Asset Quality, Earning efficiency, Management Quality and Liquidity.

Data Collection and Analysis

Sampling: SBI Bank has been selected for the purpose of the study. The data for the period 2009-10 to 2016-17 (three years) has been collected for sample bank. Only secondary source of data collection has been used viz. annual report of the banks, Statistics published by RBI and Moneycontrol.com etc. Sixteen financial ratios have been used to assess the performance of the bank. Both descriptive and inferential statistics are used for data analysis and interpretation. In descriptive statistics, average, Standard deviation, coefficient of variation and compound annual growth rate. In inferential statistics one way ANOVA is used.

Hypotheses Testing

H1: There are no significant differences among variables of Capital Adequacy ratio.
H2: There are no significant differences among variables of Asset Quality ratio.
H3: There are no significant differences among variables of Management Efficiency ratio.
H4: There are no significant differences among variables of Earning Quality ratio.
H5: There are no significant differences among variables of Liquidity ratio.

Findings of the Study

1. Capital Adequacy: For analyzing the financial health of a banking system, capital adequacy is one of the prominent indicators. Banks generally focuses to conserve and protect stakeholder's confidence and prevent itself from the state of bankruptcy. It reflects bank's loss bearing capacity to its capital at future date. Capital base of financial institutions like banks facilitates customers in forming their risk perception about the bank. Capital Adequacy is very useful to conserve and to protect stakeholder's confidence and prevent the bank from bankruptcy.

1.1 Capital Adequacy Ratio (CAR): The level of losses arising from operational losses that a bank can take up is ensured by this ratio. If The CAR ratio shows a higher node, it indicates bank's strength as well as protection of investors' interests. According to RBI norms banks need to maintain 9% capital adequacy ratio. CAR= (Tier- I +Tier- II Capital)/Risk Weighted

Assets The heads under Tier-I capital includes shareholder's equity, perpetual non- cumulative preference shares, disclosed reserves and innovative capital instruments whereas Tier-II capital includes undisclosed reserves, revaluation reserves of fixed assets and long term holding of equity securities, general provisions/general loan loss reserves, hybrid debt capital instruments and subordinated debt.

SBI has maintained CAR ratio not less than 11.98% with an average of 12.85%, variation of 66.96% and consistency of 5.1% throughout the study period. There is Compound annual decline rate of 0.3% during the study period. It has maintained more than RBI norm indicating concern towards maintaining protection of investors' interests.

1.2 Return on Advances (ROA): This ratio represents outcome of the lending activities of the bank. This shows whether investors' money used for the lending is yielding any adequate return and it's safe. This ratio is relationship between net profits with total advances. The higher the ROA, the more the profit available to the investors and vice versa. State Bank of India does not earn more than 10% from its incidental to main business .During the study period; its average is less than 10%, fluctuation of 65% and stability of 7.37%. Its CAGR is neglected growth.

1.3 Return on Equity (ROE): It is earnings available to the equity shareholders who are residual owners of the bank. This ratio reflects the risk involved in a bank's investment. This will have greater impact on wealth maximization and market price of equity share. The higher the ROE, the higher the wealth maximization and vice versa, It is calculated by net profit-preference dividend by equity share capital, reserve and surplus and fictitious assets.

It is clear that it is earning on a normal average of 11.60% on equity shareholders funds with greater variation of 364% and consistency of 31.39%. There is Compound annual decline rate of 11.5% of the study period. It is setback for SBI that earnings available to equity shareholders are reducing gradually.

2. Asset Quality: The quality of assets is an important parameter to examine the degree of financial strength. The foremost objective to measure the assets quality is to ascertain the composition of non-performing assets (NPAs) as a percentage of the total assets. It is the most standard measure to judge the assets quality The following are the important ratios to measure the asset quality of banks; a. Net NPAs to Net Advances, Net NPAs to Total Assets and Change in net NPAs. A low score here indicates better performance.

2.1. Net NPAs to Net Advances: This ratio of State Bank of India is in the range of 1.63% to 3.81% with an average of 2.44%, variation of 86.87% and coefficient of variation of 35.67%. There is compound annual growth rate of 11.6% over the study period. It should undertake measures on war-footing to arrest growth of NPAs

2.2 Net NPAs to Total Assets: Not more than 2.47% of total assets are unfruitful assets. On an average 1.55% of total assets of SBI are in quality deterioration with changes of 52.30% and stability of 33.65% and compound growth rate of 10.6%.This depicts that there is greater need for the SBI to check NPAs addition and upgrade the existing NPAs to make quality of assets.

2.3 Changes in Net NPAs: There are greater changes in Net NPAs over the study period with standard deviation of 3447.33%, greater instability of 119.20% and compound annual decline rate of 15%. This speaks that there is a need to strengthen recovery mechanism and careful evaluation of credit applicants.

3. Management Efficiency

Management efficiency is another essential component of the CAMEL model that guarantee the growth and survival of a bank. Management efficiency means adherence with set norms, ability to plan and respond to changing environment, leadership and administrative capability of the bank. This ratio evaluates the efficiency and capability of the bank's management in applying the deposits (including receivables) available excluding other funds viz. equity capital, etc. into rich earning advances... The followings are three major ratios that is used to evaluate the management efficiency of banking business;

3.1 Total Advances to Total deposits: More than ¾ of deposits are used for lending purpose. On an average it shows 82.54% of deposits are lent with higher variation of 362.78% and greater stability of 4.36% during the study period. Decline rate (0.3%) is neglected percentage. This ratio discloses that SBI is more aggressive approach in making profitability.

3.2 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. This ratio indicates profit earned

per employee. The net profit per employee of SBI is in the range of 3.9 lakhs to 6.5 lakhs. Each employee contribution to net profit on an average is 5.1 lakhs with least variation and higher stability. Compound annual growth rate of this ratio is only 2% during the study period.

3.3 Business per Employee: This ratio reveals the efficiency of manpower of bank. In another word we can say that this ratio measures the productivity of employee's of a bank. The higher the ratio, the better the efficiency for bank. Business per employee is measured through the following equations; Business per employee = (Total Deposits + Total Advances)/Total Number of employees.Average productivity of SBI employee in the context of Business per employee is 10.52 crores with minimum of 6.36 crores and maximum of 16.24 crores, high fluctuation and the least stability over the study period. There is compound annual growth rate of 14.3%. This discloses that productivity of the employee is upward trend.

4. Earnings Quality:

Earning quality means the profit earnings ability and efficiency to maintain consistency in earnings. This criterion primarily determines banks profitability and its growth in future earnings. The following ratios explain the quality of income generation.

4.1 Burden to Total Assets

Ratio of burden to total assets is calculated by dividing (Operating expenses - Other income) by Total assets. It visualizes that it is the net reduction (or burden) to Net Interest Income that combines towards overall earnings, It is seen that ratio of burden to total assets of State Bank of India is decreased to 43% from 53% with greater fluctuation and instability during the study period. It indicates on an average 74% of total assets in terms of operating expenses are met from net interest income. 57% of total assets are contributing towards contractual obligations of investors. Compound annual decline rate is 2.8% which is a good symptom of increase in non-interest income/ other income.

4.2 Net Interest Margin to Total Assets: Net interest margin is the difference between interest earned and interest expended. The higher of this ratio indicates that the good earnings given by its assets. Average Net Interest Margin to Total Assets of State Bank of India is 2.81%. It is not more than 3.38% and not less than 2.36% during the study period. There is more stability and lower variation. There is more or less no growth in net interest margin (0.6%).

4.3 Return on Total Assets

This ratio measures a company's earnings before net profit against its total net assets. The ratio is considered to be an indicator of how effectively a company is using its assets to generate earnings after contractual obligations are paid. ROA measures how efficiently a company can manage its assets to produce profits during a period. On average, total assets of SBI contributes to the reward of shareholders to the extent of 71% of its assets. Its effectiveness in generating revenue is declining during the study period. There is fluctuation in managing assets by 20.07% and stability by 28.48%and lower variation. There is compound annual decline rate of 10.3% which causes impairment of assets.

5. Liquidity

Risk of liquidity can have an effect on the image of bank. Liquidity is a crucial aspect which reflects bank's ability to meet its financial obligations. An adequate liquidity position means a situation, where organization can obtain sufficient liquid funds, either by increasing liabilities or by converting its assets quickly into cash.

5.1 Liquid Asset to Total Deposits: This ratio measures the liquidity available to the depositors of a bank. It is calculated by dividing the liquid assets (Cash in hand + Balances with RBI) with total deposits. Total deposit is the sum of all demand deposits and long term fixed deposits. A high ratio indicates good security on client's deposits. The average liquidity position of State bank of India to meet its depositor's obligation as much as 6.95%. This ratio fluctuates considerably by 157.62% and stability by 22.68%. This shows there is a risk of liquidity, There is compound annual decline rate is 2.8% which squeezes the liquidity position.

5.2 Investment in Approved Government Securities to Total Investments

This ratio indicates the relationship between total funds invested in G-Sec to total investments. Approved securities include investments made in the state associated/owned bodies like electricity corporations, housing development corporations, Regional Rural Banks and corporation bond and other approved government securities. This ratio measures the risk involved in the investments. A higher ratio indicates low risk in the investments and in the favor of investors. State Bank of India has more than 75% investments in approved government securities. This high proportion of investment in approved securities speaks of conservative approach and low risk is followed. There is 4% decrease in compound annual growth rate which shatters liquidity.

5.3 Investments to Demand Deposits: This ratio reflects the ability of a bank to meet the demand from depositors during a year. Banks provides higher liquidity to depositors by investing funds in various forms. A high ratio indicates a higher liquidity for depositors. The average investment of State Bank of India is about 1/3 of total demand deposits with substantial variation of 338.42% and stability of 10.51%. It represents high proportion of liquidity available to meet depositors' obligation. There is growth by 3% at snail's pace.

"F" tests" fop one way ANOVA have been examined to find out the significant difference among the variables of Capital Adequacy, Asset Quality, Managerial Efficiency, Earnings Quality and Liquidity ratios. The p value of F test for capital adequacy ratios, Asset Quality ratios, Managerial Efficiency ratios, Earnings Quality ratios and Liquidity ratios are 0.005, 0.018, 0.000, 0.000 and 0.000 which are more0 than the critical value of 0.05 at 5% level of significance respectively. Hence, the null hypotheses (Ho1) are rejected which concludes that there are significant differences among variables of all ratios for the analysis of CAMEL rating.

Conclusion

CAMEL Model is important tool to evaluate the relative financial strength of a banking system in general and SBI in particular to suggest suitable remedies to improve the deficiencies. CAMEL model is a ratio-based model to appraise the performance of banks. In nutshell, present study concludes that there is alarming decrease in quality of assets due to increase in NPAs and aggressive approach in its investment pattern during the study period. Hence, it is suggested that growth of NPAs should be arrested and upgrade existing NPAs on war-footing measures, strengthen recovery mechanism, careful appraisal of borrowers' application, increase the liquidity position to withstand short-term insolvency. Despite there is increase in profit and business per employee, this is due to increase in other income but not interest income. Strategic financial planning should be adopted for NPAs reduction.

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Table 1: Capital Adequacy

Year	1.1-Capital Adequacy Ratio	1.2-Return on Advances	1.3-ROE
2017	13.11	7.88	6.31
2016	13.12	8.37	7.30
2015	12.00	8.95	10.62
2014	12.44	9.09	10.03

2013	12.92	9.46	15.43
2012	13.86	9.98	15.72
2011	11.98	8.64	12.62
2010	13.39	8.62	14.80
Mean	12.85	8.87	11.60
Standard Deviation	0.665	0.654	3.642
C.V.	0.051	0.073	0.313
CAGR	-0.003	-0.013	-0.115

Table 2: Asset Quality

Year	2.1-Net NPAs/ Net Advances.	2.2- Net NPAs/ Total Assets	2.3- Changes in Net NPAs
2017	3.71	2.15	4.426
2016	3.81	2.47	102.268
2015	2.12	1.35	-11.273
2014	2.57	1.74	41.625
2013	2.10	1.40	38.799
2012	1.82	1.22	28.120
2011	1.63	1.03	13.585
2010	1.72	1.07	13.799
Mean	2.44	1.55	28.92
Standard Deviation	0.868	0.523	34.473
C.V.	0.356	0.336	1.192
CAGR	0.116	0.106	-0.150

Table 3: Management Efficiency

Year	3.1-Advances /Deposits	3.2- Profit per employee (Rs. In Millions)	3.3- Business per employee (Rs. In Millions)
2017	76.835	0.51	162.40
2016	84.572	0.47	141.10
2015	82.447	0.60	123.40
2014	86.763	0.49	106.38
2013	86.936	0.65	94.39
2012	83.130	0.53	79.84
2011	81.025	0.39	70.47
2010	78.585	0.45	63.60
Mean	82.54	0.51	105.20
Standard Deviation	3.628	0.084	35.031
C.V.	0.044	0.164	0.333
CAGR	-0.003	0.020	0.143

Table 4: Earnings Quality			
Year	**4.1- Burden to Total Assets**	**4.2- NIM/Total Assets**	**4.3- Return on Total Assets**
2017	0.435	2.443	0.410
2016	0.633	2.596	0.460
2015	0.800	2.865	0.680
2014	1.023	2.934	0.650
2013	0.913	3.055	0.970
2012	0.916	3.383	0.880
2011	0.632	2.857	0.710
2010	0.530	2.346	0.880
Mean	0.735	2.810	0.705
Standard Deviation	0.209	0.339	0.201
C.V.	0.284	0.121	0.285
CAGR	-0.028	0.006	-0.103

Table 5: Liquidity			
Year	**5.1- Cash/Deposit**	**5.2- Ratio of investments in approved securities to total investments**	**5.3- Investment/Deposit**
2017	6.26	75.10	37.46
2016	7.49	79.83	33.26
2015	7.35	78.39	30.55
2014	6.09	77.33	28.60
2013	5.47	76.74	29.17
2012	5.18	81.95	29.91
2011	10.11	78.20	31.65
2010	7.62	77.00	36.78
Mean	6.95	78.07	32.17
Standard Deviation	1.576	2.089	3.384
C.V.	0.226	0.026	0.105
CAGR	-0.028	-0.004	0.003

ANOVA: Single Factor of Liquidity Ratios						
Liquidity	**Count**	**Sum**	**Average**	**Variance**		
Cash/Deposit	8	55.576	6.947	2.484		
Ratio of investments in approved securities to total investments	8	624.535	78.067	4.367		
Investment/Deposit	8	257.397	32.175	11.453		
Source of Variation	SS	df	MS	F	P-value	F crit.
Between Groups	20801.52	2	10400.7	1704.554	0.00	3.4
Within Groups	128.137	21	6.102			
Total	20929.66	23				

ANOVA: Single Factor of Earnings Quality Ratios						
Earnings Quality	Count	Sum	Average	Variance		
Burden to Total Assets	8	5.881	0.735	0.043		
NIM/Total Assets	8	22.480	2.810	0.115		
Operating Profit to Total Assets	8	16.635	2.079	0.042		
Return on Total Assets	8	5.640	0.705	0.040		
Source of Variation	SS	df	MS	F	P-value	F crit.
Between Groups	25.934	3	8.645	143.810	0.000	2.947
Within Groups	1.683	28	0.060			
Total	27.617	31				

ANOVA: Single Factor of Management Quality Ratios						
Management Quality	Count	Sum	Average	Variance		
Adv./Deposits	8	660.2	82.537	13.16		
Profit per employee (in Rupees Million)	8	4.075	0.509	0.007		
Business per employee (in Rupees Million)	8	841.5	105.19	1227.		
Source of Variation	SS	df	MS	F	P-value	F crit.
Between Groups	48536.78	2	24268.	58.69	0.00	3.4
Within Groups	8682.437	21	413.44			
Total	57219.21	23				

ANOVA: Single Factor of Asset Quality Ratios						
Asset Quality	**Count**	**Sum**	**Average**	**Variance**		
Net NPA/ Net Adv.	8	19.480	2.435	0.755		
Net NPA/Total Assets	8	12.432	1.554	0.274		
Changes in Net NPA	8	231.352	28.919	1188.409		
Source of Variation	SS	df	MS	F	P-value	F crit.
Between Groups	3869.393	2	1934.696	4.880	0.018	3.467
Within Groups	8326.06	21	396.479			
Total	12195.45	23				

ANOVA: Single Factor of Capital Adequacy Ratios						
Capital Adequacy Ratio	**Count**	**Sum**	**Average**	**Variance**		
Capital Adequacy Ratio	8	102.820	12.853	0.444		
Return on Advances	8	70.995	8.874	0.428		
ROE	8	92.824	11.603	13.269		
Source of Variation	SS	df	MS	F	P-value	F crit.
Between Groups	66.221	2.000	33.110	7.024	0.005	3.467
Within Groups	98.985	21.000	4.714			
Total	165.206	23.000				