International Journal of Trade and Commerce-IIARTC
January-June 2012, Volume 1, No. 1, pp. 23-33
ISSN-2277-5811

A Camel Model Analysis of Nationalized Banks in India

K.V.N. Prasad[a]*, G. Ravinder[b]

[a] *ITM Business School, Warangal, Andhra Pradesh, email-id: kvnprasad@itm.edu*

[b] *ITM Business School, Warangal, Andhra Pradesh, email-id: ravinderg@itm.edu*

Abstract

Banking sector is one of the fastest growing sectors in India. Today's banking sector becoming more complex. Evaluating Indian banking sector is not an easy task. There are so many factors, which need to be taken care while differentiating good banks from bad ones. To evaluate the performance of banking sector we have chosen the CAMEL model which measures the performance of banks from each of the important parameter like Capital Adequacy, Assets Quality, Management Efficiency, Earning Quality and Liquidity. After deciding the model we have chosen twenty nationalized banks. According to the importance of study each parameter is given equal weights. Results shown that on an average Andhra bank was at the top most position followed by bank of Baroda and Punjab & Sindh Bank. It is also observed that Central Bank of India was at the bottom most position.

Keywords: *Nationalized Banks, Performance Evaluation, CAMEL Model and Ranking Method.*

ARTICLE INFO

RECEIVED ON: 25/02/2012
ACCEPTED ON: 30/05/2012

Reference to this paper should be made as follows :
Prasad, K.V.N. and Ravinder, G.(2012) "A Camel Model Analysis of Nationalized Banks In India" Int. J. of Trade and Commerce-IIARTC, Vol. 1, No. 1, pp.23–33

**Corresponding Author*

1. INTRODUCTION

During the 20th century in most of the nations, domestic banking was generally subjected to heavy regulations and financial repression. The growth and financial stability of the country depends on the financial soundness of its banking sector.

The Indian banking sector has been working in a more open and globalize environment for two decades since liberalization. The liberalization process of Indian Economy has made the entry of new private sector banks possible and allowed the foreign sector banks to increase their branches in the banking sector. Besides, following India's commitment to the WTO, foreign banks have been permitted to open more branches with effect from 1998-99. With the increased competition and the emphatic on profitability, the public sector banks are now moving towards on economic-oriented model departing from the social approach followed for decades. Thus, the restructuring of public sector banks and the emergence of new banks in the private sector as well as the increased competition from foreign banks, have improved the professionalism in the banking sector. The increased presence of the private and foreign banks during the past decade has made the market structure of the banking sector in terms of competitive pricing of services, narrow spreads, and improving the quality of the services. The public sector banks, which had dominated the banking sector for decades, are now feeling the heat of the competition from private and foreign sector banks.

In the above back drop the present study is necessitated to examine the performance of nationalized banks during the period 2006-10. The study is based on twenty ratios of the variables relating to capital adequacy, assets quality, management efficiency, earnings quality and liquidity.

2. REVIEW OF LITERATURE

In the process of continuous evaluation of the bank's financial performance both in public sector and private sector, the academicians, scholars and administrators have made several studies on the CAMEL model but in different perspectives and in different periods.

Cole *et al.* (**1995**) conducted a study on "A CAMEL Rating's Shelf Life" and their findings suggest that, if a bank has not been examined for more than two quarters, off-site monitoring systems usually provide a more accurate indication of survivability than its CAMEL rating.

Godlewski (**2003**) tested the validity of the CAMEL rating typology for bank's default modelisation in emerging markets. He focused explicitly on using a logical model applied to a database of defaulted banks in emerging markets.

Said and **Saucier** (**2003**) examined the liquidity, solvency and efficiency of Japanese Banks using CAMEL rating methodology, for a representative sample of Japanese banks for the period 1993-1999, they evaluated capital adequacy, assets and management quality, earnings ability and liquidity position.

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

Derviz *et al.* (**2008**) investigated the determinants of the movements in the long term Standard & Poor's and CAMEL bank ratings in the Czech Republic during the period when the three biggest

banks, representing approximately 60% of the Czech banking sector's total assets, were privatized (i.e., the time span 1998-2001).

Bhayani (**2006**) analyzed the performance of new private sector banks through the help of the CAMEL model. Four leading private sector banks – Industrial Credit & Investment Corporation of India, Housing Development Finance Corporation, Unit Trust of India and Industrial Development Bank of India - had been taken as a sample.

Gupta and **Kaur** (**2008**) conducted the study with the main objective to assess the performance of Indian Private Sector Banks on the basis of Camel Model and gave rating to top five and bottom five banks. They ranked 20 old and 10 new private sector banks on the basis of CAMEL model. They considered the financial data for the period of five years i.e., from 2003-07.

3. METHODOLOGY

CAMEL is basically ratio based model for evaluating the performance of banks. It is a management tool that measures capital adequacy, assets quality, and efficiency of management, earnings' quality and liquidity of financial institutions. The period for evaluating performance through CAMEL in this study ranges from 2005-06 to 2009-10, i.e., for 5 years. The absolute data for twenty nationalized banks on capital adequacy, asset quality, management efficiency, earning quality and liquidity ratios is collected from various sources such as annual reports of the banks, Prowess, Ace Analyzer, Analyst journal and average of each ratio calculated for the period 2006-10. All the banks were first individually ranked based on the sub-parameters of each parameter. The sum of these ranks was then taken to arrive at the group average of individual banks for each parameter. Finally the composite rankings for the banks were arrived at after computing the average of these group averages. Banks were ranked in the ascending/descending order based on the individual sub-parameter.

4. DATA & ANALYSIS

CAMEL is basically ratio based model for evaluating the performance of banks. It is a management tool that measures capital adequacy, assets quality, and efficiency of management, quality of earnings and liquidity of financial institutions.

5. CAPITAL ADEQUACY

It is important for a bank to maintain depositors' confidence and preventing the bank from going bankrupt. It reflects the overall financial condition of banks and also the ability of management to meet the need of additional capital. The following ratios measure capital adequacy:

- Capital Adequacy Ratio (CAR): The capital adequacy ratio is developed to ensure that banks can absorb a reasonable level of losses occurred due to operational losses and determine the capacity of the bank in meeting the losses. As per the latest RBI norms, the banks should have a CAR of 9 per cent.
- Debt-Equity Ratio (D/E): This ratio indicates the degree of leverage of a bank. It indicates how much of the bank business is financed through debt and how much through equity.
- Advance to Assets Ratio (Adv/Ast): This is the ratio indicates a bank's aggressiveness in lending which ultimately results in better profitability.

- Government Securities to Total Investments (G-sec/Inv): It is an important indicator showing the risk-taking ability of the bank. It is a bank's strategy to have high profits, high risk or low profits, low risk.

The various ratios measuring capital adequacy of sample banks are depicted in Table I.

Table 1 : *Camel Ratings (2006-10) : Capital Adequacy.*

Bank	CAR(%)		D/E(times)		Adv/Ast(%)		G-sec/Inv		Group	
	Avg	Rank	Avg	Rank	Avg	Rank	Avg	Rank	Avg	Rank
Allahabad Bank	12.93	7	0.68	3	58.28	14	76.84	19	10.75	10
Andhra Bank	12.82	8	0.73	5	59.39	8	87.39	2	5.75	2
Bank of Baroda	13.35	3	0.81	7	58.49	13	77.53	17	10	8
Bank of India	12.29	13	1.67	17	59.94	5	79.99	14	12.25	13
Bank of Maharashtra	11.68	18	1.12	13	57	15	85.45	7	13.25	16
Canara Bank	13.1	5	0.91	9	60.39	3	85.88	5	5.5	1
Central Bank of India	11.44	19	0.93	10	55.77	18	83.73	8	13.75	20
Corporation Bank	13.56	1	0.93	10	56.93	16	78.31	16	10.75	10
Dena Bank	11.86	17	0.69	4	59.74	6	82.29	12	9.75	7
IDBI Bank	12.67	9	6.81	20	60.11	4	72.4	20	13.25	16
Indian bank	13.38	2	0.42	1	55.39	19	83.16	9	7.75	4
Indian Overseas Bank	13.15	4	1.17	14	58.74	12	87.22	3	8.25	5
Oriental Bank of Commerce	12.52	11	0.48	2	59.24	9	85.83	6	7	3
Punjab & Sindh Bank	12.18	14	2.03	19	58.79	11	86.52	4	12	12
Punjab National Bank	13.08	6	0.95	12	58.83	10	83.05	10	9.5	6
Syndicate Bank	12.01	16	1.3	15	60.76	1	88.62	1	8.25	5
UCO Bank	11.38	20	1.72	18	60.47	2	82.21	13	13.25	16
Union Bank of India	12.5	12	1.41	16	59.7	7	79.62	15	12.5	14
United Bank of India	12.62	10	0.77	6	52.04	20	77.25	18	13.5	19
Vijaya Bank	12.03	15	0.87	8	56.18	17	82.92	11	12.75	15
Source: Secondary data available in Ace analyzer and Prowess data base compiled by Ms-Excel										

It is clear that all banks are maintained higher CAR than the prescribed level. It is found that Corporation bank secured the top position with highest average CAR of 13.56 followed by Indian Bank (13.38), Bank of Baroda (13.35). UCO bank was at the bottom most position with a least average CAR of 11.38. In terms of Debt equity ratio Indian bank is at the top position with least average of 0.42 followed by Oriental Bank of Commerce (0.48) and Allahabad Bank (0.68). In case

of Advances to assets, Syndicate Bank was at the first position with highest average of 60.76 followed by UCO Bank (60.47) and Canara Bank (60.39). United Bank of India was at the bottom most position with least average of 52.04. Its again Syndicate Bank was at the top most position in Government securities to Investments with highest average of 88.62, followed by Andhra bank and Indian Overseas Bank. IDBI Bank was at the last position with the least average of 72.4.

On the basis of group averages of four sub-parameters of capital adequacy Canara Bank was at the top position with group average of 5.5, followed by Andhra Bank (5.75) and Oriental Bank of Commerce (7). Central Bank of India stood at the last position due to its poor performance in CAR and Adv/Ast.

6. ASSETS QUALITY

The quality of assets is an important parameter to gauge the strength of bank. The prime motto behind measuring the assets quality is to ascertain the component of non-performing assets as a percentage of the total assets. The ratios necessary to assess the assets quality are:

- Net NPAs to Total Assets (NNPAs/TA): This ratio discloses the efficiency of bank in assessing the credit risk and, to an extent, recovering the debts.
- Net NPAs to Net Advances (NNPAs/NA): It is the most standard measure of assets quality measuring the net non-performing assets as a percentage to net advances.
- Total Investments to Total Assets (TI/TA): It indicates the extent of deployment of assets in investment as against advances.
- Percentage Change in NPAs: This measure tracks the movement in Net NPAs over previous year. The higher the reduction in the Net NPA level, the better it for the bank

Table-2: *Represents Asset Quality position of sample banks during 2006-10*

Table II : Camel Ratings (2006-10) : Assets Quality										
Bank	**NNPAs/TA (%)**		**NNPAs/NA (%)**		**TI/TA (%)**		**Ch.in.NPAs (%)**		**Group**	
	Avg	Rank	Avg	Rank	Avg	Rank	Avg	Rank	Avg	Rank
Allahabad Bank	0.56	10	0.734	9	30.17	16	15.5	9	11	12
Andhra Bank	0.12	1	0.122	1	26.49	4	15.8	10	4	1
Bank of Baroda	0.35	5	0.466	6	25.05	2	0.87	3	4	1
Bank of India	0.61	11	0.84	12	24.96	1	31.6	15	9.75	9
Bank of Maharashtra	0.84	15	1.208	17	30.43	18	28.9	14	16	20
Canara Bank	0.7	13	0.934	13	27.08	7	13.5	8	10.25	11
Central Bank of India	1	18	1.382	19	30.15	15	-4.05	2	13.5	14
Corporation Bank	0.23	4	0.366	4	27.67	9	1.53	4	5.25	3
Dena Bank	0.99	17	1.1	16	27.24	8	6.31	7	12	13
IDBI Bank	22.9	20	0.994	14	27.93	11	16.1	11	14	16
Indian bank	0.22	3	0.324	2	32.69	19	-4.93	1	6.25	4
Indian Overseas Bank	0.73	14	1.084	15	28.72	13	60.2	19	15.25	19

Oriental Bank of Commerce	0.46	8	0.658	7	26.65	5	35.5	16	9	6
Punjab & Sindh Bank	0.21	2	0.35	3	29.83	14	17.6	12	7.75	5
Punjab National Bank	0.35	5	0.414	5	27.05	6	106	20	9	6
Syndicate Bank	0.61	11	0.822	11	26.04	3	22.3	13	9.5	8
UCO Bank	1.21	19	1.554	20	28.6	12	5.37	6	14.25	17
Union Bank of India	0.35	5	0.692	8	27.71	10	49	17	10	10
United Bank of India	0.97	16	1.274	18	34.83	20	4.24	5	14.75	18
Vijaya Bank	0.53	9	0.796	10	30.33	17	51.1	18	13.5	14
Source: Secondary data available in Ace analyzer and Prowess data base compiled by Ms-Excel										

Andhra Bank was at the top position with an average NNPAs/TA of 0.12, followed by Punjab & Sindh Bank (0.21) Indian Bank (0.22). IDBI was at the last position with an average of 22.9. In case of NNPAs/NA it's again Andhra Bank was at the top position with a least average of 0.12 followed by Indian Bank (0.324), Punjab & Sindh Bank (0.35). In terms of TI/TA, Bank of India was at the first position with an average of 24.96 followed by BOB (25.05), Syndicate bank (26.04). United Bank of India was at the last position with highest average of 34.83. Indian bank was at the first position in percentage change in NPAs with an average of -4.93, followed by Central Bank of India, Bank of Baroda while Bank of Maharashtra stood at last position.

On the basis of group averages of sub-parameters of assets quality, Andhra Bank and Bank of Baroda was at the top position with group average 4 , followed by Corporation Bank (5.25), Indian Bank (6.25). Its again Bank of Maharashtra positioned at last.

7. MANAGEMENT EFFICIENCY

Management efficiency is another important element of the CAMEL Model. The ratio in this segment involves subjective analysis to measure the efficiency and effectiveness of management. The ratios used to evaluate management efficiency are described as:

- Total Advances to Total Deposits (TA/TD): This ratio measures the efficiency and ability of the bank's management in converting the deposits available with the bank excluding other funds like equity capital, etc. into high earning advances.
- Profit per Employee (PPE): This shows the surplus earned per employee. It is known by dividing the profit after tax earned by the bank by the total number of employees.
- Business per Employee (BPE): Business per employee shows the productivity of human force of bank. It is used as a tool to measure the efficiency of employees of a bank in generating business for the bank.
- Return on Net worth (RONW): It is a measure of the profitability of a bank. Here, PAT is expressed as a percentage of Average Net Worth.

Table III exhibits the various ratios representing the level of Management Efficiency of sample banks.

IDBI was at the top most position with an average TA/TD of 125.1 followed by Bank of India (71.24), Punjab & Sindh Bank (70.42). In terms of profit per employee United Bank of India

secured the top position with 0.33 followed by IDBI (0.088), Corporation Bank (0.068). At the front of Business per employee, IDBI was at the first place with an average 18.72, followed by Oriental Bank of Commerce (9.42), Corporation Bank (8.642). Indian Bank was at the bottom most position. Indian Overseas Bank was at the top position in RONW with the highest average 22.96 followed by Union Bank of India (20.84), Punjab & Sindh Bank (20.53). IDBI excels well in TA/TD, PPE and BPE but was not good at RONW.

Table-III: *Camel Ratings (2006-10): Management Efficiency*

Bank	TA/TD (%)		PPE(crores)		BPE(crores)		RONW (%)		Group	
	Avg	Rank	Avg	Rank	Avg	Rank	Avg	Rank	Avg	Rank
Allahabad Bank	66.65	15	0.046	9	5.894	13	20.31	5	10.5	12
Andhra Bank	68.87	9	0.048	7	6.514	8	19.67	7	7.75	6
Bank of Baroda	68.49	11	0.046	9	7.112	4	14.89	14	9.5	10
Bank of India	71.24	2	0.042	13	6.75	6	19.58	8	7.25	4
Bank of Maharashtra	65.1	16	0.02	18	5.25	17	13.38	15	16.5	19
Canara Bank	69.74	6	0.044	11	6.726	7	18.76	9	8.25	7
Central Bank of India	62.67	19	0.018	20	4.434	19	9.828	18	19	20
Corporation Bank	68.82	10	0.068	3	8.642	3	14.93	13	7.25	4
Dena Bank	67.52	14	0.0375	15	6.395	9	15.28	11	12.25	14
IDBI Bank	125.1	1	0.088	2	18.72	1	1.77	20	6	3
Indian bank	64.37	17	0.05	5	4.084	20	18.28	10	13	15
Indian Overseas Bank	70.15	4	0.04	14	5.612	15	22.96	1	8.5	8
Oriental Bank of Commerce	68.39	12	0.06	4	9.42	2	10.47	17	8.75	9
Punjab & Sindh Bank	70.42	3	0.05	5	6.953	5	20.53	3	4	1
Punjab National Bank	69.74	6	0.044	11	5.412	16	20.23	6	9.75	11
Syndicate Bank	69.33	8	0.03	16	5.844	14	20.5	4	10.5	12
UCO Bank	68.25	13	0.02	18	6.128	11	15.06	12	13.5	16
Union Bank of India	70.42	4	0.048	7	6.382	10	20.84	2	5.75	2
United Bank of India	59.22	20	0.33	1	4.732	18	8.73	19	14.5	17
Vijaya Bank	64.09	18	0.026	17	6.058	12	11.78	16	15.75	18
Source: Secondary data available in Ace analyzer and Prowess data base compiled by Ms-Excel										

On the basis of group averages of sub-parameters, Punjab & Sindh Bank was at the top most position with group average 4, followed by Union Bank of India(5.75), IDBI (6). Central Bank of

India positioned at last due to its poor performance in all sub parameters of management efficiency.

8. EARNING QUALITY

The quality of earnings is a very important criterion that determines the ability of a bank to earn consistently. It basically determines the profitability of bank and explains its sustainability and growth in earnings in future. The following ratios explain the quality of income generation.

- Operating Profit to Average Working Funds (OP/AWF): This ratio indicates how much a bank can earn profit from its operations for every rupee spent in the form of working fund.
- Percentage Growth in Net Profit (PAT Growth): It is the percentage change in net profit over the previous year.
- Net Profit to Average Assets (PAT/AA): This ratio measures return on assets employed or the efficiency in utilization of assets.

Table IV presents the earning quality positions of sample banks in terms of operating profit by average working funds, percentage growth in net profit, and net profit to average assets.

Table -IV: *Camel Ratings (2006-10): Earnings Quality*

Bank	OP/AWF		PAT Growth (%)		PAT/AA (%)		Group	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
Allahabad Bank	2.11	7	20.03	15	1.042	5	9	10
Andhra Bank	2.23	5	17.46	17	1.062	4	8.67	8
Bank of Baroda	2.01	10	51.71	3	0.876	11	8	6
Bank of India	2.08	8	49.6	4	0.914	10	7.33	5
Bank of Maharashtra	1.44	17	141.5	1	0.516	15	11	13
Canara Bank	2.03	9	24.48	13	0.956	9	10.3	12
Central Bank of India	1.4	18	20.62	14	0.432	20	17.3	20
Corporation Bank	2.48	2	25.16	12	1.002	7	7	4
Dena Bank	1.92	12	58.67	2	0.74	12	8.67	8
IDBI Bank	1.1	20	34.76	8	0.51	17	15	15
Indian bank	2.64	1	43.55	7	1.214	2	3.33	1
Indian Overseas Bank	2.28	4	5.112	20	1.02	6	10	11
Oriental Bank of Commerce	1.8	13	16.85	18	0.696	14	15	15
Punjab & Sindh Bank	2.01	10	49	5	1.27	1	5.33	2
Punjab National Bank	2.37	3	28.82	10	1.132	3	5.33	2
Syndicate Bank	1.6	15	15.67	19	0.726	13	15.7	19
UCO Bank	1.37	19	30.21	9	0.48	18	15.3	17
Union Bank of India	2.21	6	26.22	11	0.974	8	8.33	7
United Bank of India	1.5	16	45.61	6	0.462	19	13.7	14
Vijaya Bank	1.77	14	19.39	16	0.514	16	15.3	17

Source: Secondary data available in Ace analyzer and Prowess data base compiled by Ms-Excel

Indian Bank rated top in case of OP/AWF with an average of 2.64 followed by Corporation Bank (2.48), Punjab National Bank (2.37). IDBI was at the bottom most position with least average of

1.1. In case of PAT growth Bank of Maharastra was at the first position with an average of 141.5, followed by Dena Bank, Bank of Baroda. Indian Overseas Bank was at the last place. In case of PAT/AA, Punjab & Sindh Bank stood at the top place with an average of 1.27, followed by Indian Bank (1.214), Punjab National Bank. Central Bank of India was at bottom most position.
On the basis of group averages, Indian Bank was at the top position with group average (3.33) followed by Punjab National Bank & Punjab & Sindh Bank (5.33). Central Bank of India failed in all sub-parameters and stood at last place.

9. LIQUIDITY

Risk of liquidity is curse to the image of bank. Bank has to take a proper care to hedge the liquidity risk; at the same time ensuring good percentage of funds are invested in high return generating securities, so that it is in a position to generate profit with provision liquidity to the depositors. The following ratios are used to measure the liquidity:

- Liquid Assets to Demand Deposits (LA/DD): This ratio measures the ability of bank to meet the demand from depositors in a particular year. To offer higher liquidity for them, bank has to invest these funds in highly liquid form.
- Liquid Assets to Total Deposits (LA/TD): This ratio measures the liquidity available to the total deposits of the bank.
- Liquid Assets to Total Assets (LA/TA): It measures the overall liquidity position of the bank. The liquid asset includes cash in hand, balance with institutions and money at call and short notice. The total assets include the revaluation of all the assets.
- G-Sec to Total Assets (G-Sec/TA): It measures the risk involved in the assets. This ratio measures the Government securities as proportionate to total assets.
- Approved Securities to Total Assets (AS/TA): This is arrived by dividing the total amount invested in Approved securities by Total Assets.

Table V presents liquidity position of sample banks.

Table-V: *Camel Ratings (2006-10) : Liquidity*

Bank	LA/DD (%)		LA/TD (%)		LA/TA (%)		G-Sec/TA (%)		AS/TA (%)		Group	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
Allahabad Bank	119.51	17	9.802	20	8.566	19	23.2	10	0.5	4	14	18
Andhra Bank	152.33	4	13.502	6	11.618	6	23.02	12	0.22	15	8.6	7
Bank of Baroda	196.35	1	15.582	3	13.3	1	19.34	20	0.68	1	5.2	1
Bank of India	192.11	2	14.27	4	12.002	3	19.88	19	0.43	6	6.8	2
Bank of Maharashtra	105.69	19	11.402	16	9.99	14	26.1	3	0.21	16	13.6	17
Canara Bank	136.07	9	11.33	18	9.804	16	23.24	9	0.31	11	12.6	15
Central Bank of India	133.11	10	12.246	12	10.884	11	25.18	5	0.56	3	8.2	4
Corporation Bank	97.552	20	15.994	1	13.25	2	21.55	17	0.17	17	11.4	12
Dena Bank	136.52	8	12.635	10	11.175	9	22.43	15	0.28	12	10.8	11
IDBI Bank	128.52	13	15.914	2	7.99	20	20.35	18	0.01	20	14.6	19

Indian bank	150.71	5	11.492	15	9.892	15	27.14	1	0.67	2	7.6	3
Indian Overseas Bank	126.03	15	11.968	14	10.004	12	25.02	7	0.26	14	12.4	14
Oriental Bank of Commerce	145.42	6	13.226	8	11.462	7	22.84	13	0.27	13	9.4	9
Punjab & Sindh Bank	171.63	3	12	13	10	13	25.79	4	0.37	8	8.2	4
Punjab National Bank	127.06	14	13.99	5	11.768	4	22.44	14	0.46	5	8.4	6
Syndicate Bank	131.33	12	12.91	9	11.332	8	23.09	11	0.15	18	11.6	13
UCO Bank	131.48	11	9.846	19	8.73	18	23.47	8	0.4	7	12.6	15
Union Bank of India	116.52	18	11.332	17	9.618	17	22.04	16	0.33	10	15.6	20
United Bank of India	120.4	16	12.432	11	10.916	10	27.03	2	0.34	9	9.6	10
Vijaya Bank	145.35	7	13.322	7	11.666	5	25.18	5	0.11	19	8.6	7
source: secondary data available in Ace analyzer and Prowess data base compiled by Ms-Excel												

Bank of Baroda was at the first place in LA/DD with highest average of 196.35, followed by bank of India (192.11), Punjab & Sindh Bank (171.63). Corporation Bank availed 20th position. In case of LA/TD, corporation bank got first position with highest average of 15.994, followed by IDBI (15.914), Bank of Baroda (15.582). Allahabad Bank was at the bottom most position with least average 9.082. In contest of LA/TA, BOB was at top with the average 13.3 followed by Corporation Bank (13.25), and Bank of India (12.002). IDBI was at the last position. Indian bank was at the top position in G-Sec/TA with an average 27.142, followed by United Bank (27.03), Bank of Maharashtra (26.1). Bank of Baroda was at the bottom most position with least average 19.34. In terms of AS/TA, Bank of Baroda (0.68) was at the top most position followed by Indian Bank (0.672), Central bank of India (0.558).

On the basis of group averages of the sub- parameters, BOB stood at the top position with group average5.2 followed by Bank of India (6.8), Indian Bank(7.6) . Union Bank of India placed at last.

10. OVERALL RANKING

As stated in initial part of this paper, CAMEL model is used to rating the banks according to their performance**.**

Table-VI: *Composite ranking: Overall Performance*

	C	A	M	E	L	AVG	RANK
Allahabad Bank	10.75	11	10.5	9	14	11.05	13
Andhra Bank	5.75	4	7.75	8.67	8.6	6.954	1
Bank of Baroda	10	4	9.5	8	5.2	7.34	2
Bank of India	12.25	9.75	7.25	7.33	6.8	8.676	7
Bank of Maharashtra	13.25	16	16.5	11	13.6	14.07	19
Canara Bank	5.5	10.25	8.25	10.3	12.6	9.38	8
Central Bank of India	13.75	13.5	19	17.3	8.2	14.35	20
Corporation Bank	10.75	5.25	7.25	7	11.4	8.33	5
Dena Bank	9.75	12	12.25	8.67	10.8	10.694	11

IDBI Bank	13.25	14	6	15	14.6	12.57	15
Indian bank	7.75	6.25	13	3.33	7.6	7.586	4
Indian Overseas Bank	8.25	15.25	8.5	10	12.4	10.88	12
Oriental Bank of Commerce	7	9	8.75	15	9.4	9.83	9
Punjab & Sindh Bank	12	7.75	4	5.33	8.2	7.456	3
Punjab National Bank	9.5	9	9.75	5.33	8.4	8.396	6
Syndicate Bank	8.25	9.5	10.5	15.7	11.6	11.11	14
UCO Bank	13.25	14.25	13.5	15.3	12.6	13.78	18
Union Bank of India	12.5	10	5.75	8.33	15.6	10.436	10
United Bank of India	13.5	14.75	14.5	13.7	9.6	13.21	17
Vijaya Bank	12.75	13.5	15.75	15.3	8.6	13.18	16

It is clear from table VI that Andhra bank is ranked at top position with composite average 6.954, followed by Bank of Baroda (7.34), Punjab and Sindh Bank (7.456), Indian Bank (7.586), Corporation Bank (8.33). Central bank of India was at the bottom most position.

11. CONCLUSION

Economic development of any country is mainly influenced by the growth of the banking industry in that country. The current study has been conducted to examine the economic sustainability of a sample of thirty nine banks in India using CAMEL model during the period 2006-10. The study revealed that

- Canara Bank stood at top position in terms of capital adequacy.
- In front of asset quality, Andhra Bank& Bank of Baroda was at top most position.
- In context of management efficiency, Punjab & Sindh bank positioned at first.
- In terms of earnings quality Indian Bank sustained the top position.
- Bank of Baroda rated top in case of liquidity position.
- Overall performance table shows that, Andhra Bank is ranked first followed by Bank of Baroda, Punjab & Sindh Bank, Indian bank , Corporation Bank
- In bottom five, Central Bank of India was on the last position, following the other banks i.e. Bank of Maharashtra, UCO Bank, United Bank of India, and Vijaya Bank.

REFERENCES

[1]. Bhayani, S. (2006). Performance of the New Indian Private Sector Banks: A Comparative Study. Journal of Management Research, Vol. 5, No.11, pp. 53-70.

[2]. Cole, Rebel A. and Gunther, Jeffery, (1995). A CAMEL Rating's Shelf Life. Available at SSRN: http://ssrn.com/abstract=1293504

[3]. Derviz, A., & Podpiera, J. (2008). Predicting Bank CAMEL and S&P Ratings: The Case of the Czech Republic. Emerging Markets, Finance & Trade, 44(1), 117. Retrieved April 13, 2010, from ABI/INFORM Global. (Document ID: 1454963901).

[4]. Godlewski, C. (2003). Bank's Default Modelisation: An Application to Banks from Emerging Market Economies. Journal of Social Science Research Network, Vol.4, No.3, pp. 150-155.

[5]. Gupta, R. (2008). A CAMEL Model Analysis of Private Sector Banks in India. Journal of Gyan Management, Vol.2, No.1, pp. 3-8.

[6]. Prasuna D G (2003).Performance Snapshot 2003-04. Chartered Financial Analyst, Vol. 10, No.11, pp.6-13.

[7]. Said, M (2003). Liquidity, solvency, and efficiency: An empirical analysis of the Japanese banks' distress. Journal of Oxford, Vol. 5, No.3, pp. 354-358.