PERFORMANCE ANALYSIS OF INDIAN BANKING SECTORUSING CAMEL APPROACH

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Abstract: Banking sector is one of the fast growing sector in India and it plays a vital role in present economic system also.So, investors want to evaluate the performance of Banking sector to know the risk –return factors as well as factors affecting the performance of the banks. To evaluate the performance of banking sector, in the present study CAMEL model is used. CAMEL model measures the performance of banks from each of the important parameter like Capital Adequacy, Assets Quality, Management Efficiency, Earning Quality and Liquidity. Taking return on assets as the dependent variable, regression analysis has been applied to find out the most dominant factors (out of the 17 factors) that affects the financial performance of the banks.

Keywords: Asset quality, capital adequacy, earnings capacity, liquidity, management capability.

JEL Classification: Codes: G34, G32.

1. INTRODUCTION

The Indian banking sector is the backbone of the Indian economy. The two watershed events in the Indian banking industry are the nationalization of banks in the year 1969 and the initiation of economic reforms in the year1991. Since 1991, the size of the Indian economy has increased by 15 times in terms of GDP at market prices, whereas the gross domestic savings have increased by almost 17 times and the household financial savings have expanded by 16 times during the same period. The banking structure has played a crucial role in the mobilization of savings and promotion of economic development. As the real economy is dynamic, it is imperative that the banking system is adaptive and competitive enough to cope with multiple demands and objectives made on it by various constituents of the economy. From the point of view of financial inclusion also, there is a need to make available the

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financial services to the excluded segments of the society. Based on this, to evaluate the performance of Indian Banking sector CAMEL model is used. The CAMEL approach mainly considered for the purpose of to know the performance of the different public sector and private sector banks by the different tools like capital adequacy, asset quality, management capability, earnings capacity, liquidity to analyze the financial health of the selected public and private sector banks in India.

2. REVIEW OF LITERATURE

Said and Saucier (2003) evaluated the liquidity, solvency and efficiency of Japanese banks using CAMEL rating methodology. The study assessed the capital adequacy, assets and management quality, earnings ability and liquidity position. Prasuna (2004) analyzed the performance of 65 Indian banks using CAMEL modeland concluded that better service quality, innovative products and better bargains were beneficial because of the prevailing tough competition. Nurazi and Evans (2005) show that Adequacy ratio, Assets quality, Management, Earnings, Liquidity and bank size are statistically significant in explaining bank failure. Gupta (2008) analyzed the performance of 30 Indian private banks using Camel Model for the period 2003-2007 and gave rating to top five and bottom five banks. Siva and Natarajan (2011) tested the applicability of CAMEL norms and its consequential impacton the performance of SBI Groups. The authors found that CAMEL scanning helps banks to diagnoseits financial health and alert the bank to take preventive steps for its sustainability. Olweny and Shipo (2011) analyze the determinants of bank failures in Kenya. They found that Asset quality and liquidityare the determinants of Kenyan bank failures. K.V.N. Prasad, G. Ravinder (2012) conducted the study to examine the economic sustainability of a sample of thirty nine banks in India using CAMEL model. Mishra (2012) analyzed the performance of different Indian public and privatesect or banks over the decade 2000-2011 using CAMEL approach and found that private sector banksare at the top of the list, with their performances in terms of soundness being the best. Mishra and Aspal (2013) evaluated the performance and financial soundness of State Bank Group using CAMEL approach and rated different banks using through Capital adequacy, Asset quality Management efficiency, Earning Quality, and Liquidity. Ongore and Kusa (2013) concluded that the financial performance of commercial banks in Kenya is driven mainly by board and management decisions, while macroeconomic factors have insignificant contribution. Gupta (2014) analyzed public banks in India and found that there is a statistically significant difference between the CAMEL ratios and

thus the performance of all the public financial institutions.CA. Ruchi Gupta (2014) has analyzed the performance of public sector banks in India using CAMEL approach. EI Mehdi Ferrouhi (2014) analyzed the performance of major Moroccan financial institutions for the period 2001-2011.

3. OBJECTIVES

The following objectives are taken for the study:

1. To evaluate the selected public and private sector banks from each of the important parameter of CAMEL model like:

    (i)   Capital Adequacy

    (ii) Asset Quality

    (iii) Management capability

    (iv) Earnings capacity and

    (v) Liquidity

2. To investigate the factors that predominantly affects the profitability performance of the selected public & private sector banks in India.

4. SAMPLING

In the present research study, 20 Banks are selected for sample. Banks are:

Nationalized banks:	**Private sector Banks:**
Allahabad Bank	(a) Old Private sector Banks:
Andhra Bank	1. City Union Bank
Bank of Baroda	2. Dhanalakshmi Bank
Bank of India	3. Federal Bank
Canara Bank	4. Karnataka Bank
Central Bank of India	5. KarurVysya Bank
Corporation Bank	6. Lakshmi Vilas Bank
Indian Bank	7. South Indian Bank
Oriental Bank of commerce	(b) New Private sector Banks:
Syndicate Bank	1. Yes Bank
	2. HDFC Bank
	3. ICICI Bank

5. PERIOD OF THE STUDY

Data for the last five years i.e. 2010-11 to 2014-15 are considered for the study.

6. DATA COLLECTION

The Secondary data were used to the study. The data required for the study was gathered from the annual reports of the respective banks through their website.

7. HYPOTHESIS

The following hypothesis was formulated for the study.

H0: There is no significant impact of the parameters of CAMEL model on the profitability performance of the banks.

H1: There is a significant impact of the parameters of CAMEL model on the profitability performance of the banks.

7.1 Tools of Analysis

Capital adequacy

I.   Apital adequacy ratio:

$$\text{Capital adequacy ratio} = \frac{\text{(tier one capital + tier two capital)}}{\text{riskweightedassets}}$$

II. Debt equity ratio:

$$\text{Debt Equity Ratio} = \frac{\text{debt}}{\text{equity}}$$

III. Total advances to total assets ratio:

$$\text{Total advances to total assets ratio} = \frac{\text{(total advances)}}{\text{equity}}$$

IV. Government Securities Investments:

The government securities investments are those banks kept in the securities for the security purpose in the form of cash, bills, money market instruments etc.,

Asset quality

I.   Net NPA'S to total assets ratio:

$$\text{Net NPA'S to total assets ratio} = \frac{(\text{net NPA'S})}{(\text{total assets})} \times 100$$

II. Net NPA'S to total advances:

$$\text{Net NPA'S to total advances} = \frac{(\text{net NPA'S})}{(\text{total advances})} \times 100$$

III. Total investments to total assets ratio:

$$\text{Total investments to total assets ratio} = \frac{(\text{total investments})}{(\text{total assets})}$$

IV. Percentage change in NPAs:

$$\text{Percentage change in NPAs} = \frac{(\text{npa @ current year-} \\ \text{npa @ previous year})}{(\text{npa @ base year})} \times 100$$

Management capability or Efficiency:

I.   Total advances to total deposits ratio:

$$\text{Total advances to total deposits ratio} = \frac{(\text{total advances})}{(\text{total deposits})}$$

II. Profit per employee :

$$\text{Profit per employee} = \frac{(\text{profit after tax})}{(\text{total number of employees})} \times 100$$

III. Business per employee:

$$\text{Business per employee} = \frac{(\text{sum of total deposits} \\ \text{+ total advances in particulararea})}{\text{numberofemployees}}$$

IV. Return on net worth:

$$\text{Return on net worth} = \frac{(\text{profit after tax})}{(\text{average networth})} \times 100$$

Earnings capacity / Quality

I.   Return on assets ratio:

$$\text{Return on assets ratio} = \frac{\text{(profit after tax)}}{\text{(total assets)}} \times 100$$

II. Net profit to average assets:

$$\text{Net profit to average assets} = \frac{\text{(profit after tax)}}{\text{(average assets)}}$$

III. Spread ratio:

$$\text{Spread ratio} \quad = \frac{\text{(net interest margin)}}{\text{(total assets)}}$$

$$\text{Spread formula} = \frac{\text{(total assets)}}{\text{(interest income - interest expanded)}} \times 100$$

IV. Percentage change in net profit:

$$\text{PCNP} = \frac{\text{(net profit at current year-net profit at previous year)}}{\text{(net profit at baseyear)}} \times 100$$

Liquidity:

I.   Government securities to total assets:

$$\text{Government securities to total assets} = \frac{\text{(government securities)}}{\text{(total assets)}} \times 100$$

II.   Liquid assets to total assets:.

$$\text{Liquid assets to total assets} = \frac{\text{(liquid assets)}}{\text{(total assets)}} \times 100$$

III. Liquid assets to total deposits:

$$\text{Liquid assets to total deposits} = \frac{\text{(liquid assets)}}{\text{(total deposits)}} \times 100$$

7.2 Statistical Tools

Regression analysis

Taking Return On Assets as the dependent variable, step wise regression analysis has been applied to find out the most dominant factors that affect the Profitability performance of the banks.

Formulae

$Y_{ROA} = a_0 + b_1$ CAR $+ b_2$ DER $+ b_3$ TATAR $+ b_4$ GSI $+b_5$ NNTAR $+ b_6$ NNTADR $+ b_7$TITSR $+ b_8$ PCN $+ b_9$ TATDR $+b_{10}$ PPE $+ b_{11}$ BPE $+ b_{12}$ RONW $+ b_{13}$ SR $+ b_{14}$ PCNP $+ b_{15}$ GSTA $+ b_{16}$ LATS $+ b_{17}$ LATD.

Where,

CAR	= Capital Adequacy Ratio
DER	= Debt-Equity ratio
TATAR	= Total advances to Total assets ratio:
GSI	= Government Securities Investment
NNTAR	= Net NPA's to total assets ratio
NNTADR	= Net NPA's to total advances
TITSR	= Total investments to total assets ratio
PCN	= Percentage change in NPA
TATDR	= Total advances to Total deposits ratio:
PPE	= Profit per Employee
BPR	= Business per Employee
RONW	= Return on Net worth
ROA	= Return on Assets ratio:
SR	= Spread ratio:
PCNP	= Percentage change in net profit
GSTA	= Government securities to total assets
LATS	= Liquid assets to total assets
LATD	= Liquid assets to total deposits

TABLE 1.
Model Summary

Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.627[a]	.393	.387	.57319
2	.702[b]	.492	.482	.52699
3	.726[c]	.527	.512	.51156
4	.753[d]	.568	.549	.49139

1. Predictors: (Constant), PPE
2. Predictors: (Constant), PPE, DER
3. Predictors: (Constant), PPE, DER, TATDR
4. Predictors: (Constant), PPE, DER, TATDR, NNTADR

Table. 1 shows that profit per employee, debt-equity ratio, total advances-to-total deposits ratio, net NPA's-to-total advances ratio are the major factors impacting the profitability performance of the banks. Profit per employee is found to be highly correlated with the return on assets of the banks and causes a variance of 39.30% in the return on assets of the banks. Debt-equity ratio is also found to be highly correlated with the return on assets of the banks and causes a variance of 49.20% in the return on assets along with profit per employee. Profit per employee, debt equity ratio and total advances to total deposits ratio are collectively causing a variance of 52.70 % in the return on assets of the banks.

And Profit per employee, debt equity ratio and total advances to total deposits and net NPA's to total advances ratios are collectively causing a variance of 56.80% % in the return on assets of the banks. Though the rest of the factors they are not causing much variance individually.

Table 2.
Calculation of beta coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	– .664	.582	.469	– 1.140	.257
PPE	.069	.014	– .372	5.005	.000
DER	– .393	.079	.225	– 4.974	.000
TATDR	2.306	.822	– .258	2.805	.006
NNTADR	– .172	.057		– 3.007	.003

From the table.2 the following regression equation:

ROA = 0.069 PPE – 0.393 DER + 2.306 TATDR – 0.172 NNTADR

$Y = 0.069X_1 - 0.393 X_2 + 2.306 X_3 - 0.172 X_4$

Where,

Y = Return on assets

X_1 = Profit per employee

X_2 = Debt equity ratio

X_3 = Total assets to total deposits ratio

X_4 = Net Non performing assets to total advances ratio

8. CONCLUSION

Due to radical change in the banking sector in the recent years Central banks all around the world has increases their supervision quality and techniques like CAMEL Approach. In the present study we used five important parameters like Capital Adequacy, Assets Quality, Management Efficiency, Earning Quality and Liquidity for assessing financial performance of the selected public and private sector banks in India and to determine the factors that predominantly affect the financial performance of the Indian banking sector with efficiently and accurately. From the analysis we can conclude that, the four factors Profit per employee, Debt-equity ratio, Total assets-to-total deposits ratio, and Net NPA's-to-total advances ratio are the major independent factors impacting the financial performance of the banks taking return on assets as dependent variable.

References

CA. Ruchi Gupta (2014), An Analysis of Indian Public Sector Banks Using Camel approach, IOSR Journal of Business and Management, 16(1), 94-102.

EI Mehdi Ferrouhi (2014), Moroccan Banks Analysis Using CAMEL Model,4(3),622-627.

Gupta, P.K. (2008), A CAMEL Model Analysis of Private sector Banks in India,Journal of GyanManagement, 2(1), 3-8.

Gupta, PK. (2014), An analysis of Indian Public sector banks using CAMEL approach. IOSR Journalof Business and Management, 16, 94-102.

K.V.N. Prasad, G. Ravinder (2012), A Camel Model Analysis of Nationalized Banks in India, International Journal of Trade and Commerce,1(1),23-33.

Mishra, S.K. (2012), Analyzing Soundness of Indian Banking: A CAMEL Approach,Research Journalof Management Sciences, 1(3), 9-14.

Mishra, S.K., P.K. Aspal (2013), A Camel Model Analysis of State Bank Group. World Journal ofSocial Sciences, 3(4), 36 – 55.

Nurazi, R., Evans, M. (2005), An Indonesian study of the Use of CAMEL(S) Ratios as Predictors of Bank Failure, Journal of Economic and Social Policy, 10(1), 1-23.

Olweny, T., Shipho, T.M. (2011), Effects of Banking Sectorial Factors on the Profitability of Commercial Banks in Kenya,Economics and Finance Review, 1(5), 1-30.

Ongore, V.O., Kusa, G.B. (2013), Determinants of Financial Performance of Commercial Banks in Kenya. International Journal of Economics and Financial Issues, 3(1), 237-252.

Prasuna, D.G. (2004), Performance Snapshot 2003-2004, Chartered Financial Analyst, 10(1) 1, 6-13.

Said, M-J.B., Saucier, P. (2003), Liquidity, Solvency, and Efficiency? An Empirical Analysis of the Japanese Banks Distress,Journal of Oxford, 5(3), 354-358.

Siva, S., Natarajan, P. (2011), CAMEL Rating scanning (CRS) of SBI Groups, Journal of BankingFinancial Services and Insurance Research, 1(7), 1-17.