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Management of NPAs: An Empirical Comparative Study of Public Sector Banks

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Abstract: ***Banking System of a country plays a significant role in its economic development. The commercial banks in India have been classified into Nationalized Banks, SBI and its Associate Banks, Regional Rural Banks, Private sector Banks, Foreign Banks and Local Area Banks. Nationalized Banks, SBI and its Associate Banks and IDBI Bank constitutes public sector banks. The Indian banking system is dominated by the public sector banks which account for more than 78% of total banking industry assets. In this research study, different public sector banks have been compared regarding their efficiency in NPA management. To study their efficiency in NPA management, different variables used in this research work are the level of gross NPAs and net NPAs, additions in NPAs and recovery of NPAs. Various public sector banks have been compared w.r.t. their NPA management using growth rate analysis.***

Keywords: NPAs, Public Sector Banks, NPA Management, efficiency.

I. INTRODUCTION

Banking institutions are acting as heart of economic organism that is pumping in savings and pumping out investible funds. Liberalization and deregulation of the Indian market has boosted the banking activity in India. The advancement of information and communication technology has enabled banks to expand their activities and coverage area. The financial sector reforms have led to significant transformation of Indian banking system. Banks in present scenario are adopting international practices to improve efficiency and to reduce NPAs to improve the financial health of banking system. RBI and Government is making several prudential, payment, integrating and provisioning norms and changing its policies and regulations to strengthen the banking sector.

II. RATIONALE OF THE STUDY

The Indian Banking Industry has been facing the challenge of rising NPAs since long. NPAs problem is one of the foremost problems that has shaken the entire banking industry in India. Like a cancer worm, it has been eating the banking system from within. NPAs has chocked off the supply line of credit to the potential borrowers there by having a deleterious effect on capital formation and arresting the economic activity in the country. High level of NPAs is adversely affecting the profitability, liquidity and solvency position of the banking sector. Particularly public sector banks are more affected by this problem of NPAs. RBI has introduced a number of financial reforms to curb rising NPAs. Banks themselves are adopting different strategies to manage their NPAs. Thus the need arises to analyse the comparative efficiency of different banks regarding their NPA management.

III. OBJECTIVE OF THE STUDY

This research paper aims to study and analyse the comparative efficiency of different public sector banks regarding NPA management.

IV. RESEARCH METHODOLOGY

It is a macro level study covering the collective study of nationwide branches of all public sector banks. This study is mainly based on secondary data. The major portion of data has been extracted from Report on Trends and Progress of Banking in India and Statistical tables relating to banks in India as published by RBI. Secondary data has also been collected from articles and papers relating to NPAs published in different business journals, magazines, newspapers, periodicals and websites. Besides various journals such as RBI Bulletin, IBA Bulletin, professional Banker, Chartered financial analyst, ICFAI journal of bank management etc has also been referred. Major guidelines issued by RBI from time to time have also been studied. Data regarding Gross NPAs, Net NPAs, Addition in NPAs and Recovery of NPAs of various public sector banks for a period of 11 years viz. from 2004-05 to 2014-15 have been compiled and analysed. The Bi-variate Regression Model has been used to analyse data.

V. DATA ANALYSIS

In the study Compounded Annual Growth Rate (CAGR) of Gross NPAs, Net NPAs, Additions in NPAs and Recovery of NPAs have been calculated to make their comparative analysis. The growth rate of Gross NPAs for public sector banks is calculated with the help of Bi-variate Regression Model, known as Semi- log Model. In Semi log Model, the dependent variable is natural log of the Gross NPAs and the time in years is the independent variable. The Bi-variate Regression Model can be expressed below as:-

$\log y = \propto + \boldsymbol{\beta}$ (time in years)

Where $\propto$ is intercept and the slope coefficient ($\boldsymbol{\beta}$) represents the growth rate of dependent variable w.r.t. time. The 'p' value of 't' statistic of the slope coefficient represents the presence of significant growth rate of dependent variable w.r.t. time. The results of Semi log Model w.r.t. Gross NPAs of the public sector banks are shown below in table.

Table 1 Table of CAGR of Gross NPAs (in %)

S No.	Bank	CAGR of Gross NPAs	t-Statistic (p-value)	F-Statistic (p-value)	R-Square
1	ANDHRA BANK	31.8	6.35 (0.000)	40.322 (0.000)	0.818
2	STATE BANK OF HYDERABAD	29.5	6.321 (0.000)	39.958 (0.000)	0.816
3	INDIAN OVERSEAS BANK	25.8	8.292 (0.000)	68.757 (0.000)	0.884
4	IDBI BANK LIMITED	25.7	10.032 (0.000)	100.645 (0.000)	0.918
5	INDIAN BANK	24.2	4.394 (0.002)	19.309 (0.002)	0.682
6	UNITED BANK OF INDIA	23.9	8.026 (0.000)	64.411 (0.000)	0.877
7	STATE BANK OF BIKANER & JAIPUR	23.2	9.067 (0.000)	82.21 (0.000)	0.901
8	CORPORATION BANK	23.2	4.878 (0.001)	23.794 (0.001)	0.726
9	STATE BANK OF PATIALA	23	7.95 (0.000)	63.198 (0.000)	0.875
10	STATE BANK OF MYSORE	22.6	6.88 (0.000)	47.333 (0.000)	0.840
11	BANK OF INDIA	21.9	6.132 (0.000)	37.605 (0.000)	0.807
12	UCO BANK	21.7	8.069 (0.000)	65.117 (0.000)	0.879

13	ALLAHABAD BANK	21.4	5.008 (0.001)	25.08 (0.001)	0.736
14	PUNJAB NATIONAL BANK	21.3	5.012 (0.001)	25.12 (0.001)	0.736
15	STATE BANK OF INDIA	20.6	10.081 (0.000)	101.635 (0.000)	0.919
16	UNION BANK OF INDIA	20	6.909 (0.000)	47.735 (0.000)	0.841
17	CANARA BANK	19.3	5.641 (0.000)	31.817 (0.000)	0.782
18	BANK OF BARODA	18.7	4.226 (0.002)	17.856 (0.002)	0.665
19	VIJAYA BANK	18.1	13.202 (0.000)	174.296 (0.000)	0.951
20	CENTRAL BANK OF INDIA	17.5	4.545 (0.001)	20.658 (0.001)	0.697
21	STATE BANK OF TRAVANCORE	17.1	5.375 (0.000)	28.889 (0.000)	0.762
22	PUNJAB AND SIND BANK	16.5	1.718 (0.120)	2.953 (0.120)	0.247
23	BANK OF MAHARASHTRA	14.8	3.588 (0.006)	12.873 (0.006)	0.589
24	SYNDICATE BANK	14.2	8.38 (0.000)	70.228 (0.000)	0.886
25	ORIENTAL BANK OF COMMERCE	14	3.088 (0.013)	9.538 (0.013)	0.515
26	DENA BANK	12.8	2.692 (0.025)	7.246 (0.025)	0.446

The results indicate that the 'p' value of 't' statistic for all the public sector banks except Punjab and Sind Bank is less than 5% level of significance. So, we can conclude that there exist significant CAGR of Gross NPAs for all the public banks except Punjab and Sind Bank. It is also revealed by the results that the bank with the highest CAGR of Gross NPAs is Andhra Bank (31.8), State Bank of Hyderabad (29.5) and Indian Overseas Bank (25.8). The high CAGR of Gross NPAs of these banks convey the lack of control on NPAs by these banks. On the other hand, the banks with lowest level of CAGR of Gross NPAs are Dena Bank(12.8), Oriental Bank of Commerce (14) and Syndicate Bank (14.2). Their low level of CAGR of Gross NPAs show that they are managing their NPAs efficiently and effectively.

The above table reveals that the 'p' value of 'F' statistic for all the public sector banks except Punjab and Sind Bank is less than 5% level of significance. It indicates that the Regression Equation Model is statistically fit for all the public sector banks except Punjab and Sind Bank. The R^2 value in the results show the percentage of variance in the behaviour of Gross NPAs which can be explained by the time behaviour of Gross NPAs. For example, in case of Andhra bank 81.8% of the CAGR of Gross NPAs can be explained with the help of time behaviour of it. Similarly, in case of State Bank of Hyderabad 81.6% of CAGR of Gross NPAs can be explained with the help of its time behaviour.

After analysing comparatively the growth rate of Gross NPAs of various public sector banks, the comparative analysis of growth rate of Net NPAs of different public sector banks have been done using Semi log Model, the results of which are as follows:-

Table 2 Table of CAGR of Net NPAs (in %)

S No.	Bank	CAGR of Net NPAs	t-Statistic (p-value)	F-Statistic (p-value)	R- Square
1	ANDHRA BANK	51.4	8.369 (0.000)	70.046 (0.000)	0.886
2	PUNJAB NATIONAL BANK	47.5	9.72 (0.000)	94.486 (0.000)	0.913
3	STATE BANK OF HYDERABAD	42.9	8.908 (0.000)	79.347 (0.000)	0.898
4	INDIAN OVERSEAS BANK	38.1	10.88 (0.000)	118.38 (0.000)	0.929
5	INDIAN BANK	36	4.634 (0.001)	21.472 (0.001)	0.705
6	CORPORATION BANK	35.7	5.94 (0.000)	35.285 (0.000)	0.797
7	STATE BANK OF MYSORE	35.3	9.783 (0.000)	95.699 (0.000)	0.914
8	ORIENTAL BANK OF COMMERCE	34.3	9.863 (0.000)	97.282 (0.000)	0.915
9	ALLAHABAD BANK	33.9	7.524 (0.000)	56.608 (0.000)	0.863
10	VIJAYA BANK	30.4	15.099 (0.000)	227.983 (0.000)	0.962
11	UNITED BANK OF INDIA	29.6	9.624 (0.000)	92.628 (0.000)	0.911
12	STATE BANK OF PATIALA	29	10.364 (0.000)	107.411 (0.000)	0.923
13	BANK OF BARODA	29	5.323 (0.000)	28.332 (0.000)	0.759
14	BANK OF INDIA	27.3	4.866 (0.001)	23.68 (0.001)	0.725
15	UNION BANK OF INDIA	27.3	3.354 (0.008)	11.252 (0.008)	0.556
16	PUNJAB AND SIND BANK	26.8	2.818 (0.020)	7.942 (0.020)	0.469
17	STATE BANK OF BIKANER & JAIPUR	26.1	7.500 (0.000)	56.248 (0.000)	0.862
18	CANARA BANK	23.8	9.488 (0.000)	90.013 (0.000)	0.909
19	CENTRAL BANK OF INDIA	23.8	4.646 (0.001)	21.581 (0.001)	0.706
20	IDBI BANK LIMITED	23.1	10.099 (0.000)	101.991 (0.000)	0.919
21	SYNDICATE BANK	22.4	9.004 (0.000)	81.071 (0.000)	0.907
22	BANK OF MAHARASHTRA	21.2	3.851 (0.004)	14.834 (0.004)	0.622
23	STATE BANK OF TRAVANCORE	21	5.64 (0.000)	31.811 (0.000)	0.779
24	UCO BANK	20.7	7.014 (0.000)	49.194 (0.000)	0.845

25	STATE BANK OF INDIA	19.7	14.933 (0.000)	222.993 (0.000)	0.961
26	DENA BANK	17.4	3.385 (0.008)	11.455 (0.008)	0.566

The above table indicates that there exist significant CAGR of Net NPAs for all the public sector banks because the 'p' value of 't' statistic for all the public sector banks is found to be less than 5% level of significance. The results show that the highest CAGR of Net NPAs is found in case of Andhra Bank (51.4), Punjab National Bank (47.5) and State Bank of Hyderabad (42.9) . Moreover the banks with lowest CAGR of Net NPAs are found to be Dena Bank (17.4), State Bank of India (19.7), and UCO Bank (20.7). Their low level of CAGR of Net NPAs highlights the efficiency of these banks in dealing with the issue of NPA management.

Besides the CAGR of Gross NPAs and Net NPAs, the CAGR of Additions in NPAs is also calculated by Bi-Variate Regression Model which is shown by the below mentioned table.

Table 3 Table of CAGR of Additions in NPAs (in %)

S No.	Bank	CAGR of Additions in NPAs	t-Statistic (p-value)	F-Statistic (p-value)	R- Square
1	ANDHRA BANK	36	10.134 (0.000)	102.691 (0.000)	0.919
2	STATE BANK OF TRAVANCORE	35.9	10.399 (0.000)	108.133 (0.000)	0.923
3	STATE BANK OF HYDERABAD	35.7	8.15 (0.000)	66.42 (0.000)	0.881
4	UNITED BANK OF INDIA	35.3	11.434 (0.000)	130.747 (0.000)	0.936
5	CORPORATION BANK	33.7	9.173 (0.000)	84.146 (0.000)	0.903
6	INDIAN BANK	33.6	8.81 (0.000)	77.614 (0.000)	0.896
7	INDIAN OVERSEAS BANK	32.6	11.348 (0.000)	128.782 (0.000)	0.935
8	STATE BANK OF MYSORE	32.5	7.34 (0.000)	53.87 (0.000)	0.965
9	BANK OF INDIA	32	16.006 (0.000)	256.195 (0.000)	0.966
10	ALLAHABAD BANK	31.9	13.581 (0.000)	184.436 (0.000)	0.953
11	PUNJAB NATIONAL BANK	30.3	15.691 (0.000)	246.195 (0.000)	0.965
12	STATE BANK OF BIKANER & JAIPUR	30.1	13.407 (0.000)	179.745 (0.000)	0.952
13	BANK OF BARODA	29.5	12.252 (0.000)	150.113 (0.000)	0.943
14	PUNJAB AND SIND BANK	29.4	6.071 (0.000)	36.859 (0.000)	0.804

15	STATE BANK OF PATIALA	29.1	9.875 (0.000)	97.507 (0.000)	0.915
16	CENTRAL BANK OF INDIA	27.9	6.041 (0.000)	36.492 (0.000)	0.802
17	BANK OF MAHARASHTRA	27.4	7.324 (0.000)	53.635 (0.000)	0.856
18	UNION BANK OF INDIA	26.4	15.052 (0.000)	226.567 (0.000)	0.962
19	UCO BANK	26	8.061 (0.000)	64.984 (0.000)	0.878
20	IDBI BANK LIMITED	25.7	4.842 (0.001)	23.441 (0.001)	0.723
21	STATE BANK OF INDIA	24.6	13.041 (0.000)	170.078 (0.000)	0.952
22	SYNDICATE BANK	23.8	11.936 (0.000)	142.462 (0.000)	0.941
23	VIJAYA BANK	23.6	11.619 (0.000)	134.991 (0.000)	0.937
24	ORIENTAL BANK OF COMMERCE	23	3.676 (0.005)	13.511 (0.005)	0.643
25	CANARA BANK	22.7	13.437 (0.000)	180.563 (0.000)	0.953
26	DENA BANK	22.3	7.666 (0.000)	58.77 (0.000)	0.867

It is clear from the above table that the 'p' value of 't' statistic for all the public sector banks is less than 5% level of significance. Hence, there exist significant CAGR for Additions in NPAs for all the public banks. The banks with highest CAGR for Additions in NPAs are Andhra Bank (36), State Bank of Travancore (35.9) and State Bank of Hyderabad (35.7). The high CAGR for Additions in NPAs of these banks indicate their inefficiency in NPA management. On the other hand, Dena Bank (22.3), Canara Bank (22.7) and Oriental Bank of Commerce (23) have the lowest level of CAGR for Additions in NPAs, thus conveying their efficiency in NPA management.

The Bi-Variate Regression Model is also used to find out the CAGR of Recovery of NPAs. Its results are shown in the following table.

Table 4 Table of CAGR of Recovery of NPAs (in %)

S No.	Bank	CAGR of Recovery of NPAs	t-Statistic (p-value)	F-Statistic (p-value)	R-Square
1	STATE BANK OF MYSORE	45.7	4.575 (0.001)	20.93 (0.001)	0.699
2	STATE BANK OF TRAVANCORE	32.9	8.836 (0.000)	78.07 (0.000)	0.897
3	UNITED BANK OF INDIA	31.2	15.806 (0.000)	249.826 (0.000)	0.965
4	STATE BANK OF PATIALA	28.4	8.755 (0.000)	76.654 (0.000)	0.895
5	STATE BANK OF HYDERABAD	26.5	4.5 (0.001)	20.25 (0.001)	0.692
6	VIJAYA BANK	26.3	15.178 (0.000)	230.381 (0.000)	0.962
7	ALLAHABAD BANK	23.6	15.763	248.477	0.965

			(0.003)	(0.003)	
8	INDIAN OVERSEAS BANK	23.1	13.181 (0.000)	173.749 (0.000)	0.951
9	SYNDICATE BANK	21	8.953 (0.000)	80.156 (0.000)	0.899
10	CENTRAL BANK OF INDIA	20.6	5.674 (0.000)	32.199 (0.000)	0.782
11	STATE BANK OF BIKANER & JAIPUR	20.4	6.157 (0.000)	37.913 (0.000)	0.808
12	ANDHRA BANK	19.1	4.134 (0.004)	17.094 (0.004)	0.655
13	CORPORATION BANK	19	7.698 (0.000)	59.255 (0.000)	0.868
14	BANK OF INDIA	18.3	9.195 (0.000)	84.54 (0.000)	0.904
15	INDIAN BANK	17.9	4.177 (0.002)	17.445 (0.002)	0.666
16	UCO BANK	17.9	4.004 (0.003)	16.033 (0.003)	0.645
17	BANK OF MAHARASHTRA	15.9	9.014 (0.000)	81.257 (0.000)	0.987
18	ORIENTAL BANK OF COMMERCE	15.7	5.443 (0.000)	29.626 (0.000)	0.767
19	PUNJAB NATIONAL BANK	15.4	6.112 (0.000)	37.359 (0.000)	0.806
20	STATE BANK OF INDIA	14.6	6.658 (0.000)	44.327 (0.000)	0.831
21	CANARA BANK	13.5	4.891 (0.001)	23.919 (0.001)	0.727
22	IDBI BANK LIMITED	12.5	2.266 (0.002)	5.136 (0.002)	0.363
23	BANK OF BARODA	11.9	3.785 (0.000)	14.327 (0.000)	0.614
24	DENA BANK	7.8	2.606 (0.028)	6.791 (0.028)	0.432
25	UNION BANK OF INDIA	6.2	2.216 (0.054)	4.909 (0.054)	0.353
26	PUNJAB AND SIND BANK	5.3	0.866 (0.409)	0.751 (0.409)	0.077

The results shown in the above table indicate that for all the public sector banks except Union Bank of India and Punjab & Sind Bank, the 'p' value of 't' statistic is less than 5% level of significance. Hence there exist significant CAGR of Recovery of NPAs in case of all the public banks except Union Bank of India and Punjab & Sind Bank. The banks with highest CAGR w.r.t. Recovery of NPAs are State Bank of Mysore (45.7), State Bank of Travancore (32.9) and United Bank of India (31.2). The high level CAGR w.r.t. Recovery of NPAs reveals the efficiency of these banks in NPA management. On the other hand, the banks with low level of efficiency in NPA management are those with low level of CAGR w.r.t. Recovery of NPAs and these are Dena Bank (7.8), Bank of Baroda (11.9) and IDBI Bank Ltd. (12.5).

VI. Conclusion

On the basis of above data analysis this research work can be concluded as below:

Most Efficient Public Sector Banks Regarding NPA Management

Group/Criterion	Names of Banks
I. Growth of NPAs	Syndicate Bank, Vijaya Bank, IDBI
II. Efficiency regarding Recovery of NPAs	State Bank of Travancore, United Bank of India, State Bank of Mysore

Most Inefficient Public Sector Banks Regarding NPA Management

Group/Criterion	Names of Banks
I. Growth of NPAs	Indian Overseas Bank, Indian Bank, United Bank of India, State Bank of Hyderabad
II. Efficiency regarding Recovery of NPAs	Punjab & Sind Bank, Union Bank of India , Dena Bank

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