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Effectiveness of Assets Towards Earning Quality of Public Sector Banks in India

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Abstract:
Public Sector Banks have played a key role in promoting financial inclusion. But at the same time, the NPA crisis in India built up over time impacted the financial parameters of PSBs, restricting their ability to lend and support productive sectors of the economy. To explore the trend and pattern of assets and earning quality figures, the data related to all the 12 public sector banks (PSBs) for past 3 years viz. 2021-22 to 2023-24 have been considered. Additionally, the study evaluates the relationship between the assets quality and earning quality of PSBs during the study period. This study is mainly based on secondary data for which the researcher collected the secondary data from the annual reports of PSBs and statistical tables published by Reserve Bank of India. The findings of the investigation reveal that majority of the PSBs are found to be effective in terms of asset and earning quality. Whether it is a matter of quality of assets or earning, in both the cases Bank of Maharashtra has performed the best among the total 12 PSBs. Further, One-way ANOVA and Correlation Coefficient is also used to test hypothesis. Except NIM, there is no significant difference between the trends of Gross NPAs, Net NPAs and ROA in PSBs over the last three years. Along with this, the study also found a positive impact on earnings due to decline in bad loans.

Keywords: Gross NPA, Net NPA, PSB, NIM, ROA

Introduction:
With PSBs in India have been functioning as an important segment of banking and financial landscape in India. These banks have been making appreciable contribution in the economic development of the India. The 12 PSBs with a network of 1,60,000 branches in had aggregate deposit of ₹128 Trillion and advances amounting to ₹95 Trillion as on 31-03-2024. The main source of income of banks is interest received on loan and advances. Interest is charged on assets and then recovered from borrower. But if the bank does not collect or receive the interest from the borrower within a reasonable time so in this situation asset becomes non-performing. Generally, an asset becomes non-performing when it stops generating income for the bank. Non-performing assets (NPAs) have a dual impact on the profitability of the bank. One the one hand, the bank stops earning interest from these assets, on the other hand, banks are required to make provisions for these assets as per criteria. In India, NPAs was first accurately measured due to AQR, an exercise conducted by RBI, in 2015, followed by peak in March 2018 with 14.58% and 7.97% of Gross NPA ratio and Net NPA respectively. Similarly, Covid-19 also affected the performance of PSBs. The Government's 4R strategy of Recognition, Resolution, Recapitalization and Reform as a response to the situation prevailing in 2014 had led to dramatic improvements at PSBs in

2020-21 on various parameters of profitability, capital adequacy, NPA reduction, checks on occurrence of fraud and mobilization of funds from the market. The average gross and net non-performing asset ratio of public sector banks stood at 9.1 and 3.1 respectively at the end of the year 2021-22. The present study will focus on the combined study of PSBs in India with special reference to effectiveness of Assets towards earning quality.

Statement of Problem:

A recent report highlights the dominant position of Public Sector Banks (PSBs) in India, which account for more than 50 percent of the banking business in terms of market share, this reflects the higher trust placed by the public in PSBs. However, in the year 2020-21, PSBs have registered a significant decline in bad loans. But still despite the reduction in bad loans, has the earnings of these banks also increased? Will these PSBs be able to maintain this performance even after the year 2020-21? To identify this, the need to study the effectiveness of assets on the earnings of these banks has been felt.

Literature Review:

P. Arun Prakash and A.M. Mohamed Sindhasha (2018) in their research critically investigates the relationship between return on assets of 43 scheduled commercial banks and revealed that bank specific determinants alone could not determine the return on Assets of public and private sector commercial banks. It is also affected by macroeconomic factors and the RBI's policy decisions. **Nirali J Kantharia (2020)** in his research, analyzed the assets quality and its impact on profitability of private sector banks in India and identified the increasing trends in NPAs which shows poor assets quality in private sector banks. **Dr. Deepak Kumar and Arun Kumar Mishra (2022)** in their research analysed the impact of asset quality on the financial performance of banks in India. From the result it is clearly evident that Gross NPA and Net NPA is highly correlated with Financial Performance of Banks. **Bajanthri Deepa and Dr. V.G. Muragan (2023)** focused on financial performance of Indian public sector banks. The return on assets, return on equity, earnings per share, operating expenses, net profit, total income, total assets and liabilities and CASA ratio were used to analyze the data. Based on the data analysis it is possible to conclude that public sector banks are performing well. From that data SBI was observed to be very stable. **Dr. Haresh B. Vaishnani and Beena S. Sheth (2024)** examined the impact of Non-Performing Assets (NPAs) on the profitability of both public and private sector banks in India. The research findings suggest that public sector banks experience a more significant impact from NPAs compared to private sector banks, resulting in reduced profitability and a higher demand for regulatory oversight. **Priyata Chaudhury (2025)** in her research explained the negative relationship between Non-Performing Loans and profitability of SBI. The credit worthiness of customers must be carefully analyzed and loan recovery process must be closely monitored by the management of State Bank of India, to avoid or decrease the incidence of Non-Performing Loans which are adversely affecting the profitability of the bank.

Objectives of the Study:

1. To review the progress of PSBs in India in terms of assets quality.
2. To review the progress of PSBs in India in terms of earning quality.
3. To Compare the performance of PSBs in terms of assets as and earnings.
4. To examine the effectiveness of assets towards earning quality of PSBs.

Research Hypothesis:

H_o1: There is no significant difference between the trends of Gross NPA in PSBs over the last three years.

H_o2: There is no significant difference between the trends of Net NPA in PSBs over the last three years.

H_o3: There is no significant difference between the trends of NIM in PSBs over the last three years.

H_o4: There is no significant difference between the trends of ROA in PSBs over the last three years.

H_o5: There is positive relationship between the asset quality and earning quality of PSBs over the last three years.

Research Methodology:

With a view of evaluating the objectives of the present study, researcher has selected all 12 PSBs of India. The present study is related to 3-year period (2021-22, 2022-23 and 2023-24) mainly based on secondary data. The required data of PSBs were collected from the annual reports of PSBs and statistical tables published by Reserve Bank of India. Total 4 variables were used having a close association with quality of assets and earning of PSBs i.e. Gross NPA, Net NPA, NIM and ROA. The data were mainly analyzed by using Ratio analysis and Mean. Further, 5 hypotheses have been tested and for this One-way ANOVA and Correlation Coefficient techniques were used.

Data Analysis and Interpretation:

Gross NPA Ratio: Gross NPA is the sum of all loan assets that classified as NPA as per RBI guidelines. A lower Gross NPA generally indicates better profitability for bank. It is the ratio of Gross NPA to Gross Advances of the Bank. (Gross NPA Ratio= Gross NPA/Gross Advances*100)

Table No. 1 (Gross NPA Ratio (%)

S. No.	Bank	2021-22	2022-23	2023-24	Average
1	Bank of Baroda	6.61	3.79	2.92	4.44
2	Bank of India	9.98	7.31	4.98	7.42
3	Bank of Maharashtra	2.19	2.47	1.88	2.18
4	Canara Bank	7.51	5.35	4.23	5.70
5	Central Bank of India	14.84	8.44	4.50	9.26
6	Indian Bank	8.47	5.95	3.95	6.12
7	Indian Overseas Bank	9.82	7.44	3.10	6.79
8	Punjab and Sind Bank	12.17	6.97	5.43	8.19
9	Punjab National Bank	11.78	8.74	5.37	8.63
10	State Bank of India	3.97	2.78	2.24	3.00
11	UCO Bank	7.89	4.78	3.46	5.38
12	Union Bank of India	11.11	7.53	4.76	7.80
	Average	**8.86**	**5.96**	**3.90**	**6.24**

Source: Annual Reports of PSBs

It can be observed from the Table 1, Bank of Maharashtra performed well to keep its Average Gross NPA per branch at the lowest at 2.18%. This was followed by State Bank of India with 3.00% and Bank of Baroda with 4.44%. Apart from these, for all remaining PSBs it was above 5%. This ratio for Central Bank of India was recorded at 9.26% which was the highest among PSBs. However, Figure 1 clearly indicates that the yearly Gross NPA ratio of PSBs depicted a decreasing trend during the study period.

Net NPA Ratio: Net NPAs is obtained by reducing the provisions from Gross NPAs and shows the actual burden of banks. A lower Net NPA generally indicates better profitability for bank. This Ratio can be calculated by following: Net NPA Ratio= Gross NPAs - Provisions on Gross Advances/Gross Advances*100)

Table No. 2 (NET NPA Ratio (%)					
S. No.	**Bank**	**2021-22**	**2022-23**	**2023-24**	**Average**
1	Bank of Baroda	1.72	0.89	0.68	1.10
2	Bank of India	2.34	1.66	1.22	1.74
3	Bank of Maharashtra	0.23	0.25	0.20	0.23
4	Canara Bank	2.65	1.73	1.27	1.88
5	Central Bank of India	3.97	1.77	1.23	2.32
6	Indian Bank	2.27	0.90	0.43	1.20
7	Indian Overseas Bank	2.65	1.83	0.57	1.68
8	Punjab and Sind Bank	2.74	1.84	1.63	2.07
9	Punjab National Bank	4.80	2.72	0.73	2.75
10	State Bank of India	1.02	0.67	0.57	0.75
11	UCO Bank	2.70	1.29	0.89	1.63
12	Union Bank of India	3.68	1.70	1.03	2.14
	Average	**2.56**	**1.44**	**0.87**	**1.62**

Source: Annual Reports of PSBs

From the above table no. 2 we can clearly understand that Net NPA of PSBs is in decreasing trend during the study period. The average ratio of Net NPA for Bank of Maharashtra and State Bank of India were recorded as 0.23% and 0.75% respectively, the least among PSBs. The ratio for the Punjab National Bank was the highest with 2.75%. It was followed by Central Bank of India with 2.32%, Union Bank of India with 2.14% and Punjab and Sind Bank with a ratio of 2.07%. All other remaining PSBs succeed to maintain their average Net NPA ratio at a level of below 2% which clearly shows their efficient asset management.

Net Interest Margin Ratio: This is a key profitability metric for bank, representing the difference between interest income earned on assets and interest paid on liabilities, expressed as a percentage. A higher NIM generally indicates better profitability for bank. It is computed by: Net Interest Income/Average Interest Earning Assets profit *100.

Table No. 3 (Net Interest Margin Ratio (%)					
S. No.	**Bank**	**2021-22**	**2022-23**	**2023-24**	**Average**
1	Bank of Baroda	3.03	3.31	3.18	3.17

2	Bank of India	2.36	3.01	2.97	2.78
3	Bank of Maharashtra	3.15	3.56	3.92	3.54
4	Canara Bank	2.82	2.95	3.05	2.94
5	Central Bank of India	3.21	3.64	3.40	3.42
6	Indian Bank	2.93	3.37	3.47	3.26
7	Indian Overseas Bank	2.41	2.93	3.28	2.87
8	Punjab and Sind Bank	2.80	2.91	2.45	2.72
9	Punjab National Bank	2.71	3.06	3.09	2.95
10	State Bank of India	3.12	3.37	3.28	3.26
11	UCO Bank	2.81	2.87	2.92	2.87
12	Union Bank of India	2.94	3.07	3.10	3.04
	Average	**2.86**	**3.17**	**3.18**	**3.07**

Source: Annual Reports of PSBs

As shown in table 3, the Average Net Interest Margin of Bank of Maharashtra is highest among all PSBs i.e. 3.54% and lowest in Punjab and Sind bank with 2.72%. There is sharp rise in net interest margin ratios of all PSBs in 2022-23 and then some has a declining trend in 2023-24. The overall analysis of figure 3 shows that this ratio has mixed trend, the average net interest margin of half of the PSBs was more than 3% while in case of remaining banks it was less than 3%. Usually, a 3-4% Net Interest Margin ratio is considered to be good.

Return on Assets Ratio- This ratio shows how well assets are used to create income. For banks it is the ratio of net profit after tax to total working funds. A higher ROA generally indicates better profitability for bank. It is computed by: Net profit/Total Working Funds*100.

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

S. No.	Bank	2021-22	2022-23	2023-24	Average
1	Bank of Baroda	0.60	1.03	1.17	0.93
2	Bank of India	0.43	0.49	0.70	0.54
3	Bank of Maharashtra	0.55	1.10	1.50	1.05
4	Canara Bank	0.48	0.81	1.01	0.77
5	Central Bank of India	0.30	0.43	0.63	0.45
6	Indian Bank	0.63	0.77	1.07	0.82
7	Indian Overseas Bank	0.59	0.68	0.81	0.69
8	Punjab and Sindh Bank	0.85	0.98	0.41	0.75
9	Punjab National Bank	0.26	0.18	0.54	0.33
10	State Bank of India	0.67	0.96	1.04	0.89
11	UCO Bank	0.34	0.62	0.56	0.51
12	Union Bank of India	0.47	0.69	1.03	0.73
	Average	**0.51**	**0.73**	**0.87**	**0.71**

Source: Annual Reports of PSBs

As per Table No. 4, except Punjab and Sind Bank and UCO Bank, there has been a continuous growth in the Return on Assets ratio of all other PSBs in the study period. However, both banks had shown an increase in return on asset in 2022-23 as compared to 2021-22, but after that there was a slight decline in their ratio in 2023-24. Like other ratios, again Bank of Maharashtra secured the best performance in terms of average return on asset ratio of 1.05% while Punjab and Sind Bank registered the lowest i.e. 0.33%.

Testing of Hypothesis: Total 5 hypotheses were tested in this study, which are as follows.

Table No. 5

(Hypothesis No. 1) One-way ANOVA Test for Gross NPA					
Source of Variation	***SS***	***d. f.***	***MS***	***F-ratio***	***Critical value of F (at 5%) (from the F-table)***
Between Banks	162.19	11	14.74	1.85	2.22
Within Banks	191.33	24	7.97		
Total	353.53	35			

Source: Computed from M S Excel

The table no. 5 shows that the calculated value of F is 1.85 which is less than the table value of 2.22 at 5% level. Therefore, we accept H_0 (null hypothesis), there is no significant difference between the Gross NPA ratio of PSBs.

Table No. 6

(Hypothesis No. 2) One-way ANOVA Test for Net NPA					
Source of Variation	***SS***	***d. f.***	***MS***	***F-ratio***	***Critical value of F (at 5%) (from the F-table)***
Between Banks	16.41	11	1.49	1.42	2.22
Within Banks	25.16	24	1.05		
Total	41.58	35			

Source: Computed from M S Excel

The table no. 6 shows that the calculated value of F is 1.42 which is less than the table value of 2.22 at 5% level. Therefore, we accept H_0 (null hypothesis), there is no significant difference between the Net NPA ratio of PSBs.

Table No. 7

(Hypothesis No. 3) One-way ANOVA Test for Net Interest Margin					
Source of Variation	***SS***	***d. f.***	***MS***	***F-ratio***	***Critical value of F (at 5%) (from the F-table)***
Between Banks	2.23	11	0.20	3.18	2.22
Within Banks	1.53	24	0.06		
Total	3.75	35			

Source: Computed from M S Excel

The table no. 7 shows that the calculated value of F is 3.18 is more than the table value of 2.22 at 5% level. This analysis supports H_1 (alternative hypothesis), there is significant difference between the Net Interest Margin ratio of PSBs.

Table No. 8

(Hypothesis No. 4) One-way ANOVA Test for Return on Assets					
Source of Variation	***SS***	***d. f.***	***MS***	***F-ratio***	***Critical value of F (at 5%) (from the F-table)***
Between Banks	1.50	11	0.14	2.14	2.22
Within Banks	1.52	24	0.06		
Total	3.02	35			

Source: Calculated from M S Excel

The table no. 8 shows that the calculated value of F is 2.14 which is less than the table value of 2.22 at 5% level. Therefore, we accept H_0 (null hypothesis), there is no significant difference between the Return on Assets ratio of PSBs.

Table No. 9

(Hypothesis No. 5) Correlation Coefficient Test between Assets and Earnings				
	2021-22	***2022-23***	***2023-24***	***r***
Average Gross NPA of Banks	8.86	5.96	3.90	**-0.98**
Average Net NPA of Banks	2.56	1.44	0.87	
Average Assets Quality (X)	**5.71**	**3.70**	**2.39**	
Average Net Interest Margin of Banks	2.86	3.17	3.18	
Average Return on Assets of Banks	0.51	0.73	0.87	
Average Earning Quality (Y)	**1.69**	**1.95**	**2.03**	

Source: Calculated from M S Excel

The table no. 9 shows that the calculated value of r is -0.98 i.e. indicates negative correlation. Therefore, the analysis supports H_1 (alternate hypothesis), there is a negative relationship between assets quality and earning quality of PSBs over the study period.

Findings and Conclusions:

The study shows that there is remarkable progress in public sector banks during the study period. The Gross NPA ratio of Public Sector Banks (PSBs) has witnessed a remarkable improvement, declining to 3.90% in 2023-24 from a peak of 8.60% in 2021-22. A lower NPA generally indicates better profitability for bank. Majority of the PSBs are succeed to maintain their average Net NPA ratio at a level of below 2% which clearly shows their efficient asset management. The ratio was decreased from 2.56% in 2021-22 to 0.87% in 2023-24. As far as the earning capacity of PSBs is concerned, there is an upward trend in Net Interest Margin ratio of PSBs throughout the study period. The ratio was 2.86% in 2021-22, and has increased to 3.18% in 2023-24. It indicates all banks are managing the interest-earning assets and liabilities better and therefore, attracting more profits. On analyzing the Return on Assets ratio during the study period, it is found that there is a continuous increase in this ratio which indicates that their business is efficiently turning its assets into income. The average ROA Ratio of banks was 0.51% in the year 2021-22, which increased to 0.87% in the year 2023-24. After comparing the overall performance, Bank of Maharashtra and State Bank of India has performed the best among the total 12 PSBs in India. After testing the hypothesis, Except NIM, there is no significant difference between PSBs in terms of trends of Gross NPAs, Net NPAs and ROA over the last three years. Further, a negative correlation is found between assets quality and earning quality of PSBs over the study period, this proves if banks reduce their bad loans efficiently, their profitability will definitely increase.

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