Non-performing Assets: Magnitude, Status, and Impact
(A Comparative Study concerning all public sector, private sector, and foreign banks in India)

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Abstract:

Banks play a crucial, functional, and dynamic role in every nation's economy to a greater extent as financial intermediaries. The Indian banking sector also contributes to the economic growth and development of the country. Banks channeling the funds from surplus units to deficit units for productive purposes also helps the government formulate financial policies. The traditional activities of a bank were lending and borrowing money. Due to many factors, the banking sector has been extending its operations and involved in all sorts of modern financial services depending upon the socio-economic conditions of the economy. Therefore, the banking sector can be considered a high-priority constituent in the Indian financial service sector. But during the post-reform period, the Indian banking industry witnessed a decline in operational efficiency, leading to a decrease in profitability, productivity, and efficiency for several reasons. Some specific reasons may be considered as foreign direct investment, various credit programs and credit sanctioning policies, mechanisms, etc., and due to these banks' efficiency deteriorated. Because of all these reasons, banks affected the cost side and health of banks, and the most alarming issue was the quality of assets.

Several reforms were formulated and implemented to address this issue, but this problem of Non-performing assets (NPAs) was not entirely resolved. Banking reforms developed prudential norms focusing on asset classification, income recognition, and provisioning to improve the banks' efficiency. NPAs became a significant area of concern for the banking sector. As of 31st March 2018, gross NPAs stood at Rs. 10.35 lakh crores, out of which 85% arises from the loan assets given by public sector banks, and expect a rise in the volume of NPAs in the years to come. Due to changing dynamics of the business environment, it is essential to assess NPAs periodically to know the exact reasons and the need for re-engineering the banks. Considering this present scenario, this research paper has attempted to examine the status of NPAs and their impact on operational efficiency and profitability by considering all public sector, private sector banks, and foreign banks established in India, based on statistics during the post-millennium period. This paper considers the aggregate data of the three sectors of banks to examine the differences between three groups of banks regarding NPA management from the financial year 2007-08 to 2018-19.

Keywords: NPA, Standard assets, substandard asset, Loss asset, doubtful asset

Introduction:

The Indian banking sector can be considered a primary vehicle for the economic growth and development of the Indian economy. Banks play a crucial role in the disbursement of surplus funds to the deficit sector for productive use of the funds. A significant portion of financial sector activities are primarily from commercial banks as banks act as financial intermediaries to cater the individual's requirements to corporates. It even supports the governments of India and RBI in formulating and implementing monetary policies and reforms. Therefore, the nation's economic development significantly depends on the banking system's effectiveness. The Indian banking sector's significant role is financial intermediation and credit channel and extends its support as a payment facilitator. These primary activities of commercial banks help generate income in the form of interest on loans and advances. And their costs, along with the payments and benefits. But there was a steep shrink in the productivity and performance of banks due to various reasons during the post-reform period. The bank's asset quality deteriorated and impacted very badly the operational efficiency of the banks, especially public sector banks' income, and cost. Many reforms have been taking place since 1992 to till date for effective management of loan assets and to improve the profitability and productivity of the banks. As per the statistics of the

banking sector, there was a considerable change in the volume of NPAs, but this problem is still alarming to take careful and effective measures to reduce the levels of NPAs.

Review of Literature:

The research studies indicate that many studies were carried out on the performance of banks, Non-performing assets trends, and management of NPAs. Following is the literature review of a few works performed on the causes, reasons, effects of NPAs, and management practices conducted by commercial Banks in India**.** Various studies on non-performing assets in public and private sector banks have shown similar findings regarding the causes of NPAs. Reviews by **Gerlach, S., Peng, W. & Shu, C. (2005), Narula and Singla (2014), Ganesh Chawla et. Al., 2020)** found that NPAs there was a significant increase in NPAs as there was no proper lending structure and no application of technology to complete the process quickly, mismanagement, and the country's low HDI scores. Studies by **Kaur and Saddy (2011)**, **Srinivas K T (2013)**, **Arora and Ostwal (2014), Jaslene Kaur Bawa et al. (2019), Selvarajan and Vadivalagan (2013), Mehta et al., (2020)** emphasized mismanagement of Fund has led to the deterioration of financial positions. These studies also found that the NPAs affect a bank's profitability, asset growth, and total liabilities ratio to total assets. In private banks, recovery management is better than in public sector banks. Most personal sector banks issue high-risk loans and are the reason for high NPAs. **Arora, N. (2018), and Gaur & Mohapatra (2020)** discussed the implication of public sector banks' lending practices, especially the compulsory nature of priority sector lending, for non-performing assets. **According to the findings of the studies of Meenakshi and Mahesh (2010)**, **Hosmani and Hudagi (2011)**, **Olekar and Talawar (2012)**, **Roman and Danuletiu (2013), Sikdar and Makkad (2013)**, NPA in the priority sector is higher than non – priority sector. Studies highlighted the role of joint liability groups (JLGs) and self-help groups (SHGs) in enhancing the loan recovery rate. Majorly these studies recognized the **need for proper credit risk assessment and recommended good recovery management. Cowley and Cummins (2005), Jain (2007), Vallabh, Bhatia, and Mishra (2013)** highlighted the need for draconian act SARFASI and prudential norms for risk management of financial market products and problems like NPAs in all the banks in India.

Statement of the problem:

The problem of NPAs in the banking sector was released in India only in the early 90s. After that, many steps were taken to solve the issue of existing NPAs, and in this process, several committees like Narasimham Committee and Verma Committee. Were formulated to make suggestions for the effective management of NPAs. These committees attempted to reduce the NPAs in the balance sheets of banks and also helped reduce the level of NPAs. But unfortunately, these reforms failed to address the problem completely, maybe lack of systematic and evaluation process of NPAs, unanimity in the policies, no consistency in the application of norms, etc. Therefore, NPAs became an ongoing problem in the banking sector even today. Therefore, a periodic assessment of NPAs and its related issues from time to time is essential to understand the effectiveness of various measures designed and implemented to improve the reduction in the volume of NPAS. Such assessments help in understanding the rigor of the problem and also to improvise the existing mechanism. Even though the nature of the problem is the same with all the banks, but magnitude and impact of NPAs are likely to differ from one bank to another, especially private sector banks to public sector and foreign banks. So it requires specific remedial measures as per the intensity of the problem. This can only be possible when there is a periodic assessment in various banks. In this background, the present study has attempted to compare the Indian Public sector, Private sector, and foreign banks' NPAs magnitude, current status, management practices, and impact on banks' operational performance.

Objectives of the study:

The comparative study on NPAs of Indian banks and foreign banks is carried out with the following objectives:
- To examine the business and operational efficiency of all India's Public, Private, and Foreign Banks.
- To study the status, trends, and movement of Non-performing assets of public, private, and foreign banks for ten years.
- To examine the impact of Non-performing assets on the performance of Indian and foreign banks.

Hypotheses of the study:

Ho_1: There is no significant difference in the operational efficiency among Public, Private, and Foreign banks
Ho_2: There is no significant difference in the management of NPAs between Indian banks and foreign banks
Ho_3: There is no impact of the NPAs on the performance of the Indian and foreign banks

Methodology:

The present study is developed to be a descriptive study with appropriate analytical discussions in tune with the proposed objectives. The secondary data has been obtained for ten years, starting from 2007-08 (the year in which the global recession erupted due to ill practices of financial institutions) to 2018-19; the data was drawn from the official website of the Reserve Bank of India including publications and Annual reports of RBI. The data obtained has been analyzed using financial ratios like percentages, averages, and appropriate statistical measures/ techniques like One-way ANOVA to determine the significance of the difference in standards among three groups of banks and multiple regression analysis to measure the impact of NPAs on the efficiency of the banks. The reference period is from 2007-08 to 2018-19, i.e. 12 years.

Theoretical Background about NPAs

The banking sector in India plays a significant role in the economic development of India as it contributes significantly. The traditional activity of the banking sector was confined to lending and borrowing funds, but due to various factors, the banking sector extended its operations into various financial services. However, success always depends upon the efficient management of funds, which depends upon the banks' operational efficiency. Trends and progress in the Indian Banking sector indicate that the banking sector has been suffering from Non-Performing Assets (NPAs). This concept was introduced in 1990 by Narasimham Committee. And banks witnessed NPA's impact on profitability and efficiency. Therefore, several recommendations were made to reduce the level of NPAs, and in this process, banks' loans and advances are categorized into performing and non-performing assets.

Further, recommendations were made on asset recognition and provisioning against loans and advances that already proved destructive. Asset classification is one crucial aspect that helps the banking sector manage loans and advances. The Reserve Bank of India issued specific guidelines on credit facilities and prudential accounting norms. Depending on the credit weaknesses and collateral security norms, loan assets were classified as follows:

Chart 1 - Classification of Loans
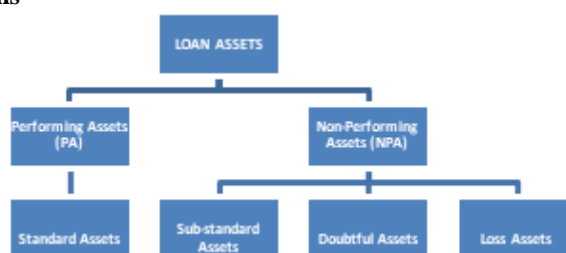
(Source: Primary Source)

Results and Discussions:

FINANCIAL PERFORMANCE OF BANKS:

India's set-up banking system is different as the motto was some social and economic objective rather than profitability alone. Therefore, it is genuinely unfair if the performance of the banks has been conducted based on the bank's profitability. So, the following indicators have been selected to assess the Indian Public, private, and foreign banks' operational efficiency and performance during the 12 years from 2007-08 to 2018-19.
1.   Gross Return on Total Assets (GRTA)
2.   Net Return on Total Assets (NRTA)
3.   Interest Income as the Percentage of Total Assets (IITA)
4.   Interest Expended as the percentage of Total Assets (IETA)
5.   Net Interest Income or Margin (Spread) as the percentage of Total Assets (NIMTA)
6.   Other Income as the percentage of Total Assets (OITA)
7.   Return on Equity (ROE)
8.   Capital Adequacy Ratio (CAR)

Table:1 PERFORMANCE INDICATORS OF PUBLIC, PRIVATE AND FOREIGN BANKS

(Values in percentages)

Banks	Performance Indicators	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
All Public Sector Banks	GPTA	1.84	1.96	1.87	2.05	2.05	1.87	1.71	1.7	1.51	1.68	1.57	1.51
All Private Sector Banks		2.28	2.46	2.68	2.58	2.51	2.64	2.79	2.86	2.92	3.02	2.82	2.55
All Foreign Banks		4.4	4.97	3.7	3.52	3.44	3.33	3.28	3.36	3.13	3.27	2.86	2.78
All Public Sector Banks	NPTA	1	1.03	0.97	0.96	0.88	0.8	0.5	0.46	-0.07	-1.1	-0.84	-0.65
All Private Sector Banks		1.13	1.13	1.28	1.43	1.53	1.63	1.65	1.68	1.5	1.3	1.14	0.63
All Foreign Banks		2.09	1.99	1.26	1.75	1.76	1.92	1.54	1.84	1.45	1.62	1.34	1.56
All Public Sector Banks	IITA	7.8	8.05	7.46	7.52	8.55	8.54	8.31	8.12	7.74	6.2	6.68	6.87
All Private Sector Banks		8.42	8.65	7.6	7.59	8.71	9.04	8.9	8.81	8.63	8.27	7.73	7.92
All Foreign Banks		7.65	7.49	5.99	6.15	6.67	6.89	6.6	6.71	6.67	6.33	5.96	5.77
All Public Sector Banks	IETA	5.97	6.26	6.57	5.12	6.36	6.63	6.47	6.43	6.19	5.7	5.12	5.01
All Private Sector Banks		6.47	6.6	6.58	4.97	6.43	6.72	6.4	6.39	6.08	5.59	4.94	5.14
All Foreign Banks		4.2	4.58	2.78	3.3	4.34	4.67	4.78	4.61	4.46	4.21	3.85	3.79
All Public Sector Banks	NIMTA	2.25	2.35	2.29	2.77	2.57	2.45	2.35	2.23	2.12	2.12	2.08	2.33
All Private Sector Banks		2.67	2.86	2.9	3.1	3.09	3.22	3.31	3.37	3.41	3.38	3.32	3.27
All Foreign Banks		4.33	4.33	3.96	3.86	3.89	3.83	3.54	3.54	3.59	3.41	3.43	3.23
All Public Sector Banks	OITA	1.2	1.25	1.19	0.99	0.89	0.87	0.87	0.91	0.92	1.2	1.16	0.95

All Private Sector Banks		2.02	1.82	1.87	1.64	1.62	1.62	1.67	1.72	1.73	1.88	1.69	1.48
All Foreign Banks		3.32	3.68	2.26	2.38	2.02	1.83	1.95	1.99	1.6	1.95	1.55	1.48
All Public Sector Banks		17.13	17.94	17.47	16.9	15.33	13.24	8.48	7.76	3.42	2.05	-14.62	-11.4
All Private Sector Banks	ROE	13.43	11.38	11.94	13.7	15.25	16.46	16.2	15.7	13.81	11.87	10.12	5.45
All Foreign Banks		16.05	13.75	7.34	10.26	10.79	11.53	9.03	10.2	8	9.12	7.16	8.77
All Public Sector Banks		12.5	12.3	13.3	13.1	14.1	11.31	11.3	11.2	11.8	12.1	11.7	12.2
All Private Sector Banks	CAR	14.4	15.1	17.5	16.5	16.3	15.1	15.4	15.3	15.7	15.7	16.4	16.1
All Foreign Banks		13.1	14.9	17.26	16.97	16.75	18.76	17.3	17.4	17.1	18.7	19.1	19.4

(Source: Statistical tables relating to Banks in India, RBI)

Statistical Analysis:

Table 2 - ANOVA Test Results of Public, Private, and Foreign Sector Banks

Sl. No.	Parameter	Pooled Standard Deviation	One-way ANOVA p-value $< \alpha$	Null Hypothesis Accept/Reject
1.	GPTA	0.394716	0.000	Reject
2.	NPTA	0.510280	0.000	Reject
3.	IITA	0.625238	0.000	Reject
4.	IETA	0.629534	0.000	Reject
5.	NIMTA	0.276820	0.000	Reject
6.	OITA	0.411784	0.000	Reject
7.	ROE	6.87625	0.000	Reject
8.	CAR	1.25372	0.000	Reject

The null hypothesis is formulated on all three groups' performance, indicating no significant difference in operational efficiency and profitability. The ANOVA test was applied to examine whether the mean scores of all the parameters considered among the three groups were statistically the same or different. Some parameters indicate that there is no significant difference in the means of the three groups considered for the study, and some parameters reflect a significant difference between the means of public, private, and foreign sector banks. Since the mean score of all three groups is significantly different in some aspects, further conducted Tukey's simultaneous tests for differences of means to find which specific pair of groups means very different and how much they are different.

As per the Tukey Simultaneous test, if groups share a standard alphabet letter indicates that there is no significant difference between those two groups, and if they do not share a letter, there is a considerable difference. All the factors

considered for analysis are summarized below as per the statistical products of each parameter. The null hypothesis has been rejected as there is a significant difference among the three groups of banks considered for the study, and an alternative hypothesis is accepted.

Table:3 Tukey Simultaneous Tests for Differences of Means

Groups	Parameter	Mean	Difference of levels	P-Value	Results
All Foreign banks	GPTA	3.503	All Private - All Public s	0.000	Significant
All Private sector banks		2.6758	All Foreign - All Public s	0.000	Significant
All Public sector banks		1.7767	All Foreign - All Private	0.000	Significant
All Foreign banks	NPTA	8.356	All Private - All Public s	0.025	Significant
All Private sector banks		7.653	All Foreign - All Public s	0.001	Significant
All Public sector banks		6.573	All Foreign - All Private	0.000	Significant
All Foreign banks	IITA	1.6767	All Private - All Public s	0.000	Significant
All Private sector banks		1.3358	All Foreign - All Public s	0.000	Significant
All Public sector banks		0.328	All Foreign - All Private	0.245	Not significant
All Foreign banks	IETA	6.026	All Private - All Public s	0.987	Not significant
All Private sector banks		5.986	All Foreign - All Public s	0.000	Significant
All Public sector banks		4.132	All Foreign - All Private	0.000	Significant
All Foreign banks	NIIM	3.745	All Private - All Public s	0.000	Significant
All Private sector banks		3.1583	All Foreign - All Public s	0.000	Significant
All Public sector banks		2.3792	All Foreign - All Private	0.000	Significant
All Foreign banks	OITA	2.167	All Private - All Public s	0.001	Significant
All Private sector banks		1.7300	All Foreign - All Public s	0.000	Significant
All Public sector banks		1.0333	All Foreign - All Private	0.036	Significant
All Foreign banks	ROE	12.947	All Private - All Public s	0.175	Not significant
All Private sector banks		10.170	All Foreign - All Public s	0.680	Not significant
All Public sector banks		7.80	All Foreign - All Private	0.589	Not significant
All Foreign banks	CAR	17.227	All Private - All Public s	0.000	Significant
All Private sector banks		15.792	All Foreign - All Public s	0.000	Significant
All Public sector banks		12.237	All Foreign - All Private	0.022	Significant

The adjusted p-value identifies the group comparisons significantly differently while limiting the family error rate to the significance level. Generally, in post hoc tests, a simultaneous confidence level is used instead of an individual confidence level. The accompanying confidence level applies to the entire family of comparisons. Since the adjusted P-value is less

than α, the difference in all three pairs' means scores is statistically significant, using the family error 0.05. The mean scores of foreign banks are higher among all three groups of banks. These results show that foreign banks' performance is relatively good compared to public and private sector banks. The reasons for high profitability in foreign banks may be identified from the review of the literature are:

- Asset loss is minimal as a percentage of advances.
- Foreign bank presence may guide high profitability due to a strong technological competitive edge.
- Foreign banks might also have lower costs to raise funds if the advantage of newer technology can spread to domestic banks leading to higher profitability for the entire banking industry.

MANAGEMENT AND STATUS OF NON-PERFORMING ASSETS

The fundamental concept for assessing asset quality involves analyzing the composition of different assets within the asset mix and evaluating the proportion of Non-Performing Assets (NPAs) to total assets. According to prevailing asset classification norms, banks categorize their loan assets into two main categories: performing (standard) and non-performing. Non-performing Assets (NPA) are classified into substandard, doubtful, and loss support. The provided table presents the Gross and Net Non-Performing Assets (NPAs) as a percentage of advances and total assets for all three groups of banks over a 12-year reference period.

Table:4 Management and status of Non-performing assets

Banks	NPA Ratio	2007 -08	2008 -09	2009 -10	2010 -11	2011 -12	2012 -13	2013 -14	2014 -15	2015 -16	2016 -17	2017 -18	2018 -19
All Public Sector Banks		2.2	2	2.3	2.3	3.2	3.6	4.4	5	9.3	11.7	14.6	11.9
All Private Sector Banks	**GNPAs to Gross advances**	2.5	2.9	2.7	2.7	2.1	2	1.8	2.1	2.8	4.1	4.6	5.3
All Foreign Banks		1.9	4.4	4.4	2.6	2.8	3	3.9	3.2	4.2	4	3.8	3
All Public Sector Banks		1.3	1.2	1.3	1.3	1.9	2.4	2.9	3.2	5.9	7	8.9	7.3
All Private Sector Banks	**GNPAs to Total Assets**	1.4	1.7	1.5	1.3	1.1	1.2	1.1	1.9	2.2	2.6	4	3.5
All Foreign Banks		0.8	1.6	1.6	1	1.1	1.2	1.5	1.4	1.9	1.7	1.6	1.2
All Public	**NNPAs to Net**	1	0.9	1.1	1.1	1.5	2	2.6	2.9	5.7	6.9	8	4.8

Sector Banks	Advances											
All Private Sector Banks		1.7	1.5	1	0.6	0.5	0.5	0.6	0.9	1.4	2.2	2.4	2
All Foreign Banks		0.8	1.8	1.8	0.7	0.6	1	1.1	0.5	0.8	0.6	0.4	0.5
All Public Sector Banks		0.6	0.6	0.7	0.7	1	1.3	1.6	1.8	3.5	3.9	4.5	2.8
All Private Sector Banks	**NNPAs to Total Assets**	0.4	0.5	1	0.6	0.5	0.5	0.8	0.9	1.2	1.4	2	1.3
All Foreign Banks		0.3	0.7	0.7	0.3	0.2	0.4	0.4	0.2	0.3	0.3	0.2	0.2

(Source: Statistical tables relating to Banks in India, RBI)

The statistical observations of one-way ANOVA are indicated below:

The null hypothesis is formulated on the status and level of Non-Performing Assets of all three groups, showing no significant difference in quality. The ANOVA test was applied to test whether the mean scores of the three groups were statistically the same or different, and the following tables indicated statistical observations and hypothesis results.

Table:5 One-way ANOVA statistical observations

Sl. No.	Parameter	Pooled Standard Deviation	One-way ANOVA p-value $<\alpha$	Null Hypothesis Accept/Reject
1.	GNPAs to Gross Advances	2.73728	0.020	Reject
2.	GNPAs to Total Assets	1.70847	0.006	Reject
3.	NNPAs to Net Advances	1.52721	0.001	Reject
4.	NNPAs to Total Assets	0.862505	0.000	Reject

Based on the p-value presented in Table 5, the study concludes that no statistically significant difference is observed among the three banks groups regarding the proportion of Non-Performing Assets (NPAs) concerning gross advances and total assets. Based on the obtained results, the null hypothesis should be rejected at a significance level of 5%, as the calculated p-value is less than 0.05. Hence, a notable distinction exists among the three groups examined in the study regarding the ratios of Gross Non-Performing Assets (GNPAs) to Gross Advances (p=0.020), GNPAs to Total Assets (p=0.006), Net Non-Performing Assets (NNPAs) to Net Advances (p=0.001), and NNPAs to Total Assets (p=0.000). Therefore, based on the results, we can reject the null hypothesis and conclude that there is a statistically significant

difference among the NPAs of the three groups of banks. The table mentioned above also demonstrates that the average scores of public sector banks are comparatively higher than those of private and foreign sector banks.

Tukey Simultaneous Tests for Differences of Means:

Since there is a significant difference between the three groups of banks, Tukey simultaneously tests for the difference of means to find the pairwise difference accurately.

Table:6 Tukey pairwise comparisons

Groups	Parameter	Mean	Difference of levels	P-Value	Observation
All Foreign banks	GNPAs TO GROSS ADVANCES	6.04	All Private - All Public	0.025	Significant
All Private sector banks		3.433	All Foreign - All Public	0.065	Not significant
All Public sector banks		2.62	All Foreign - All Private	0.907	Not Significant
All Foreign banks	GROSS NPAs to TOTAL ASSETS	3.717	All Private - All Public	0.043	Significant
All Private sector banks		1.958	All Foreign- All Public	0.006	Significant
All Public sector banks		1.3833	All Foreign -All Private	0.691	Not Significant
All Foreign banks	NET NPAs TO NET ADVANCES	3.208	All Private-All Public	0.011	Significant
All Private sector banks		1.275	All Foreign -All Public	0.002	Significant
All Public sector banks		0.883	All Foreign -All Private	0.806	Not Significant
All Foreign banks	NET NPAs to TOTAL ASSETS	1.917	All Private-All Public	0.022	Significant
All Private sector banks		0.925	All Foreign -All Public	0.000	Significant
All Public sector banks		0.3500	All Foreign -All Private	0.246	Not Significant

According to the Tukey comparison results, a statistically significant difference exists between the means of all private and public banks and between the means of all private and all foreign banks. The absence of a shared letter among the groups suggests a notable distinction between them. Additionally, in cases where the range does not encompass zero, it can be inferred that there is a noteworthy difference between the means of the groups or pairs. Conversely, if the range includes zero, it indicates no significant difference between the mean scores. *indicates that the range does not include zero, and the difference between the mean scores of these pairs is significant. ** The confidence intervals for the remaining pairs of means all have zero, indicating that the differences between the mean scores are insignificant. The tables also show that the mean scores of foreign banks are high in all cases.

The table contains information demonstrating the patterns and movement of loan assets held by public, private, and foreign banks from 2007-08 to 2018-19, together with the average loan assets calculated for the reference period. It is clear from the data that the standard Assets account for a disproportionately large portion of the total Loan Assets throughout the 12 years. The pace of increase in non-performing assets (NPAs), including sub-standard assets, questionable assets, and loss assets, is negligible at this time, although the percentage of standard assets on gross loans is encouraging. It was found that private banks had the highest average standard assets reported (97.11 percent), followed by foreign banks (96.60 percent), and then public sector banks (94.02 percent).

Table:7 Status of loan assets as a percentage of Gross Advances (In percentages)

Bank	Classification of assets	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Average
All Public Sector Banks	Standard Assets	97.8	98	97.8	97.8	97	96.4	95.6	95	90.7	88.3	85.4	88.4	94.02
	Sub-standard Assets	1	0.9	1.1	1.1	1.6	1.8	1.8	1.9	3.4	3	3.5	2.2	1.94
	Doubtful Assets	1.1	0.9	0.9	1	1.2	1.7	2.3	2.9	5.5	8.4	10.2	8.2	3.69
	Loss Assets	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.9	1.2	0.37
All Private Sector Banks	Standard Assets	97.5	97.1	97.3	97.8	98.1	98.2	98.2	97.9	97.2	95.9	95.4	94.7	97.11
	Sub-standard Assets	1.4	1.8	1.4	0.6	0.5	0.6	0.6	0.7	0.9	1.4	1.2	1.3	1.03
	Doubtful Assets	0.9	0.9	1	1.3	1.1	1	0.8	1.1	1.6	2.3	3.2	3.7	1.58
	Loss Assets	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.2	0.3	0.29
All Foreign Banks	Standard Assets	98.1	95.7	95.7	97.5	97.3	97	96.1	96.8	95.8	96	96.2	97	96.60
	Sub-standard Assets	1.2	3.5	2.9	0.9	0.9	1.1	1.4	0.7	1.7	1.2	1.1	0.8	1.45
	Doubtful Assets	0.5	0.6	0.9	1.1	1	1	1.4	1.6	1.6	2.4	2.3	2	1.37
	Loss Assets	0.2	0.3	0.5	0.6	0.8	0.9	1	0.9	0.9	0.4	0.5	0.3	0.56

(Source: Statistical tables relating to Banks in India, RBI)

MOVEMENT OF NPAs

When the prudential standards were first implemented, one of the main things considered was the asset quality of loans and advances. The amount of past-due advances held by banks in India is growing, and as a direct result, the number of non-performing loans (NPAs) held by those institutions is also increasing. This is having a negative impact on the banks' capacity to remain profitable. Table -8 displays, for the years 2007-2008 through 2018-2019, information regarding the change in nonperforming assets (NPAs) held by public, private, and foreign banks. During the eleven-year time span that serves as the reference, fluctuations have been observed in both the additions and the deductions. Banks in India are taking the necessary measures to lower the amount of Net Non-Performing Assets (NPAs) each year. Every month, the amount added to NPA is a crucial indicator of how effectively credit risk is managed. Understanding the movement of nonperforming assets (NPAs) throughout the year in terms of additions and decreases in the number of NPAs is required to determine the quality of the assets. Since the development and profitability of businesses are directly correlated to the

efficiency with which NPAs are managed, the fact that additions are decreasing while reductions are increasing is a sign that asset quality management is becoming more successful.

Table:8 Movement of NPAs (Rs. in millions)

Bank	Bank	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
All Public Sector Banks	Opening Balance	388484	397605	449574	594344	749262	1178389	1660057	2272639	2784680	5399565	6192097	8400130
	Additions	240936	314592	448188	582270	931528	1198116	1643116	1778615	3859620	3275942	4881754	2167626
	Reductions	224897	260533	269517	371125	478924	654580	868485	756785	650288	822802	1338435	
	written off	0	2093	28972	58850	23477	71869	137951	509790	594448	819908	1295036	1833911
	Closing Balance	404523	454570	599273	746639	1178389	1650057	2282737	2784679	5399563	6847323	8956013	7395410
All Private Sector Banks	Opening Balance	91016	124380	168898	173409	182386	187678	210705	245424	333610	561874	932092	1849235
	Additions	6578	127384	148169	86855	98742	142426	193803	266799	428677	813660	1076805	905264
	Reductions	37602	49897	99941	54464	60382	78249	102761	98868	35155	236534	408034	427485
	written off	18	32601	40727	23394	32617	41150	56324	72292	119275	206907	307750	490977
	Closing Balance	129974	169266	176400	182406	187678	210705	245424	341062	561857	932027	1293352	1836037
All Foreign Banks	Opening Balance	22414	26384	64371	71336	50687	62966	79649	115556	107610	158052	136291	138495
	Additions	32299	81483	99440	35274	44937	41519	67957	40968	79627	66048	70195	61141
	Reductions	16969	28277	62998	55143	32622	24187	28082	29030	17896	36368	47358	25568
	written off	9150	15145	29477	779	36	527	3874	19884	11289	51441	20633	40480
	Closing Balance	28594	64445	71336	50687	62996	79771	115650	107610	158052	136291	138495	122423

Impact of NPAs:

NPA is an alarming obstacle to the growth of the banking sector and the country's economic growth in general. Therefore, an attempt is also made to examine the impact of NPAs (Gross and Net) on some of the profit and performance indicators observed among all public sectors, private sectors, and foreign banks. Out of all the factors, four performance indicators have been taken for studying the impact of NPAs. They are Net Profit, Interest, Return on equity (ROE), and Capital Adequacy ratio (CAR). To test the effect, pairwise correlation and multiple regressions have been used. Firstly, the pairwise comparison applied to the parameters considered for the study.

Table:9 Pairwise comparisons between Net NPAs to T.A., Net profit, Interest to T.A., and CAR

Variable	Net NPA to TA	ROE	CAR	Interest to TA	NP to T.A.
Net NPA to TA	1.0000				
ROE	-0.7253*	1.0000			
CAR	-0.5906*	0.1661	1.0000		
Int to TA	-0.0230	0.4643*	-0.4166*	1.0000	
NP to TA	-0.8919*	0.7141*	0.6501*	0.0815	1.0000

*Significant at 5% level

Pearson's correlation, r, shows the strength and direction of the association between variables. If the statistical results show positive values, it indicates a positive correlation between the variables. The 5% significance level statistical table results reveal a negative correlation between Net NPAs to ROE, CAR, Interest, and Net profit. That means there is an inverse relationship between variables. Therefore, it is clear that Net NPAs on the bank's performance. If Net NPAs increase, the banks' performance decreases, and vice versa.

Table:10 One-way ANOVA to test the difference significance across sectors

Source	S.S.	df	M.S.	F	Prob. > F
Between Groups	15.0738888	2	7.53694441	10.13	0.0004
Within Groups	24.5491669	33	.743914148		
Total	**39.6230557**	**35**	**1.13208731**		

Barlett's test for equal variance: Chi2 (2) = 35.3931 Prob>chi2 = 0.000

The above table indicates that the difference is significant across the sectors as the P-value is less than the ANOVA tabulated value (P< statistical value), i.e., 0.0004 > 35.3931. Therefore, there is a significant difference across the sectors at a 5% significance level.

The impact of NPA on profitability when CAR and Interest to T.A. are controlled

To examine the effect of NPA on profitability applied, multiple regressions on Net NPA to T.A. (Net NPAs as an independent variable), Net Profit to T.A. (Net Profit as a dependent variable), and also included other factors like capital adequacy ratio, return on capital assets and Return on Interest as these also considered to test the impact. All three sectors' banks were coded as =1 (Public sector), 2 (Private sector), and 3(Foreign banks), and examined the effect of NPAs on three groups, i.e., Public sector, Private sector, and Foreign Banks.

Table:11 Effect of NPAs on the Performance of Public Sector Banks

	Public Sector Banks		Private Sector Banks		Foreign Banks		The industry as a whole	
NPAs to TA	**Coefficient**	**p>l t l**	**Coefficient**	**p>l t l**	**Coefficient**	**p>l t l**	**Coefficient**	**p>l t l**
Lag NPAs to TA	-.3928859	0.008	-.1817346	0.313	0.2316368	0.424	-0.4264998	0.000
CAR	0.936638	0.395	.0369121	0.860	0.0735135	0.370	0.1300966	0.002
Interest to TA	0.2623684	0.206	.2884798	0.391	0.4959249	0.023	0.1828536	0.028
Constant	-2.159631	0.403	-1.466737	0.808	-2.951912	0.270	-1.7659900	0.116

The above table is related to the impact of NPAs, indicating that the P-value is less than 0.01, i.e., p-value <0.01 for lag net NPA _T.A., t-value=-3.64, and significant. Therefore, reject the null hypothesis, and establish that there is a substantial impact of NPAs on profitability. And other variables CAR and Interest to total assets, indicate no significant effect of NPAs as the p-value in both cases is more significant than 0.01(p-value 0.395>0.01, 0.206>0.01). So results state that the impact of NPAs exists only on profitability in the case of public sector banks. A negative correlation is observed as it indicates that if NPAs increase, profits will decrease. Dr. Anshu Tyagi et al. (2020) found the same in their study.

In private sector banks, it is found that there is a negative correlation (-0.1817346), which means if NPAs decrease, profits increase, and vice versa. In terms of P-value, it is more than 0.05 (p-value>0.05), indicating to accept the Null hypothesis. It can be concluded that there is no significant impact of NPAs on the performance of the banks.

In India's foreign investment context, the observations suggest a statistically significant negative correlation (-0.1817346). This implies an inverse relationship between non-performing assets (NPAs) and profits. Specifically, when NPAs decrease, profits tend to decline, and vice versa. A significant correlation exists between non-performing assets (NPAs) and the performance of foreign banks. The obtained p-value, which exceeds the significance level of 0.05 (p-value>0.05), suggests insufficient evidence to reject the null hypothesis. Based on the available evidence, it can be inferred that the presence of non-performing assets (NPAs) does not substantially influence the overall performance of banks. However, when considering the interest of the T.A., it is observed that the p-value is less than 0.05, suggesting a significant influence of NPAs on the level of interest.

In the case of the banking industry as a whole, NPAs affect the banks' performance, and the above results also indicate a negative coefficient and give strength to the study. Accordingly, NPAs affect banks' profitability even after controlling for CAR and Interest income. And P-value also recorded less than 0.05, so there is a significant impact of NPAs on the performance of the banking industry as a whole.

Findings of the study

- The mean scores of GPTA and NPTA were highest in foreign banks (3.503 and 1.6767) compared to Public and private banks. And the mean scores of IITA were recorded most elevated in the case of private sector banks (8.356), but the mean scores of IETA were also recorded highest in private sector banks (6.026) only.

- The mean scores of NIIM, OITE, and CAR are highest in foreign banks (3.745, 2.167, and 17.227), and the second highest are private banks with 3.1583, 1.7300, and 15.792, respectively. But in the case of ROE, the mean scores of private sector banks showed the highest compared with public and private sector banks. The over-performance of foreign banks indicates a better position.

- The mean scores of Gross NPAs to Gross Advances, Gross NPAs to T.A., Net NPAs to Net Advances, and Net NPAs to T.A. were recorded as highest in public sector banks compared to private and foreign banks. This is an alarm condition for public sector banks to minimize their NPAs and strengthen the loan recovery system.

- Regarding the quality of assets, the average standard assets were highest in private sector banks (97.11), followed by foreign and private sector banks. The highest average score of substandard and doubtful assets is recorded in the case of public sector banks (1.94 and 3.69), and the highest average of loss assets is recorded in the case of foreign banks.

- The impact of NPAs on performance also has been studied, and observed a negative correlation in all three groups' banks. It indicates that if NPAs increase, profits decrease, and vice versa. So it can be concluded that NPAs also impact banks' efficiency and performance.

Conclusion

The banking sector faces many challenges and risks due to an increasing borrower base, technological changes, and business environment. Still, on the other side, the government and RBI have taken many measures to improve the profitability and efficiency of banks by formulating new economic policy initiatives, economic liberalization, and globalization. But still, some of the failures cannot be wholly ruled out immediately; over some time, these may be resolved. RBI and the government of India need to be a little more decisive in policy formulation and implementation.

Implications and Suggestions

- As per the study's observations, it is clear that the public sector banks' operational efficiency is less compared to foreign banks in Indian and private sector banks. Therefore, public sector banks should focus more on reducing their Non-performing assets as it may badly impact their operational efficiency.

- The size and trend of NPAs indicate immediate reformatory developments so that the issues with NPAs may be accommodated. Hence, besides the recovery of NPAs, banks should also focus on minimizing the level of NPAs, especially public sector banks.

- Since the problem of NPAs has been increasing, it has to be addressed at two interdependent levels. Undoubtedly, a banker will be successful when he can reduce or manage well. Therefore, it can be done (1) by formulating procedures and policies focusing on new additions and reductions yearly. (2) at the second level, needs to formulate reforms firmly to focus on the chances and volume of future occurrences of NPAs.

- Many enactments related to NPA took place in 1992 at the time of financial reforms made by the government of India to strengthen the economy after the economic collapse. But these did not serve the purpose and were out of tune with some of the cases. In this complex business scenario, it is essential to amend provisions of NPAs and enact new laws to bridge the gaps in the banking sector as a whole. 2016 the insolvency and bankruptcy board was established under the IBC 2016 to oversee these problems.

- As per banking statistics, 701 cases related to NPAs have been registered, out of which 176 were resolved as of March 2018 under the mechanism of IBC. These results showed a need to strengthen the overall system to build a solid technical and operational tool, especially for the loan sanctioning process. It also required steps to enhance the Enactment of the Revenue Recovery Act, comprehensive DRT Act, revision in sick industrial companies Act (SICA), and BIFR. And there is a need for special attention on strengthening Rehabilitation and Recovery Branches (RARBs) to manage NPAs better.

- According to the provisions outlined in the Insolvency and Bankruptcy Code (IBC), a specific time frame of 180 days is allotted for recovery in cases where borrowers cannot fulfill their financial obligations. However, it remains a robust and efficient credit monitoring system. There is a necessity for implementing a comprehensive financial reporting system that integrates non-performing assets (NPAs) within banking institutions. The Management Information System (MIS) should elucidate the interconnectedness among the Non-Performing Assets (NPAs) levels, costs, collections, and disbursements to enhance managerial decision-making in NPA management.

Further Research:

A literature review reveals that academicians, institutions, researchers, and committees have conducted several studies on the banking sector. Analyzing the performance of banks has always been a popular research subject. Several theoretical and empirical studies have reviewed the issues with Non-performing assets. Many researchers have conducted many studies on theoretical aspects of NPAs, classification, NPAs impact, reasons for increasing and measures taken by the banking sector, etc. Also, specific studies about NPAs focusing on individual banks were reviewed. But no rigorous or specific empirical studies were carried out on the perceptions, problems and challenges of employees who have been dealing with banks' asset management. And also, research can be carried out to identify appropriate legal systems and their implications.

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