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ANALYSIS OF THE EFFECT OF THE NON-PERFORMING ASSETS ON THE PROFITABILITY OF THE PUBLIC SECTOR BANKS

SHAIK YASMIN NAAZ, Symbiosis Institute of Management Studies, Symbiosis International (Deemed University), Range Hills Road, Khadki, Pune,411020, Maharashtra, India

ABSTRACT- After the first phase of economic liberalisation, the Indian banking industry underwent a significant change, and the role of credit management became widely recognised. The banks have become more cautious and careful when lending money to borrowers because of the rising number of non-performing assets. This study makes an effort to comprehend the reasons for an asset to become a non-performing asset (NPA) and various corrective steps that can be taken to reduce the amount of NPA in banks. The purpose of this study is to analyse the effect of non-performing assets (NPAs) on the profitability of public sector banks (PSUs). Non-performing assets (NPAs) are the most pressing issue that the banks face today, and they are not only a liability for the banks but a challenge for the entire financial system. Rising non-performing assets (NPAs) have an impact on operating performance, which eventually has an impact on the bank's profitability, liquidity and solvency. The rising number of non-performing assets (NPAs) puts a strain on fund recycling and limits banks' ability to lend further, resulting in lower interest income. NPAs must be reduced and regulated in order for banks to improve their performance and profitability. This study attempts to determine the relationship between NPAs and bank's profitability, taking into account major public sector banks that are dealing with the mounting NPAs.With the aid of the RBI, banks are now taking proactive steps to manage non-performing assets. To boost bank profitability, the level of NPA must fall, and banks must take various steps to achieve this.

Keywords: non-performing assets (NPAs), public sector banks (PSUs), economic liberalisation

I. INTRODUCTION

Non-performing assets are almost always an inevitable liability in the banking industry. The methods used to handle non-performing assets (NPAs) and hold them within the necessary amount are vital to the banks' success. As a result, the only way to regulate the amount of NPAs in banks is to prepare and implement an efficient monitoring and control policy that is backed up by proper legal reforms.

According to the Reserve Bank of India, "An asset becomes non-performing when it ceases to generate income for the bank. Earlier an asset was considered as non-performing asset (NPA) based on the concept of 'Past Due'. A 'non-performing asset' (NPA) was defined as credit in respect of which interest and/or instalment of principal has remained 'past due' for a specific period of time."

CATEGORIES OF NPAs

Non-performing assets are categorised by banks into three depending on the amount of time the asset has been non-performing:

1. SUBSTANDARD ASSETS

An asset is called a substandard asset when the loan or advance has been non performing for less than or equal to 18 months.

2. DOUBTFUL ASSETS

An asset is called a doubtful asset when it has been in the non performing for more than 18 months. They have a higher level of risk than substandard asset.

3. LOSS ASSETS

An asset is called a loss asset when the bank or internal or external auditors or the inspection by the RBI identifies the loss, but it still has not been written off.

FACTORS CONTRIBUTING TO NPAs

i. Recession, power and input shortages, inflation, injuries and natural disasters contribute to default in the payment of past dues.
ii. Poor market research, hasty borrowers' financial analysis, and inadequate credit worthiness measurement processes and banks failing to perform follow-up procedures along with their defective regulation mechanism for loan documentation.
iii. The government policies that have been adopted/implemented such as excise duty reforms, emission control, priority sector lending, and obsolete legal structures.
iv. When funds are used for expansion or activities that require upgrade by launching new ventures, this is compounded by recessionary conditions, strained labour relations, inappropriate infrastructure, obsolete equipments and products, technological issues, inept management and the inability to access needed funds in the capital and debt markets.
v. Intention to default, syphoning off funds, promoter fraud and misappropriation, and director disagreements and inadequacies on the part of banks, such as delays in disbursing funds and the government's release of subsidies.

CAUSES OF NPA

Following are the various factors that contribute to non-performing assets:

i. Banks' Lending Activities: When it comes to lending loans, banks can strictly follow the laws and regulations. An effective and efficient estimate of credit worthiness of the borrowers should be made. The banks' poor lending practises were blamed for the subprime crisis of 2008.
ii. Organizational Risk: The organisation periodically runs into difficulties in its environment where it operates, which leads to financial loss.
iii. Risks related to environment: Natural calamities such as cyclones, droughts, earthquakes, and floods may place farmers and agribusinesses in situations where they don't get the yield they need.
iv. The Borrower's Psychology: Occasionally, the individual's attitude prevents him from repaying the money, even though he is capable of doing so.

PROBLEMS CAUSED BY NPAs

i. Profitability: The banks generate income from the loans and advances they give out to customers, and when these loans are not repaid, the banks lose money because they can only make money when the loans/advances are repaid.
ii. Liquidity and Goodwill: As a result of the banks' decreased profitability, they are not able togive out loans freely, which affects their liquidity status and, as a result, their goodwill.
iii. Economy: The banking industry is extremely important to the growth of a nation's economy. It is the cornerstone of a country's financial capital. As a result, if a bank's performance suffers as a result of a rise in non-performing assets, the country's economy suffers as well.

REASONS FOR RISE IN NPAs

i. The Indian economy was booming from 2000 to 2008, when banks, especially public sector banks, began advancing loans heavily to businesses.
ii. However, because of the financial crisis of 2008-09, profits of the companies plummeted, and the government outlawed mining ventures. With significant delay in permits related to environment, the situation worsened, affecting the infrastructure sector – electricity, iron, and steel – and resulted in raw material price variations and a supply shortage.
iii. Another reason is that banks have relaxed lending standards, particularly when it comes to large companies, enabling them to bypass financial and credit review.

NPAs IN INDIAN BANKING SYSTEM

Non-performing assets (NPAs) appeared unexpectedly in the Indian banking system. The Indian banking system lacked objective and realistic business processes. Negative outcomes resulted from political influence, lack of competition, and a complete lack of scientific decision-making. Inadequate accounting practises and impervious balance sheets were used to hide the inadequacies, which failed to expose the country's financial institutions' progressive decline and institutional vulnerability to the public eye. Ravi Agrawal writes, "Reforms have brought the Indian banking sector well ahead of the days of nationalisation." He argues that the root cause of the NPA was present both within and outside the

banking system. He claims that banks eventually had to fund the losses suffered by critical industries and companies. The problem of nonperforming assets (NPAs) unexpectedly exploded in size, and banks were unable to examine it. The crisis was caused by our banking system's lack of preparation and systemic weakness to respond to the evolving scenario. It has compiled comprehensive data on nonperforming assets (NPA) in a number of financial industries, including commercial banks, financial institutions, urban cooperatives, and nonbank financial companies (NBFCs), among others. The real social banking is represented by advances to the poorer parts of society below Rs. 25,000. NPAs in this sector account for 8 to 10% of the total number. As a result, NPA regulation will be automated by a sector-by-sector approach that includes a function for actively participating members. It is the duty of both business and industry to acknowledge transparency for NPA management. NPA is a pervasive national hazard that has an impact on the whole Indian economy. The government incurs loss of revenue in the form of taxation and excise due to the closing of many lakhs of once-thriving manufacturing units and inefficient use of expensive industrial infrastructure. In the end, it reflects industrial uncertainty, writes Ravi Agrawal. The NPA represents credit recipients' debts, which are then moved and parked with the ban. To be reliable, preventive action should begin with credit receivers and then spread to bankers. We should not attempt to fix business and banks; instead, we should assist industry and banking.

PRESENT SCENARIO

In July 2020, 12 public-sector banks had total non-performing assets (NPAs) of Rs 5.47 lakh crore, which was significantly more than double the bad-loan pile of the 19 private banks. Since the fourth quarter figures haven't been published, the actual estimate of bad assets in PSBs is projected to be higher. Indian Bank and Canara Bank being the exceptions, rest of the PSBs had a decrease in absolute GNPA figures. The total non-performing assets (NPAs) of State Bank of India (SBI) decreased by 6.6%, while those of Bank of Baroda (BoB) decreased by 5%. The worldwide pandemic and the lockdowns that were imposed would mostly escalate the burden on the banks, so this pattern does not persist beyond FY21. According to analysts, the pandemic could result in a new cycle of bad loans in the Indian banking sector.

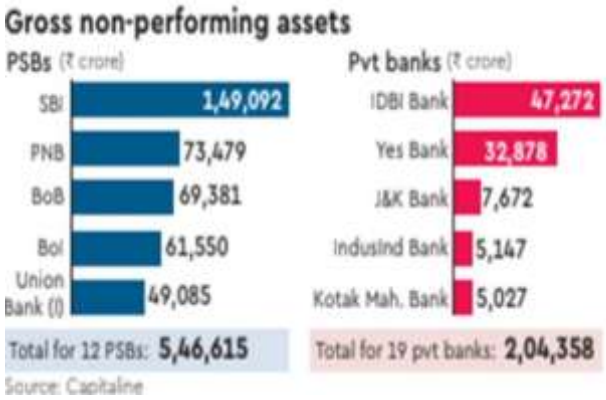

FIGURE 1: GROSS NON-PERFORMING ASSETS

NPAs increased sequentially at 2 PSBs, Indian Bank and Canara Bank. In the fourth quarter of FY20, gross non-performing assets (NPAs) at Indian banks increased by 2% to Rs 14,176 crore. Indian Bank has been placed on credit watch by S&P Global Ratings due to worsening operating conditions. With respect to increase in the bad loans, some private banks have had a rough year too.

II. LITERATURE REVIEW

Balasubramaniam, C. S. (2012), conducted research to examine the emerging challenges around non-performing assets and commercial bank profitability in India. The research paper investigated the trajectory of bank non-performing assets (NPA) over the last decade, beginning in 2000, in light of recent developments. The importance of this study stemmed from the RBI's plan to adopt Basel III requirements in the banking sector starting in January 2013. The researcher examines the effect of nonperforming assets (NPAs) on bank performance and financial soundness, as well as a pattern study of NPAs. The researcher also seeks to work out how bank advances are restructured based on asset classification. According to the results, both banks have a large degree of nonperforming assets (NPAs), which can be minimised using sound credit appraisal processes and efficient internal control structures.

Ganesan, D., &Santhanakrishnan, R. (2013), piloted a study of the Non-Performing Assets of the State Bank of India. According to the report, the magnitude of non-performing assets (NPA) is higher in public

sector banks. NPAs must also be regulated and reduced, according to the researcher, in order for banks to increase their productivity and profitability. This paper discusses the factors that cause an asset to become a nonperforming asset (NPA) and the different strategies that can be used to reduce NPA levels to acceptable levels.

Kiran, K. P., & Jones, T. M. (2016), conducted a selective analysis to gauge the correlation between non-performing assets (NPAs) and bank profitability, as well as the relation between NPAs and bank net income. According to the findings, all other banks, except SBI, have a negative correlation between their Gross Non-Performing Assets and Net Profits. Nonetheless, the study's results show that big banks are able to sustain losses due to non-performing assets (NPAs), whereas small banks are unable to rebound. As a result, the researcher emphasises the importance of the banking sector focusing on efficient control of nonperforming assets (NPAs) in order to improve profitability.

Roy, P., &Samanta, P. K. (2017), published a report on Non-Performing Assets in India's public sector banks. This paper explores whether Gross Non-Performing Assets (GNPA) has a bearing on the chosen banks' Net Profit over five years. The researcher discovered that Total Non-Performing Assets (GNPA) and Net Profit were inversely correlated, and that GNPA was a significant factor in the inverse shift in Net Profit. Furthermore, the researcher found a strong negative correlation between GNPA and Net Income, which was worrying. In 2015-16, the majority of the bank's earnings was lost due to a spike in NPAs. To retain consumer confidence, the researcher advises that banks be careful when giving loans, that loan recovery processes be made stricter, and that all banks adhere to transparency in disclosure norms.

Kumar, A., Prof., & Ghani, U. (2015), examined the viability and non-performing assets of India's Scheduled Commercial Banks. According to the findings, there's a decreasing pattern in the NPA ratios as GNPAs and NNPAs, as well as a strong amount of adverse association between NPA Ratios and Return on Assets. NPAs, the researcher concludes, are inevitable and cannot be fully excluded. As a result, good management is needed to reduce the effects of NPAs and hold them to a bare minimum by effective corrective action taken at the appropriate time.

Rajput, N., Gupta, M., & Chauhan, A. K. (2012), investigated the viability and credit culture of Indian commercial banks' non-performing assets. This paper attempts to examine how banks' performance has improved in a specific direction, which may be helpful in controlling and formulating policies. According to the results, there is a detrimental association between profitability and nonperforming assets (NPAs). The researcher came to the conclusion that the ratios are declining. The researcher came to the conclusion that the percentages of non-performing assets (NPAs) are declining, and that variables such as a stronger lending culture and risk control would help minimise NPAs.

Mehta, L., & Malhotra, M. (2014), published an observational study of Non-Performing Assets involving private banks in India. The study's goals were to examine and research the flow of nonperforming assets (NPAs) from 2004 to 2012, as well as the impact of priority sector loans on overall NPAs at public sector banks. NPAs, according to the writer, are a danger to the Indian economy and banks. Due to the high pressure of the slowdown on Indian banks, NPAs have been rising. The results indicated that priority sector lending has a major effect on private sector banks' GNPA.

Singh, V., R. (2016), studied the rehabilitation of non-performing assets owned by Indian commercial banks. According to the findings, the number of GNPAs has risen significantly over the last 14 years. During the period 2008-2014, the LokAdalat, DRTs, and SARFAESI Act both assisted in the recovery of NPAs. Unsuccessful recovery, wilfulevasions, and a flawed advancing mechanism are the main causes of the increase in NPAs in banks. The degree of nonperforming assets (NPA) in public sector banks is comparatively high, according to this report. According to the researcher, bank management should expedite the process of retrieval, and the government should make arrangements for quicker resolution of outstanding debts.

Rana, P. (2016), looked at the non-performing assets of India's public sector banks. The key goal of this research is to gauge the aggregate performance of Indian public banks in terms of NPAS. The researcher concludes that NPAs are steadily growing in India's public sector banks, with the percentage share of NPAs in both the priority and non-priority sectors increasing. According to the researcher, banks must conduct adequate credit worthiness assessments of borrowers in order to minimise the number of nonperforming assets (NPAs). Credit assessment and performance measurement approaches can now be applied so that borrowers' creditworthiness can be assessed in a variety of ways.

Narayanan, B. B. S., & Surya, R. (2014), completed a report on non-performing assets in Indian Banks. The study's goals are to determine the causes that trigger bad loans and to measure the effect of non-performing assets on Indian banks' financial performance. The report also makes recommendations for successful debt repayment and management of non-performing assets. The researcher discovered a number of reasons that contribute to bad loans, including India's economic downturn. He also found that the average GNPA ratio for Indian banks over the last six years was 1.30 percent, suggesting that there has been no substantial growth in bank NPAs in the last five to six years. He discovered different pattern values for NPAs that could be written off for the respective years, as well as a significant gap in the operating income of Indian Bank before and after the bad debts were written off. This shows that the Indian Bank's net earnings have been affected by bad loans written off for the last 5 years, and that there has been no substantial growth in Indian Bank's over the last five years from 2008 to 2012.

Rajput, N., Arora, A. P., & Kaur, B. (2011), conducted a report that tracks the flow of non-performing assets in Indian public sector banks by analysing the banks' financial results in terms of main performance metrics and NPA management under the RBI's current policy acts and regulations. According to the report, Indian Public Sector Banks have historically retained Capital Adequacy Ratios above the RBI standard of 90/0 and the Basel II norm of 8%. The consistency of loans in Indian public sector banks has deteriorated over time as a result of the banks' hostile lending policies. The global downturn of 2008-09 resulted in a significant rise in FY 2010. As a result, the government needed to step in to avoid the manipulation of flexible loan policies.

III. RESEARCH METHODOLOGY

OBJECTIVES OF THE PAPER

i. To comprehend the context of Non-Performing Assets (NPAs) in relation to India's public sector banks.
ii. To investigate the effect of Gross Non-Performing Assets (GNPAs) on the profitability of India's public sector banks (PSBs).
iii. To make proposals for reducing Non-Performing Assets (NPAs) in public sector banks.

STATEMENT OF THE PROBLEM

Profitability is used as a criterion for evaluating the success of every commercial organisation, including the banking sector. Rising Non-Performing Assets, on the other hand, has a substantial effect on bank's profitability. Therefore, the purpose of this research paper is to determine the effect of Non-Performing Assets on the profitability of the public sector banks.

SCOPE OF THE STUDY

In terms of branch extension, deposits, and loans to target sectors, public sector banks lead the banking industry. As a result, the current study's coverage is restricted to Public Sector Banks, as it would not be practical to include all the banks. As a result, the focus of this research is on the study of public sector banks. The aim of this analysis is to define and assess the effect of nonperforming assets (NPAs) on the profitability of India's existing 12 public sector banks over a 10-year term, from 2011 to 2020.

SAMPLE SIZE

The sample size for this research study is 12 Public Sector Banks as stated below.

TABLE 1. SAMPLE SIZE OF THE STUDY

S. No.	PARTICULARS
1.	Bank of India
2.	Bank of Baroda
3.	Bank of Maharashtra
4.	Canara Bank
5.	Central Bank of India
6.	Indian Bank
7.	Indian Overseas Bank
8.	Punjab and Sind Bank
9.	Punjab National Bank
10.	State Bank of India
11.	UCO Bank
12.	Union Bank of India

SOURCE: www.rbi.org.in

HYPOTHESIS

H_0: Statistically, there is no significant effect of GNPA on Profitability of the public sector banks.

H_1: Statistically, there is a significant effect of GNPA on Profitability of the public sector banks.

METHOD OF DATA COLLECTION

The information gathered is secondary in nature, as the report is focused on secondary data on Non-Performing Assets held by public sector banks, such as State Bank and its affiliates, as well as other nationalised banks. The data was obtained over a ten-year period, from 2011 to 2020. The knowledge was gathered from various Reserve Bank of India, statistical tables, journals and papers.

STATISTICAL DESIGN

This study is causal in nature as the purpose of the study is to analyze that there is a relationship between Gross Non-Performing Assets and Net Profits of a bank. The data gathered is analysed using various statistical methods and SPSS Software to evaluate the effect of GNPA on profitability of the banks.

Where,

GNPA = Independent Variable

Net Profit = Dependent Variable

The various statistical tools are:

1. Correlation Coefficient:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

2. Regression Analysis:

The regression equation is as follows:

$$Y = a + b_1 x_1 + \mu$$

$$a = \frac{(\sum y)(\sum x^2) - (\sum x)(\sum xy)}{n(\sum x^2) - (\sum x)^2}$$

$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

3. F –Test

F-test was used to measure the importance of total multiple regression models.

The F-test was used to determine the importance of individual regression coefficients at 0.05 levels of significance.

4. T-Test

$$t = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

5. P Value

If the null hypothesis is valid, the p value of a measurement is the likelihood of having an outcome at least as extreme as the one that is currently observed.

IV. DATA ANALYSIS

TABLE 2. YEAR WISE NET PROFIT OF BANKS (Rs. in Cr)

Years	BOI	BOB	BOM	Canara Bank	Central Bank of India	Indian Bank	IOB	Punjab & Sind Bank	PNB	SBI	UCO Bank	Union Bank of India
2011	2488.71	4,419.20	334.8	3,877.49	1,114.75	1,728.15	1,072.54	526.17	4,515.59	11,179.94	906.54	2,069.03
2012	2674.62	5,216.29	436.81	3,247.27	546.41	1,746.59	1,050.13	451.28	4,974.81	15,973.30	1,108.67	1,755.75
2013	2741.19	4,750.48	769.09	2,951.83	1,030.12	1,581.85	567.23	339.22	4,927.24	18,322.99	618.19	2,131.15
2014	2732.65	4,931.24	398.61	2,589.52	-1,251.66	1,159.61	601.74	300.63	3,534.62	14,489.47	1,510.54	1,669.56
2015	1748.33	3,832.69	464.63	2,858.02	618.30	1,013.46	-454.33	121.35	3,341.42	17,517.37	1,137.80	1,757.46
2016	-6334.97	-5053.09	118.19	-2,670.29	-1,406.17	714.52	-2,897.33	335.97	-3,663.27	12,743.28	-2,799.25	1,342.89
2017	-1593.75	1777.41	-1,356.09	1233.61	-2441.88	1412.91	-3,416.74	201.08	901.13	-390.67	-1,850.67	566.75
2018	-6072.87	-1912.06	-1,112.03	-4,087.32	-5,095.57	1,262.92	-6,299.49	-743.8	-12,584.33	-4,187.41	-4,436.37	-5,220.64
2019	-5497.42	1087.07	-4,763.25	547.14	-5627.72	320.93	-3,737.88	-543.48	-10,026.41	3069.07	-4,321.09	-2,933.41
2020	-2929.41	942.18	389.32	-2,022.51	-1,127.31	758.08	-8,527.40	-990.8	363.34	18,176.83	-2,436.83	-3,040.83

SOURCE: www.moneycontrol.com

TABLE 3. YEAR WISE GROSS NON-PERFORMING ASSETS OF BANKS (Rs. in Cr)

Years	BOI	BOB	BOM	Canara Bank	Central Bank of India	Indian Bank	IOB	Punjab & Sind Bank	PNB	SBI	UCO Bank	Union Bank of India
2011	4829.68	3,152.50	1,173.70	3,180.03	2,394.53	777.68	3,089.59	424.28	4,379.39	25,326.29	3,150.36	3,622.82
2012	5913.61	4,464.75	1,297.03	4,121.67	7,273.46	1,892.11	3,920.07	763.44	8,719.62	39,676.46	4,086.20	5,449.86
2013	8778.19	7,982.58	1,137.55	6,355.92	8,456.18	3,606.43	6,607.96	1,536.90	13,465.79	51,189.39	7,130.09	6,313.83
2014	11883.61	11,875.90	2,859.85	7,700.17	11,500.01	4,603.07	9,020.48	2,553.52	18,880.06	61,605.35	6,621.37	9,563.72
2015	22214.68	16,261.45	6,402.06	13,173.61	11,873.06	5,695.84	14,922.45	3,082.19	25,694.86	56,725.34	10,265.05	13,030.87
2016	50278.14	40,521.04	10,385.85	31,852.34	22,720.88	8,860.48	30,048.63	4,229.05	55,818.33	98,172.80	20,907.73	24,170.89
2017	52254.33	42718.70	17188.71	34,406.74	27,251.33	9,893.29	35,098.25	6,297.59	55,370.45	1,12,342.99	22,540.95	33,712.28
2018	62410.28	56,480.39	18,433.23	47,698.53	38,130.70	12,020.21	38,180.15	7,801.65	86,620.05	2,23,427.46	30,549.92	49,369.93
2019	60739.57	48232.77	15324.49	39,444.03	32,356.04	13,383.30	33,398.12	8,605.87	78,472.70	1,72,750.36	29,888.33	49,171.46
2020	61625.44	69,381.43	12,152.15	37,250.53	32,589.08	14,175.88	19,912.70	8,874.57	73,478.76	1,49,091.85	19,281.95	49,085.30

SOURCE: www.moneycontrol.com

TABLE 4. COMPREHENSIVE TABLE OF ANALYSIS

S.NO	BANK	R	R^2	F-TEST	T-TEST	P VALUE	SIGNIFICANCE	H_0
1	BANK OF INDIA	-.923[a]	0.852	45.912	-6.776	.000[b]	Significant	Rejected
2	BANK OF BARODA	-.716[a]	0.512	8.407	-2.900	.020[b]	Significant	Rejected
3	BANK OF MAHARASHTRA	-.645[a]	0.416	5.700	-2.388	.044[b]	Significant	Rejected
4	CANARA BANK	-.875[a]	0.766	26.252	-5.124	.001[b]	Significant	Rejected
5	CENTRAL BANK OF INDIA	-.863[a]	0.745	23.322	-4.829	.001[b]	Significant	Rejected
6	INDIAN BANK	-.761[a]	0.580	11.026	-3.321	.011[b]	Significant	Rejected
7	INDIAN OVERSEAS BANK	-.733[a]	0.537	9.292	-3.048	.016[b]	Significant	Rejected
8	PUNJAB & SIND BANK	-.897[a]	0.804	32.918	-5.737	.000[b]	Significant	Rejected
9	PUNJAB NATIONAL BANK	-.873[a]	0.762	25.637	-5.063	.001[b]	Significant	Rejected
10	STATE BANK OF INDIA	-.692[a]	0.479	7.353	-2.712	.027[b]	Significant	Rejected
11	UCO BANK	-.966[a]	0.933	111.784	-10.573	.000[b]	Significant	Rejected
12	UNION BANK OF INDIA	-.920[a]	0.847	44.215	-6.649	.000[b]	Significant	Rejected

SOURCE: SPSS OUTPUT

INTERPRETATIONS

To analyse, gauge and evaluate the effect of Gross Non-Performing Assets (GNPA) on Net Profit of Public Sector Banks (PSBs) correlation coefficient, regression analysis, P Value, T-test, and F-test were used.

The Hypothesis was tested by comparing the P values to the essential values for each bank separately. Normally, T values are used for comparison but, where a linear regression is determined, the P values must be used when selecting a hypothesis.

CORRELATION COEFFICIENT

It measures the strength and direction of a relationship between two variables. The value of ***'r'*** lies between ***+1*** and ***- 1***.

- **Strength:** It can be somewhere between ***-1*** and ***+1***. The relationship between the two variables is better when the absolute value of the coefficient is greater.
- **Direction:** The direction of the relationship is shown by the sign of the coefficient. The coefficient is positive if all factors have a tendency to rise or decrease at the same time. The coefficient is negative if one variable continues to rise while the other decreases.
- **Significance:**The p-value is equated to the degree of significance to decide if the relationship between variables is significant. The significance level in this analysis is 0.05. (denoted as ∝or alpha). A ∝ of 0.05 means that there is a 5% probability of assuming that there is a connection when there isn't one. The p-value indicated when the correlation coefficient is slightly different from 0, since a correlation coefficient of 0 specifies non-existence of a linear relationship.

- P-value ≤∝ : Significant correlation
- P-value >∝ : Insignificant correlation

Thus, we can observe from Table 4. that correlation coefficient of all the banks is between -0.645 and -0.966 which lies in the range of -1 and +1. This points out that there is a higher degree of correlation. Hence, we can interpret that there is a relationship amongst both the variables, GNPA and Net Profits. The closer the value is to 1, stronger is the relationship amongst the two variables and closer the value is to zero, weaker is the relationship amongst the two variables. Therefore, we can conclude that all the 12 public sector banks have a moderately negative relationship between their Net Profits and Gross Non-Performing Assets, which means that increase in one variable leads to a subsequent decrease in the other.

The R^2 value indicates how much the predictor variable *(GNPA)* can explain the total variation in the criterion/response variable *(Net Profits)*. From the Table 4. we can observe that except Bank of Maharashtra and State Bank of India, all the other 10 public sector banks' total variation in Net Profits of more than 50% can be explained by their Gross Non-Performing Assets.

REGRESSION ANALYSIS

The statistical relationship between one or more predictor variables and the outcome/criterion/response variable is known as regression analysis. The absolute change in the response variable for one unit of change in the predictor variable while retaining other predictors in the model constant is denoted by regression coefficients.

TABLE 5. REGRESSION EQUATIONS

S.NO	BANK	REGRESSION EQUATION
1	BANK OF INDIA	Y = 3883.017 - 0.143 X
2	BANK OF BARODA	Y = 5019.65 - 0.10 X
3	BANK OF MAHARASHTRA	Y = 914.663 - 0.156 X
4	CANARA BANK	Y = 4096.155 - 0.144 X
5	CENTRAL BANK OF INDIA	Y = 1849.773 - 0.165 X
6	INDIAN BANK	Y = 1726.111 - 0.074 X
7	INDIAN OVERSEAS BANK	Y = 1259.824 - 0.178 X
8	PUNJAB & SIND BANK	Y = 664.701 - 0.151 X
9	PUNJAB NATIONAL BANK	Y = 7103.346 - 0.178 X
10	STATE BANK OF INDIA	Y = 19368.844 - 0.088 X
11	UCO BANK	Y = 2317.137 - 0.218 X
12	UNION BANK OF INDIA	Y = 3107.856 - 0.127 X

SOURCE: SPSS OUTPUT where, Y = Dependent variable (Net Profits) and X = Independent Variable (GNPA)

P VALUE

The p-value indicates whether the regression model envisages the dependent variable significantly or not. It tests the null hypothesis whether there is no substantial effect of GNPA on the Net Profits of the banks. A p-value < 0.05 specifies that the null hypothesis is not true and hence, can be rejected. A low p-value would indicate that the regression model can significantly predict the dependent variable and that it is a good fit.

From the Table 4. we can observe that all 12 public sector banks have a p-value which is less than 0.05. Therefore, we can conclude that the regression model significantly predicts the dependent variable and the null hypothesis which says that there is no significant effect of GNPA on the Net Profits of the banks is rejected.

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V. FINDINGS AND DISCUSSIONS

i. It can be observed from the Table 3, that there has been a steep rise in the NPAs of Public Sector Banks since 2014. However, it wasn't until 2016, that banks started running into losses as till 2015, even with the rise in NPAs banks still managed to be profitable.

ii. There has been increase in the NPAs since 2014, which suggests that banks lacked transparency and weren't showing the actual picture of the status of the loans that had gone bad. This could be attributed to the fact that the loans were already defaulted by the borrowers and were under the NPA category but they weren't acknowledged by the banks till after 2014.

iii. From the Table 2. We can perceive that the Net Profits of the Public Sector Banks have dwindled in the past 5 years due to heavy provisions for Non-Performing Assets and other contingencies.

iv. As, it can be seen, that there is a moderately negative relationship between the Net profit and GNPAs of all the 12 Public Sector Banks, meaning a rise in one variable leads to a decline the other.

v. There is a strong negative relationship between GNPAs and the Net Profits of the banks, with the profits steadily decreasing and the GNPAs rising due to poor appraisal of pre and post disbursement of loan, aggressive lending practices, wilful defaults, loan frauds and corruptions, poor follow-up by the banks and economic slowdown.

vi. However, Net Profits of some public sector banks have turned around in 2019-20 after continuous losses in previous years despite COVID-19, owing to the relief provided by RBI with respect to moratorium period, asset classification and ploughing back of dividends which shored up their performance.

vii. It can also be observed that Indian Overseas Bank had managed to significantly decrease their NPA burden from Rs. 33,398.12 cr to Rs. 19,912.70 cr due to capital infusion of Rs. 4,360 cr by the government.

VI. RECOMMENDATIONS AND CONCLUSION

RECOMMENDATIONS

i. To minimise the Non-Performing Assets (NPAs), banks should take proper steps to determine the creditworthiness of borrowers. Borrower's "Credit Information Bureau (India) Limited (CIBIL)" score should be evaluated to assess their creditworthiness.

ii. Banks should also try to ascertainprematurely that there is going to be a default and report it to the "Central Repository of Information on Large Credits (CRILC)".

iii. Before a loan is granted or released, a due diligence report detailing the borrower's financial background must be prepared. As a result, banks must ensure that a rigorous audit is undertaken before accepting any loan volume.

iv. Loans can be issued depending on the output of properties in different sectors across various industries and various settlement schemes can be used.

v. To combat the rising cases of lost money, strict fines may be imposed on loan defaulters or others who supply false or incorrect details and actively circulate information of the defaulters.

vi. To boost the recovery of advances by Public Sector Banks, banks must enforce adequate and strict recovery procedures.

vii. Alternate dispute resolution mechanisms can be used for more rapidclearance of the dues such as "LokAdalats and Debt Recovery Tribunals".

viii. For monitoring and governing the amount of NPAs in India's public sector banks, banks should approach the Debt Recovery Tribunals (DRT), LokAdalats, CIBIL, SARFAESI Act 2002, and Credit Information Bureau.

ix. The government must ensure that such cases are quickly resolved, since an uptick in nonperforming assets (NPAs) limits the circulation of money in banks and impacts the overall flow of the economy.

x. There have been recent developments to tackle the rising NPAs such as Insolvency and Bankruptcy Code (IBC), Credit Risk Management and amending banking laws to give RBI more power than just inspection of the borrower.

xi. Giving RBI more power would ensure that they are able to not only monitor the large accounts but also be able to create oversight committees.

xii. There is a need for a suitable and operational Management Information System (MIS) to monitor warnings.

xiii. Banks need to develop proper framework and guidelines for senior-level appointments.

xiv. To fix the issue of Non-Performing Assets, banks should consider "raising capital". The government may create provisions to allocate unclaimed deposits to banks as capital much like provisions for unclaimed dividends.

CONCLUSION

Every country's economic growth is dependent on the proper operation of the country's financial systems, which includes the banking sector. Non-performing assets (NPAs) have always harmed the Indian banking industry. They have a negative effect on the profitability of the banks. They not only affect the bank's financial performance but also the economy's financial growth. Since our economic development is dependent on the financial system, the banks need to concentrate on NPA management in order to boost profits. An increasing NPA implies a huge number of credit defaults, which in turn has a bearing on a bank's profitability, liquidity, and solvency. The problem of nonperforming assets (NPAs) primarily affects public sector banks. The capital becomes unavailable when deposits become non-performing assets (NPAs) due to defaulting on the payment of dues, which has a direct effect on the bank's profitability because Indian banks depend heavily on interest income on funds borrowed.

As a result, stringent policies should be enforced to resolve this problem. In addition, the government should make further arrangements to expedite the resolution of pending cases. The banks could manage their non-performing assets (NPAs) through the successful implementation of Debt Recovery Tribunals, LokAdalats, and the SARFAESI Act.

VII. LIMITATIONS OF THE STUDY AND FUTURE PERSPECTIVE

i. The study's first and most important drawback is that it is focused on secondary results, from which some conclusions are drawn based on interpretation of the data.

ii. Furthermore, this analysis is limited to Indian Public Sector Banks, which does not offer a detailed image of the banking industry's results.

iii. The report is limited to the past ten years, from 2011 to 2020. As a result, the findings may not be exhaustive or generally relevant, as no consumers were consulted as part of the study, which is contrary to the bank's policies.

iv. The scope of the analysis is restricted by the data's availability.

v. Since the details on Non-Performing Assets is very critical, bank officials are unable to disclose the factsand figures they have.

vi. NPAs are changing over time and the research is carried out in the present time, with little consideration for future possible changes.

vii. The Reserve Bank of India Publications was used to classify Non-Performing Assets.

FUTURE PERSPECTIVE

The Indian economy is on the threshold of a significant transition, with many policy reforms set to take place soon. Strong market perceptions, increased customer sentiment, and better-controlled inflation are all projected to aid the country's economic progress. Improvements in infrastructure investment, quicker project execution, and the continuity of changes are projected to fuel demand even further. All of these factors suggest that India's banking sector is self-sufficient in terms of stable and robust expansion, as rapidly expanding companies would turn to banks for credit.

Phone and online banking systems have risen to prominence as a result of technological advances. In order to boost the customer's experience while giving them a strategic advantage, the banking industry is putting a stronger focus on delivering better services to their customers and improving their technological infrastructure.

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