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INVESTIGATING LOAN DEFAULTS AND IT'S IMPACT ON PROFITABILITY OF PUBLIC SECTOR BANKS IN INDIA

[1]Vanshika Shorewala

[1]2nd year graduation student,
Bombay Stock Exchange Institute,
Mumbai, India.

Abstract: The banking industry plays a pivotal role in development and growth of the economy. The level of NPAs act as an indicator of the financial soundness of the banking sector. This study aims to investigate the impact of loan defaults on the profitability of public sector banks in India. Correlation analysis has been used to examine the relationship between loan defaults (gross NPAs), provisions for NPAs and profitability of public sector banks. Primary data has been collected by interviewing credit managers of different public sector banks in Mumbai to understand the factors considered for loan disbursals, recent trend in NPAs and steps taken by banks and regulatory authorities to address the same. The research utilizes secondary data from the annual reports of 5 public sector banks for the period of 2013 – 2022. The findings of the study reveal that increase in loan defaults has a significant negative impact on the profitability of public sector banks in India. The paper also highlights the systematic and efficient steps taken by the government in the recent years to mitigate loan default risks and maintain the profitability of public sector banks.

Index Terms **- Non-performing assets, NPA provisions, Profitability, Public sector banks, Loan defaults**

1. INTRODUCTION:

Economic Overview:

India's economic growth rate is expected to be at 6.4% for 2023-24 as per reports published by the RBI. According to the first advance estimate of the National Statistical Office, GDP growth is estimated at 7% in 2022-23.
India's retail inflation was 6.4% in February 2023. The major reason for high inflation level can be attributed to rising food prices, which accounts for almost 40% of the Consumer Price Index (CPI) basket. RBI had forecasted retail inflation to be around 6.5% for FY2023 and 5.3% for FY2024. In order to curb the rising inflation, Reserve Bank of India (RBI) has raised the interest rates by 250 basis points from 4% to 6.5% in FY 22-23. This increase in interest rates has a significant impact on the banking industry.

Banking Sector Overview:

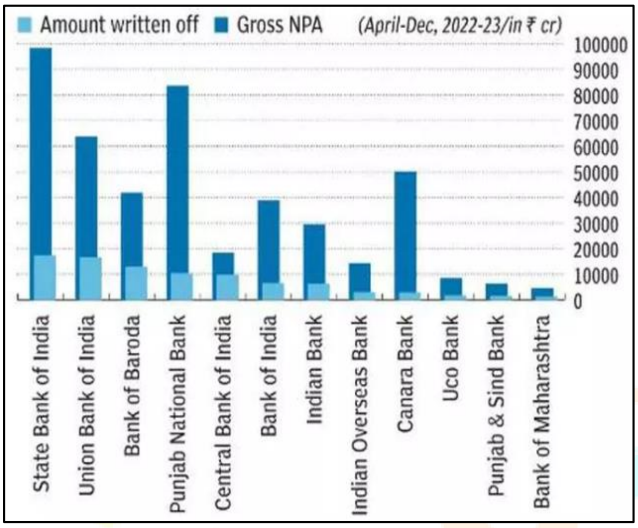
The Indian banking system consists of the central bank (RBI), 12 public sector banks (PSBs), 22 private sector banks, 46 foreign banks, 56 regional rural banks and 1485 urban cooperative banks. Total outstanding loans of banks increased from Rs 5.1 trillion (23.9% of GDP) in March 2001 to Rs 130.4 trillion (50.3% of GDP) in September 2022. India targets to become the 3rd largest domestic banking sector by 2050.

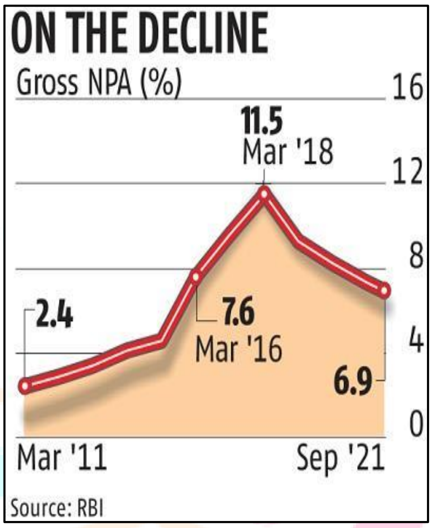
COVID-19 pandemic in 2020 was a significant test of global financial system after the financial crisis of 2008. Timely policy interventions by the Government and RBI helped reduce the stress experienced by individuals, MSMEs and corporates by making credit available on easy terms. With the gradual return to normalcy, signs of recovery became visible with all scheduled commercial banks (ASBCs) credit growing by 9.6% in FY22, compared to 5.6% growth in FY21. There was fresh borrowing by large corporates as the share of top 100 large borrowers in the total loan book of scheduled commercial banks (SCBs) rose to 17.4% in September 2022. But, the total deposits growth slowed to 8.9% in FY22 compared to 11.40% in FY21 majorly because of lower interest rates and flight to capital markets / digital asset classes with the expectation of higher returns.

The asset quality of ASCBs has improved over the years. As per RBI reports, gross NPAs of SCBs have dropped to a 7-year low of 5% in September 2022. The net NPAs were at a 10-year low of 1.3%. NPAs peaked at Rs 10.4 trillion in March 2018 but have declined to Rs 7.4 trillion in March 2022. Quarterly slippage ratio had been rising since December 2021, but it cooled off in September 2022 and considerable improvement was shown by public sector banks. Asset quality of top 100 borrowers improved and their share in SCBs' Gross NPA reduced from 6.8% in March 2022 to 5.4% in September 2022. Provision coverage ratio (PCR) of banks has been rising since March 2021 and reached 71.5% in September 2022. PCR of public sector banks has improved from

46% in March 2015 to 86.9% in March 2022. Gross NPAs have improved across most of the sectors. It improved in the industrial sector but continued to remain high level for gems and jewellery and construction sub-sectors.

Finance minister, Nirmala Sitharaman has said that banks have written off NPAs over Rs 10 lakh crore in last five financial years. Writing off NPAs help banks to clear their balance sheets, avail tax benefits and optimize capital to comply with RBI guidelines and policy approved by their boards. Public Sector Banks have recovered NPAs of Rs 6.4 lakh crores written-off loans since FY15. This recovery of stressed assets has improved through Insolvency and Bankruptcy Code (IBC), 2016 and Securitization and Reconstruction of Financial Assets and Enforcement of Security Interests (SARFAESI) Act, 2002. Banks plan to transfer NPA accounts of Rs 50,000 crore to NARCL (National Asset Reconstruction Company Ltd), also referred to as a ‘bad bank’. Public sector banks have written off around Rs 91,000 crore in first 9 months of FY 2022-23. They have only recovered around Rs 1 out of Rs 5 in written off accounts during FY22. However, the pace of recovery picked up from around 8% in FY18 to around 21% in FY22.





(Source: thehindubusinessline.com) (Source: business-standard.com)

Meaning:
A non-performing asset (NPA) is a loan given by a bank to a borrower on which the principal is past due and no interest payments have been made for a prolonged period of time. As per the RBI circular of 2007, an asset becomes non-performing when it ceases to generate income for the bank. The RBI has introduced 90 days’ overdue norm for identifying NPAs from March 31, 2004. Banks usually provide a grace period before classifying an asset as non-performing. Afterward, the bank will categorize the NPA into one of the four sub-categories:

SR NO	Type of Asset	Classification
1)	Standard Assets	These are NPAs that have been past due for 90 days to 12 months and carry a normal risk level.
2)	Sub-Standard Assets	They have been NPAs for a period more than 12 months and have a significantly higher level of risk. Banks usually assign a haircut (reduction in market value) to such NPAs because they are less certain that the borrower will eventually repay the entire loan amount.
3)	Doubtful Debts	Have been NPAs for a period of at least 18 months.
4)	Loss Assets	NPAs with an extended period of non-payment, considered as uncollectible. The full loan amount is written off and recorded as a loss on the bank’s balance sheet.

NPA Provision is the amount that banks keep aside from their profits or income annually to set off future NPAs. This helps banks to provide for bad assets and maintain a healthy book of accounts.

The NPAs are of 2 types:
1. Gross NPA:
It refers to total of loan assets that are classified as NPAs according to RBI guidelines as on balance sheet date. It reflects the quality of loans made by banks.
(Gross NPAs Ratio = Gross NPAs / Gross Advances).

2. Net NPA:
It refers to those type of NPAs in which the banks subtract the provisions for NPAs. It indicates the actual burden of banks.
(Net NPAs = Gross NPAs – Provision / Gross Advances - Provisions).

2. NEED OF THE STUDY:

NPAs are recorded as a loss on a bank's balance sheet after a prolonged period (usually 90 days) of non-payment of the principal amount and interest by the borrower. NPAs result in financial burden on banks and significant number of NPAs over a period of time could be an indication that the financial strength of the bank is in jeopardy. Thus, rising NPAs are a serious concern for banks.

This research paper aims to analyse the relationship between loan defaults, provisions for NPAs and bank’s profitability. The main objective is to study the impact of increasing NPAs on the profitability of public sector banks in India including the reasons for the rise in NPAs and the measures taken by RBI and public sector banks in the recent times to address the situation. Bank managers of 5 banks of the Fort branch in Mumbai were interviewed to collect primary data for the research.

The topic is significant because loan defaults have adverse impacts on the overall health of the banking sector which in turn affects the economy of a country as a whole. Some of the factors that contribute to loan defaults include poor credit appraisal practices, weak risk management practices, macroeconomic factors, and borrower default. Investigating these factors can help banks identify the most effective methods for recovering NPAs and develop new strategies to improve their recovery rates.

3. RESEARCH OBJECTIVES:

There are 4 objectives in performing this study which are as mentioned below:

- To determine the impact of loan defaults on the financial health of public sector banks in India.
- To understand the relationship between NPAs, NPA Provisions and profitability of public sector banks in India.
- To study key factors and loan products that lead to bank defaults.
- To analyse the different measures taken by public sector banks to reduce and recover the NPAs in their books.

4. LIMITATIONS OF THE RESEARCH:

The limitations of performing this study are as mentioned below:

- The research is limited by period of study. Numeric data is collected for the time period between 2013 to 2022. Hence, when the same analysis is done on a longer time frame, there is a possibility that it might provide certain different results.
- The research majorly assesses the impact of two factors i.e. NPAs and provisions on profitability of public sector banks. There are other factors that affect a bank's profitability like net interest margin (NIM), management profile, bank size, liquidity and operating efficiency, which are not included in the study. Important ratios loan-to-deposit ratio, capital adequacy ratio, return on assets, CASA ratio and debt-to-equity ratio have also not been taken into account.
- The primary data for the study has been collected by interviewing bank managers of limited bank branches in the Fort area of Mumbai.
- Many bank mergers have taken place in the public sector banking space. The effect of changes in the bank's balance sheet post the mergers have not been considered.

Bank	Merged Banks
State Bank of India	• State Bank of Bikaner & Jaipur • State Bank of Mysore • State Bank of Patiala • Bharatiya Mahila Bank • State Bank of Travancore • State Bank of Hyderabad
Punjab National Bank	• Oriental Bank of Commerce • United Bank of India
Bank of Baroda	• Dena Bank • Vijaya Bank
Indian Overseas Bank	Region-centric bank, which will remain as independent entity
Canara Bank	Syndicate Bank

5. REVIEW OF LITERATURE:

1. **A comparative study of Non-Performing Assets in India in the Global context - similarities and dissimilarities, remedial measures**

Prashanth K Reddy (2002)

Studying the experiences of other countries can provide valuable insights into best practices and strategies for addressing NPA problem in India. This can help in identifying potential mechanisms like strengthening legal and regulatory frameworks, improving institutional capacity and capability, and enhancing efficiency of recovery mechanisms. The study found that all Asian countries had weak legal mechanism for asset disposal which prevented early resolution of NPAs. The factors that cause of NPAs differ significantly across countries with real estate, crony capitalism, directed credit and lack of prudential norms being some of them. For example, structures like Keiretsus and Chaebols in Japan and Korea and the SOE's in China were responsible for NPA problems in their countries. Effectiveness of ARCs and well developed capital markets are some of the remedial measures suggested in this paper.

2. **Banking Sector Reforms and NPA: A study of Indian Commercial Banks**

Meenakshi Rajeev and H P Mahesh (2010)

In India, the concept of NPA was introduced on recommendations of committee on financial system (Narasimham, 1991). In 2003, India ranked 4th globally in terms of highest NPAs. The study found that issue of NPAs is more prevalent in the Asian region. But it was also noted that methods of reporting and evaluating NPAs are not uniform across the globe. Some countries have low NPAs because of early write offs. Introduction of Health Code System by RBI in 1985 -86 provided information on health of individual advances, quality of credit portfolio, extent of advances. The Tiwari and Narasimham Committees recommended establishment of Debt Recovery Tribunals (power to hear and decide cases related to recovery of debts) and Asset Reconstruction Company (acquire NPAs from banks to restructure debt or sell the assets to recover dues) in India. Introduction of SARFAESI Act in 2002 empowered banks to foreclose NPAs and enforce security interest without court / tribunal intervention of courts or tribunals. Other measures are restructuring of banks, recovery through Lok Adalats, Civil Courts and compromise settlement.

3. **Credit risk and commercial banks' performance in Nigeria: a panel model approach**
Kolapo T Funso, Ayeni R Kolade and Oke M Ojo (2012)
The study investigated the quantitative effect of credit risk on financial performance of commercial banks in Nigeria from 2000 to 2010. The study selected 5 commercial banks on a cross-sectional basis for analysis. It was found that a 100% increase in non-performing loan reduces profitability (measured by return on assets) by about 6.2%. 100% increase in loan loss provision also reduces profitability by about 0.65%, while a 100% increase in total loan and advances increase profitability by about 9.6%. It was recommended that banks in Nigeria should enhance their capacity in credit analysis and loan administration, and regulatory authority should pay more attention to banks' compliance with relevant provisions of bank and other Financial Institutions Act (1999) and prudential guidelines.

4. **A Comparative Analysis of Non- Performing Assets (NPAs) of Selected Commercial Banks in India**
Samir and Deepa Kamra (2013)
This paper highlights the challenges faced by Indian banks in managing NPAs and how they affect the banks' profitability, liquidity, and solvency. The paper focuses on 3 banks, (SBI, PNB, Central Bank of India) and analyzes their NPA positions. There are various internal factors (like taking up new projects, time/cost overrun, inefficient management and improper SWOT analysis on the part of banks) and external factors (like recession, input or power shortage, changes in government policy such as excise and import export duties and sickness of the industry) due to which business loans turn into NPAs. It emphasizes the importance of effective credit risk management, corporate governance practices and loan recovery mechanisms for reducing NPAs and improving the overall health of the banking industry.

5. **A Study on the Composition of Non-Performing Assets (NPAs) of Scheduled Commercial Banks in India**
Dr. M. Syed Ibrahim and Dr. Rangasamy Thangavelu (2014)
A strong banking sector is vital for a flourishing economy. The higher the NPAs the lower the performance of bank. The research noted that gross NPAs is the highest for public sector banks and lowest in case of Foreign Banks. It was also found that there is significant impact of public sector banks' loss assets on all scheduled commercial banks loss assets. The study suggests that bank employees should be trained to upgrade their skills in recovering the loans and advances, there should be a specialized credit rating agencies to finalize the borrowing capacity of the potential borrowers before disbursal of credit, measures to be introduced to ensure timely repayment of loan amount by borrowers and clearing the misconception among farmers that agricultural credit may be waived off sometime in the future.

6. **Non-Performing Assets and Public Sector Banks in India**
Lok Sabha Secretariat Parliament library, reference, research, documentation and information service (LARRDIS) (2014)
This paper analyses implications of high NPAs for the economy of a country the banking industry. When loans turn into NPAs, huge amount of funds goes out of the financial system and the cycle of lending – repaying – borrowing is disrupted. Slowdown in amount of credit given to various sectors creates adverse effects on the economy. It results in fall in industrial output, GDP growth and profit margins of the companies which causes recession in the market. In event of rising NPAs, credit risk management becomes priority over other functions of a bank. It leads to increased provisioning, declining profits (as NPAs increases banks have to increase the amount kept aside as provisions which will reduce their net profits), falling net interest margin and steady erosion of capital resources. NPAs create a vicious cycle which if not managed properly could lead to bank failure.

7. **A critical review of non-performing assets in the Indian banking industry**
Varuna Agarwala and Nidhi Agarwala (2019)
This study reveals that the growth rate of NPAs of private sector is lower than the nationalised banks. This comparative analysis has been performed by comparing growth rates of NPAs of each bank with the average growth rate of NPAs in the banking sector. Measures like Insolvency and Bankruptcy Code 2016, recapitalisation of public sector banks, special mention accounts and setting up of stressed asset management verticals have been introduced for resolving the problem of NPAs. The research suggests that banks should do a regular supervision of end use of funds, sanction loans after considering the return on investment of the project, check credit history of borrower and assist the borrower to develop entrepreneurial skills while help to ensure that the asset does not convert into a NPA.

8. **NPAs and profitability in Indian banks: an empirical analysis**
Santosh Kumar Das and Khushboo Uppal (2021)
This study has examined the relationship between NPAs and profitability by estimating the determinants of profitability of 39 public and private banks from 2005 to 2019. Increasing number of loan defaults lead banks to incur extra operating costs in form of increased spending on monitoring and selling of these loans to ARCs. Higher NPA provisions reflect higher credit risk which reduces asset quality of banks. So, high provisioning and carrying costs of NPAs drain the profitability of banks. Net interest income represents income of banks from its their core lending business. When an asset becomes NPA, it stops generating interest income so the interest earned by banks reduces, but the bank still has to pay interest on deposits. NPAs hamper credit growth. Rise in NPAs results in fall in proportion of interest earning assets and hence return on assets (ROA) declines. NPAs and ROA (measure of bank's profitability) have an inverse relation; as NPA rises, ROA of a bank falls.

9. **Assessment of Loan Defaults and Its Impact on Profitability of Banks**
Dr. Varsha Agarwal, Agarwal Ishika, Aishwarya Rajesh, Aishwarya V Rathod, Aniket Gandhi, Oshika Soni (2022)
This study uses secondary data to discuss major effects of high levels of NPAs on banks. For secured loans, in case of default, asset pledged as collateral is seized and liquidated by bank. In case of unsecured debts like credit cards and student loans, the impact of default varies in severity as per the type of loan. Credit risk is the most significant risk faced by banks as credit is considered as a predominate source of income for banks. NPAs are the first indicators of credit risk. Hence, profitability of a bank is largely dependent upon methods of managing NPAs. The research concluded that rising NPAs result in decrease in the profitability, decrease in the overall credit rating, reduction in bank's lending potential and increase in the cost of funds. The study suggests that

banks can reduce NPAs through measures like good credit appraisal procedures, effective control systems while sanctioning loans and following RBI provisioning and write off norms.

10. **Investigating loan defaults and their effects on the profitability of banks**
Dr. Ruchi Atri, Jatin Sharma (2022)
The study assesses the present situation of non-performing loans based on 22 commercial banks in India. Banks work as intermediaries between borrowers and depositors. Thus, if borrower fails to repay the loan amount, bank must still repay money to depositors from profits. In case of increasing NPAs, bank's whole operation starts to break down and in certain cases banks declare insolvency. Some factors that lead to loan defaults are inadequate loan supervision, monitoring and control, insider lending, short grace periods, improper credit appraisal and voluntary unwillingness to pay. The study found that corporate loan default rises as real GDP declines, and exchange rate depreciation directly affects repayment capacity of borrowers. Proper credit assessment methods and accepting collaterals as security while sanctioning of loans are some of the ways to reduce the problem of NPAs. The study highlights that RBI has introduced various legal measures for recovering non-performing assets like debt recovery tribunal (DRT), corporate debt restructuring, asset reconstruction company India limited (ARCIL), credit information bureau and SARFAESI Act.

6. RESEARCH METHODOLOGY:

6.1 Sample Details-

1. Research Design: Exploratory and descriptive research design
2. Research Instrument: Qualitative and quantitative research method
3. Sample Size: 5 banks - State Bank of India, Punjab National Bank, Bank of Baroda, Indian Overseas Bank and Canara Bank
4. Sampling Method: Convenience sampling (as only credit managers of the loan department of 5 banks were interviewed)
5. Research Area: The responses were collected from the bank branches in Fort, Mumbai

6.2 Data and Sources of Data-

Primary data was collected via personal interviews by framing a structured set of questions based on research objectives. Credit Managers of banks were interviewed to understand the factors considered before sanctioning of loans, causes of NPAs, steps taken by banks to recover NPAs and regulatory acts introduced to ensure efficient NPA recovery. Secondary data was gathered through review of literatures and subject-related information. Data has also been collected through news articles on the RBI website, livemint, times of India and economics times. Numeric data for the amount of NPAs, provisions and profitability of banks was taken from annual reports on company websites.

6.3 Theoretical framework-

This study involves three main variables, namely: NPAs, Provisions for NPAs and Profitability.

6.4 Statement of Hypothesis and testing-

Correlation analysis method is used to test the hypothesis.

Formula: $\rho (X,Y) = cov (X,Y) / \sigma X * \sigma Y$

Where, cov (X,Y) is the covariance
σX is the standard deviation of X
σY is the standard deviation of Y

3.4.1 Hypothesis 1-

H0: There is no significant impact of loan defaults (Gross NPAs) on the probability of public sector banks in India.

H1: There is a significant impact of loan defaults (Gross NPAs) on the probability of public sector banks in India.

State Bank of India		
Year	Gross NPA	Net Profit
2013	51,189	14,105
2014	61,605	10,891
2015	56,725	13,102
2016	98,173	9,951
2017	1,12,343	10,484
2018	2,23,427	-6,547
2019	1,72,750	862
2020	1,49,092	14,488
2021	1,26,389	20,410
2022	1,12,023	31,676
Correlation	-0.5211	

Punjab National Bank		
Year	Gross NPA	Net Profit
2013	13,466	4,748
2014	18,880	3,343
2015	25,695	3,062
2016	55,818	-3,974
2017	55,370	1,325
2018	86,620	-12,282
2019	78,473	-9975
2020	73,479	336
2021	1,04,423	2,022
2022	92,448	3,457
Correlation	-0.4358	

Bank of Baroda		
Year	Gross NPA	Net Profit
2013	7,983	4,481
2014	11,876	4,541
2015	16,261	3,398
2016	40,521	-5,396
2017	42,719	1,383
2018	56,480	-2,432
2019	48,233	1100
2020	69,381	928
2021	66,671	1,547
2022	54,059	7,849
Correlation	-0.3043	

Indian Overseas Bank		
Year	Gross NPA	Net Profit
2013	6,608	567
2014	9,020	602
2015	14,922	-454
2016	30,049	-2,897
2017	35,098	-3,417
2018	38,180	-6,299
2019	33,398	-3738
2020	19,913	-8,527
2021	16,323	831
2022	15,299	1,709
Correlation	-0.6513	

Canara Bank		
Year	Gross NPA	Net Profit
2013	6,260	2,872
2014	7,570	2,438
2015	13,040	2,703
2016	31,638	-2,813
2017	34,202	1,122
2018	47,468	-4,222
2019	39,224	347
2020	37,041	-2,236
2021	60,288	2,558
2022	55,652	5,678
Correlation	-0.1117	

Conclusion:

The correlation coefficient of Gross NPAs and Net Profit for all the above 5 public sector banks in negative as given below:

SR NO	Bank	Correlation Coefficient
1)	State Bank of India	-0.5211
2)	Punjab National Bank	-0.4358
3)	Bank of Baroda	-0.3043
4)	Indian Overseas Bank	-0.6513
5)	Canara Bank	-0.1117

Negative correlation indicates that there exists an inverse relation between the two variables i.e. Gross NPAs and Net Profits. Rise in NPAs results in an increase in operating costs and fall in net interest margins which lead to a decline in profitability of banks.

Indian Overseas Bank has the highest negative correlation coefficient which shows that increase in NPAs has highest significant negative impact on profitability. Canara Bank has the lowest negative correlation coefficient which shows that increase in NPAs has a comparatively less significant negative impact on profitability.

Since, correlation coefficient is negative, Null hypothesis (H0) is rejected and **Alternative is accepted (H1)**.
Hence, increase in Gross NPAs leads to decline in Net Profits of public sector banks.

6.4.2 Hypothesis 2-

H0: The amount of provisions for NPAs has no direct influence on net profits of a public sector bank in India.

H1: The amount of provisions for NPAs has direct influence on net profits of a public sector bank in India.

State Bank of India		
Year	NPA Provision	Net Profit
2013	11,368	14,105
2014	14,224	10,891
2015	17,908	13,102
2016	26,984	9,951
2017	32,247	10,484
2018	70,680	-6,547
2019	54,529	862
2020	42,776	14,488
2021	27,244	20,410
2022	14,087	31,676
Correlation	-0.7581	

Punjab National Bank		
Year	NPA Provision	Net Profit
2013	6,103	4,748
2014	8,737	3,343
2015	9,802	3,062
2016	19,854	-3,974
2017	22,043	1,325
2018	37,612	-12,282
2019	24,435	-9975
2020	14,464	336
2021	17,060	2,022
2022	14,159	3,457
Correlation	-0.8891	

Bank of Baroda		
Year	NPA Provision	Net Profit
2013	3,791	4,481
2014	5,841	4,541
2015	8,192	3,398
2016	21,115	-5,396
2017	7,680	1,383
2018	14,212	-2,432
2019	12,192	1100
2020	16,405	928
2021	12,408	1,547
2022	14,640	7,849
Correlation	-0.6000	

Indian Overseas Bank		
Year	NPA Provision	Net Profit
2013	2,465	567
2014	2,994	602
2015	4,457	-454
2016	9,743	-2,897
2017	14,150	-3,417
2018	17,334	-6,299
2019	18,647	-3738
2020	12,983	-8,527
2021	11,430	831
2022	11,149	1,709
Correlation	-0.6231	

Canara Bank		
Year	NPA Provision	Net Profit
2013	1,871	2,872
2014	2,153	2,438
2015	3,781	2,703
2016	9,641	-2,813
2017	7,576	1,122
2018	14,948	-4,222
2019	12,734	347
2020	10,734	-2,236
2021	14,174	2,558
2022	9,868	5,678
Correlation	-0.4677	

Conclusion:

The correlation coefficient of NPA Provisions and Net Profit for all the above 5 public sector banks in negative as given below:

SR NO	Bank	Correlation Coefficient
1)	State Bank of India	-0.7581
2)	Punjab National Bank	-0.8891
3)	Bank of Baroda	-0.6000
4)	Indian Overseas Bank	-0.6231
5)	Canara Bank	-0.4677

Negative correlation indicates that there exists an inverse relation between the two variables i.e. NPA Provisions and Net Profits. Provision for NPAs is a certain amount that banks keep aside from their profits to cover potential losses (NPAs). This reduces the capital available to provide further loans to other borrowers which results in a decline in profitability.

Punjab National Bank has the highest negative correlation coefficient which shows that increase in NPA Provisions results in significant decline in profitability. Canara Bank has the lowest negative correlation coefficient which shows that increase in NPA Provisions does not result in a significant decline in profitability as compared to the other banks mentioned above.

Since, correlation coefficient is negative, Null hypothesis (H0) is rejected and **Alternative is accepted (H1)**.

Hence, increase in NPA Provisions leads to decline in Net Profits of public sector banks.

6.4.3 Hypothesis 3-

H0: There is no direct relation between NPA and provisions.

H1: There is a direct relation between NPA and provisions.

State Bank of India		
Year	Gross NPA	Provisions
2013	51,189	11,368
2014	61,605	14,224
2015	56,725	17,908
2016	98,173	26,984
2017	1,12,343	32,247
2018	2,23,427	70,680
2019	1,72,750	54,529
2020	1,49,092	42,776
2021	1,26,389	27,244
2022	1,12,023	14,087
Correlation	0.9410	

Punjab National Bank		
Year	Gross NPA	Provisions
2013	13,466	6,103
2014	18,880	8,737
2015	25,695	9,802
2016	55,818	19,854
2017	55,370	22,043
2018	86,620	37,612
2019	78,473	24,435
2020	73,479	14,464
2021	1,04,423	17,060
2022	92,448	14,159
Correlation	0.6059	

Bank of Baroda		
Year	Gross NPA	Provisions
2013	7,983	3,791
2014	11,876	5,841
2015	16,261	8,192
2016	40,521	21,115
2017	42,719	7,680
2018	56,480	14,212
2019	48,233	12,192
2020	69,381	16,405
2021	66,671	12,408
2022	54,059	14,640
Correlation	0.6967	

Indian Overseas Bank		
Year	Gross NPA	Provisions
2013	6,608	2,465
2014	9,020	2,994
2015	14,922	4,457
2016	30,049	9,743
2017	35,098	14,150
2018	38,180	17,334
2019	33,398	18,647
2020	19,913	12,983
2021	16,323	11,430
2022	15,299	11,149
Correlation	0.8477	

Canara Bank		
Year	Gross NPA	Provisions
2013	6,260	1,871
2014	7,570	2,153
2015	13,040	3,781
2016	31,638	9,641
2017	34,202	7,576
2018	47,468	14,948
2019	39,224	12,734
2020	37,041	10,734
2021	60,288	14,174
2022	55,652	9,868
Correlation	0.9032	

Conclusion:

The correlation coefficient of NPA Provisions and Net Profit for all the above 5 public sector banks in positive as given below:

SR NO	Bank	Correlation Coefficient
1)	State Bank of India	0.9410
2)	Punjab National Bank	0.6059
3)	Bank of Baroda	0.6967
4)	Indian Overseas Bank	0.8477
5)	Canara Bank	0.9032

Positive correlation indicates that there exists a direct relation between the two variables i.e. Gross NPA and NPA Provisions. In case of rising NPAs, banks maintain higher provisions to cover the same.

State Bank of India has the highest positive correlation coefficient which shows that the bank has been regularly maintaining sufficient amount of provisions for any change in NPAs. Punjab National has the lowest positive correlation coefficient as compared to the other banks mentioned above.

Since, correlation coefficient is positive, Null hypothesis is rejected (H0) and **Alternative is accepted (H1)**.

Hence, this is a direct and positive relation between NPA and provisions.

Thus form the above hypothesis tests, it was found that the 3 variables i.e. level of NPAs, provision for NPAs and profitability of PSBs are inter-dependent.

7. DATA ANALYSIS AND INTERPRETATION:

7.1 Primary data analysis-

Primary research was conducted by interviewing credit officers of 5 banks and responses were:

1. Which factors are considered while sanctioning a loan?

It depends on type of loan taken (secured / unsecured), purpose of loan (education, home, corporate, vehicle, personal, etc) and amount of loan. Some common factors considered are:

- Income statements – salary slips of working professionals and P&L A/C and Balance Sheet statements of self-employed businessmen. Proper due diligence is done to sure that the documents are true and verified.
- CIBIL score – judge credit worthiness of borrower. Past credit history is analysed by banks to check if the customer has made timely payments of existing EMIs or has record of past defaults. 750 and above is considered to be a good CIBIL score.
- Background check of borrower – on basis of 3 C's of credit (Character, Capacity of repayment, Collateral security)
- Some specific factors considered depending on purpose of loan are:
  - Home loan: area of residence, property valuation, loan-to-value ratio,
  - Business loan: type of industry and business, plant visits, stock valuation, estimated future cash flows, credit ratings
  - Education loan: level of education, university rankings, proposed income
  - Personal loan: ensure that loan is not taken for speculation

2. Due to the recent rate hikes by the RBI, did the bank experience a fall in number of loans taken?

Upon interviewing the credit officers, it was found that although interest rate on loans taken increased, it did not have a significant impact on the number of loans taken. Irrespective of the rate hikes the demand for loans is still intact, especially in the housing sector.

3. Do banks take collaterals as security in case the borrower fails to repay the principle amount?

Banks accept property, vehicle, stocks, bonds, jewellery, life insurance policy, etc as a form of collateral for loans they provide. In case of education loan, no collateral is required up to Rs 7.5 lakhs.

4. NPAs are usually incurred on what category of loans?

It was found that NPAs are mostly incurred on business loans (quantum wise), personal loans and education loans. Home loans usually have the lowest NPAs since property is hypothecated as collateral. In case of NPAs in secured loans, collateral can be liquidated and some amount can be recovered. NPAs in the education loan category for PSBs was around 7.82% and outstanding education loans were about Rs 80,000 crores for June quarter of FY23. Concentration of loans to specific borrowers or industry lead to high NPAs in case of defaults and sectoral slowdowns.

5. Has there been a decline in NPAs in the recent years?

All the 5 bank managers that were interviewed mentioned that there has been a notable decline in the NPAs over the years. Improved asset quality, regulatory measures, economic recovery, government support, efficient NPA recovery mechanism and better credit appraisal are some of the major factors that have contributed to the falling trend of NPAs in the public banking sector in India.

6. In case a borrower fails to repay the principle amount of the loan, what are some of the ways in which the bank tries to recover the loan amount?

- Soft and hard recovery of NPAs: Soft recovery involves regular follow up and request calls / emails to customers to settle dues. Hard recovery involves taking sending legal notices under Section 13(2) and 13(4) of SARFAESI Act. It states that defaulting borrower must discharge full his liabilities to the bank within 60 days from date of notice failing which the bank shall be entitled to take possession of the collateral and liquidate it.
- Legal action: Banks can file a legal suit with Lok Adalat or Debt Recovery Tribunal (debt due is more Rs 20 lakh or more).
- Sale of NPAs to Asset Reconstruction Company and Stressed Asset Management Branch

7. What are some of regulatory measures to reduce the NPAs?

- Introduction of legal acts: Enactment of following acts –
  - Recovery of Debts due to Banks and Financial Institutions and Bankruptcy Act – establishment of Debts Recovery Tribunals
  - SARFAESI Act – banks can seize property of borrower without going to court except in case of agricultural land
  - Insolvency and Bankruptcy Code – filing of cases in National Company Law Tribunal
  - Substantial Acquisition of Shares and Takeovers (SAST) Regulations – wilful defaulters and companies with wilful defaulters as promoters would be prohibited from accessing capital markets to raise funds
- Ratio requirements: PSBs must maintain a capital adequacy ratio of 12%. Other important ratios are provisioning coverage ratio, debt-to-equity ratio, gross NPAs to gross advances and net NPAs to net advances ratios.
- Asset Quality Review: Initiated in 2015 by RBI revealed high occurrence levels of NPAs even in clean and adequately provisioned bank balance-sheets. It resulted in transparent recognition by banks as stressed accounts were reclassified as NPAs and expected losses on stressed loans were provided for.
- Online OTS (one-time settlements) platforms: Set up by RBI to ensure timely realisation.

7.2 Secondary data analysis-

7.2.1 Reasons for NPAs in PSBs-

- Highly concentrated loan portfolio including certain borrowers and specific sectors.
- Large credit exposures to a few large corporate borrowers and few sectors such as infrastructure, power, steel, mining, and telecom. Global economic slowdown, mining project bans, permit delays related to environmental protection which affected power and steel industries, fluctuations in raw material prices and supply shortages resulted in a fall in profits of most companies. In turn, companies delayed loan payments and some even defaulted.
- Liberal credit policies and relaxation of credit regulations as a result of which the financial position and credit ratings of companies were not adequately analysed.
- Insufficient emergency plans for project risk reduction.

7.2.2 Important NPA related ratios (2022)-

Ratios	**State Bank of India**	**Punjab National Bank**	**Bank of Baroda**	**Indian Overseas Bank**	**Canara Bank**
Provision Coverage Ratio	75.04%	62.24%	75.28%	91.66%	84.17%
Capital Adequacy Ratio (Basel-III)	13.83%	14.50%	15.84%	13.83%	14.90%
Gross NPA to Gross Advances ratio	3.97%	11.78%	6.61%	9.82%	7.51%
Net NPA to Net Advances ratio	1.02%	4.80%	1.72%	2.65%	2.65%

7.2.3 NPAs in priority and non-priority sector (as on March 2022)-

Sector	**State Bank of India**	**Punjab National Bank**	**Bank of Baroda**	**Indian Overseas Bank**	**Canara Bank**
Priority Sector					
O/S Total Advances (Cr Rs)	6,95,621	2,65,662	2,44,043	82,479	3,38,340
Gross NPA (Cr Rs)	53,262	52,989	20,756	6,970	25,515
% of Gross NPAs to Total Advances	7.66%	19.95%	8.51%	8.45%	7.54%
Non Priority Sector					
O/S Total Advances (Cr Rs)	21,23,049	5,19,441	4,40,109	73,320	4,02,807
Gross NPA (Cr Rs)	58,761	39,459	20,514	8,327	30,137
% of Gross NPAs to Total Advances	2.77%	7.60%	4.66%	11.36%	7.48%

- As per RBI guidelines, banks must allocate minimum 40% of their loans directed to priority sector lending (PSL) segment which includes agriculture, MSMEs and low-income households.
- Asset quality of PSL portfolio of private banks is better as compared to public sector banks due to stronger underwriting skills.
- It can be noted that most of the banks (except Indian Overseas Bank) had higher % gross NPA to total advances in PSL category.

7.2.4 Government's 4R's strategy to reduce NPAs of PSBs-

The central government implemented a comprehensive 4R's strategy, which consists of:

- Recognition of NPAs transparently
- Resolution and recovery of value from stressed accounts
- Recapitalising of PSBs
- Reforms in PSBs and the wider financial structure for a responsible and clean system

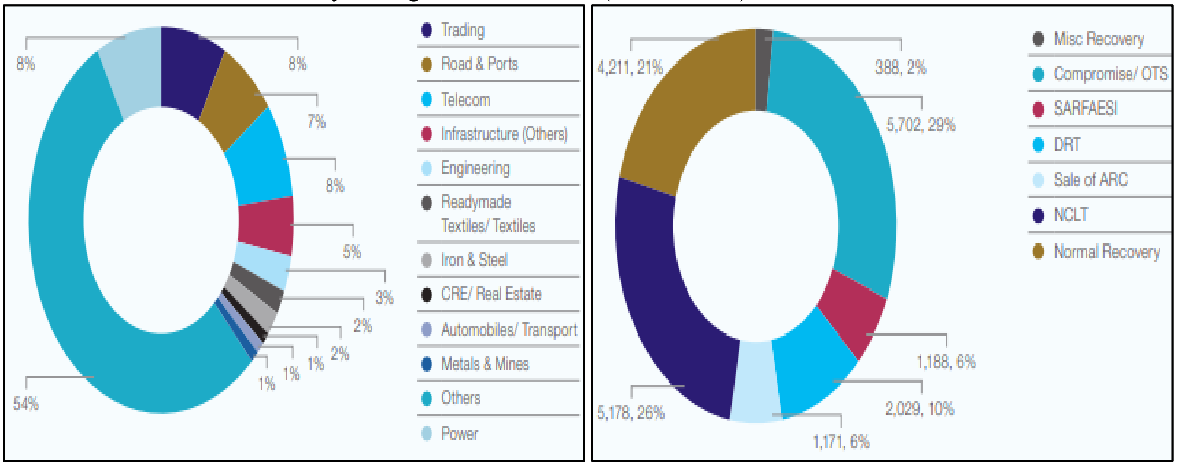
Comprehensive steps taken under the 4R's strategy:

- Insolvency and Bankruptcy Code resulted in a change in credit culture by changing the creditor-borrower relationship. Control of the defaulting company to taken away from the promoters and wilful defaulters to be debarred from resolution process and raising funds from the market.
- Board-approved Loan Policies of PSBs mandate necessary approvals and linkages before disbursement, scrutiny of group balance-sheet and ring-fencing of cash flows.
- Use of third-party data sources for extensive due diligence to mitigate risk due to misrepresentation and fraud.
- Specialised monitoring agencies in financial and domain knowledge to be utilised for effective monitoring of loans above Rs. 250 crores.

Recapitalisation and restructuring of PSBs:

- Bank recapitalisation is a process in which additional capital is infused into banks to enable them meet the obligatory capital adequacy norms set by RBI from time to time. To avoid frequent recapitalisation government has undertaken restructuring of these banks through consolidation (mergers) and privatisation.
- Due to higher NPAs, provisioning and write-offs, PSBs required capital support. The government infused Rs 3.11 lakh crore to recapitalise PSBs during FY17 – FY21, out of which Rs 0.35 lakh crore were sourced through budgetary allocation and Rs 2.76 lakh crore through issuance of recapitalisation bonds to these banks.

SBI's sector wise NPA and NPA recovery through various modes (March 2022):



(Source: annual report of SBI, FY22)

8. FINDINGS:

- Loan defaults have a significant negative impact on profitability of PSBs in India. Banks need to maintain higher NPA provisions in case of high NPAs. This results in lower bank profitability as higher NPAs require increased provisioning which eats into profits of banks.
- Collaterals play a crucial role in reducing NPAs of public sector banks by risk mitigation, improved credit assessment, lower loan losses and improved recovery in case of defaults. Collateralised loans (e.g. home loans) have lower chances of NPAs as compared to unsecured loans.
- CIBIL score is an important metric to measure the financial creditworthiness of the borrower. It is a three - digit numeric summary of the customer's credit history which is based on the credit payment history across loan types and credit institutions over a period of time.
- Increasing NPAs have been a serious concern for public sector banks in India. But, there has been a declining trend in NPAs recent years due to efficient regulatory measures taken by the RBI (minimum ratio requirements and introduction of proper civil procedures for NPA recovery), proper due diligence before disbursal of loans, asset quality reviews, sale to ARCs and write offs, strong debt recovery mechanisms, restructuring and recapitalisation of banks.
- Diversification of loan portfolio can help PSBs to reduce NPAs by spreading the risk across different sectors, borrowers and geographies.
- Priority sector lending is a grey area as it plays a significant role in ensuring balanced economic growth in India. But, it also has a proportionately higher share in NPA portfolio of public sector bank which results in deteriorating asset quality. Lower value of loan, defaulting borrowers due to lower creditworthiness, lower productivity of agricultural sector and lack of adequate infrastructure are some of the reasons for higher NPAs in the priority sector.

9. CONCLUSION:

It can be concluded that loan defaults have been a major challenge for public sector banks in India, and their impact on the profitability of these banks has been significant. The high level of NPAs due to loan defaults has affected the net interest income, capital adequacy ratio, and provisioning requirements of PSBs, leading to a decline in profitability. But effective regulatory measures have been taken to address the crucial issue of NPAs to ensure sustained growth and stability of the Indian banking sector. To ensure sustained improvement in profitability, it is important to continue strengthening risk management practices, diversify lending portfolios, and improve recovery mechanisms. Additionally, a conducive regulatory environment, efficient capital allocation, and innovation in digital banking can also help PSBs in India to mitigate the impact of loan defaults and improve their profitability in the long term.

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