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RESEARCH ARTICLE

COMPARATIVE STUDY ON NON-PERFORMING ASSETS OF SELECTED PRIVATE AND PUBLIC SECTOR BANKS

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ABSTRACT

The banking industry which is essential to the development of an economy often play with non-performing assets. An asset for which the borrower has not paid the interest or principal for the given period of time, it is referred to as a non-performing asset in India. This is as per the as per compliance in accordance with the guidelines issued by RBI. As non-performing assets increase, banks become more cautious in the disbursement of the loans. As a result, there is less flow of credit to industries which in turns creates a problem of payments. The objectives of the current research article are to compare the factors for non-performing assets and returns on assets for PSUs and private sector banks over a period of twelve-year i.e., 2010–11 to 2021–22. The study takes into account a variety of performance indicators, including gross NPA%, net NPA%, return on assets, growth in net non-performing assets (NNPA) and growth in return on assets (ROA). For PSUs, statistical date about performance of State Bank of India, Punjab National Bank, and for private sector, HDFC Bank and ICICI Bank have been considered. While there has been a decline in NPA's over the research period, PSUs still have far more non-performing assets than private sector banks. Although there are also declining patterns in the returns on assets, PSUs are far less affected as compared to private sector banks.

INTRODUCTION

Growing numbers of non-performing advances or loans have the potential to negatively affect banks' performance by limiting their profits and lowering their profitability. A loan or advance typically becomes a non-performing asset (NPA) when the borrower fails to repay the principle or is unable to pay back its debt. An NPA defines an asset as ineffective and prevents the banks from recovering the principal. The bank's interest income diminishes on one hand, while the possibility of principle recovery also reduces on the other. While declining interest income has a direct influence on a bank's viability, inadequate primary capital recovery can cause the capital base of the bank to erode (Das and Uppal, 2021). The banking industry supports a country's financial system in a variety of ways, including maturity, liquidity, and risk management. The type of banking system of a country gives a strong indication of the financial health of its economy. As a result, a nation's banking system is crucial towards the success a nation. It is extremely important to the growth of every area of the economy.

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India needs supportive and strong banking system in order to achieve prosperity across board as it is the largest independent democracy in the world supported by a burgeoning economic powerhouse. Over the last three decades, the financial sector has undergone an extraordinary transition that has helped it to achieve a number of accomplishments. One of the factors contributing to India's development is the fact that banking industry does not have any restrictions upon operations in urban areas or major metropolitan areas and has expanded to rural and far-flung regions. Though the government has relaxed some of its regulations to promote the banking industry, It's worth noting that after the introduction of LPG (Liberalization, Privatization, and Globalization) in India, a significant hurdle to the growth of certain sectors emerged in the form of Non-Performing Assets (NPAs). Singh (2015) observed the high level of NPA in the Indian banking sector is a major concern for the economy. It was found that recovery mechanisms such as Debt Recovery Tribunals and Asset Reconstruction Companies have not been effective in reducing NPA levels in banks. In light of this, the Reserve Bank of India's decision to introduce the notion of *'non-performing assets concept'* as a current concern in the banking sector has led to an evolution. Therefore, when the Reserve Bank of India adopted the prudential standards in accordance with the Narasimham committee's suggestions in the financial year 1992–1993, the idea of non-performing assets emerged as a contemporary concern in the banking environment. By encouraging savings and investment, banks may help the economy grow by making up for lack of capital. Dey (2018) discovered that Securitization and Reconstruction of Financial assets and Enforcement of Security Interest (SARFAESI) Act has not been effective in reducing NPA levels in banks. Banks need to focus on improving their credit appraisal and monitoring system to reduce NPA. Agrawal et al, (2021) studied that non-performing asset of the banking industry is one of the important parameters for performance of banks among various parameters of lending. By encouraging savings and investment, banks may help the economy grow by making up for lack of capital. A strong banking system makes the community's dispersed savings available for investment in profitable businesses. Any economic growth strategy must place capital in a strategic position. Large-scale economic development is not conceivable without sufficient levels of capital formation. Lack of capital, which results from inadequate community savings, is a crucial aspect of an economy that is still in its infancy. The banks practice a level of discrimination that not only assures their own safety but also ensures the best possible use of the community's financial resources.

We can observe that India's economic growth has been accompanied by a tremendous rise in bank deposits and bank branches. Thus, by mobilizing community financial resources and directing them to flow in the right directions, banks play a significant and beneficial role in fostering economic development. The banks in India are currently active in supporting the nation's economic growth. NPA is the key factor that affects the profitability and survival of banking industry. As mentioned above there is a variable reference where we can measure levels of NPA in public sector banks and private sector banks. Vallabh (2007) found that public sector banks had higher NPA as compared to private and foreign sector banks. Keeping in view, this study is an attempt to analyse these variations over a period of 2010-2022 with a view to identify the pattern of these variations between PSUs and private sector banks.

Non-performing assets (NPA)-Policy Decision: According to the prudential standards outlined by the RBI, an asset is deemed to be non-performing when the interest or principal installment is past due by more than 90 days. In simple words, an asset is classified as performing if the projected income is obtained from it, but it is treated as non-performing if it fails to produce income or deliver value by the due date. The "90 Days overdue" norm for identifying NPA's had been introduced in the year ending 31 March 2004 as an attempt to ensure with international best practices and to guarantee greater transparency. Non-performing assets are regarded as a crucial factor that may be used to evaluate and assess the financial performance and general health of banks. The whole banking industry is thought to be concerned about the rising trend in NPA. Unprecedented increase in the rate of non-performing assets (NPA) and the banks' use of ineffective recovery techniques are causing the banks to experience uneven development. Priority lending and the flawed lending policy both led to the rise in the non-performing assets rate. If non-performing assets are not effectively controlled, they will have a significant impact on assets' earning potential and also have an adverse effect on banks' return on investment because the cost of capital will rise, there will be a mismatch between assets and liabilities, and higher provisioning requirements on mounting non-performing assets which will negatively impact the capital adequacy ratio and banks' profitability. A non-performing asset is nothing more than an asset that wouldn't bring in any money for the bank. In accordance with the guidance or rules relating to asset classification provided by the RBI, a bank or financial institution may classify a borrower's asset or account as substandard, doubtful, or loss asset. Table 1.1 provides the phases of specified periods of NPAs.

Table 1.1. Phases of Specified periods of NPA

Year Ending March 31	Specified Period	Source
1993	Four quarters	https://www.rbi.org.in/scripts/BS_ViewMasCirculardetails.aspx?Id=449
1994	Three quarters	https://www.rbi.org.in/scripts/BS_ViewMasCirculardetails.aspx?Id=449
1995 onwards	Two quarters	https://www.rbi.org.in/scripts/BS_ViewMasCirculardetails.aspx?Id=449
2004	Over 90 days	https://www.rbi.org.in/scripts/BS_ViewMasCirculardetails.aspx?Id=449
March 2020-May 2020*	Over 180 days	https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11835
June 2020	Over 90 days	https://www.rbi.org.in/scripts/BS_ViewMasCirculardetails.aspx?Id=449

*Because of covid.

Non performing Assets: This section presents the concept of non-performing assets as defined in the literature:

Definition 1: "An asset, including a leased asset, becomes nonperforming when it ceases to generate income for the bank." (Source: https://www.rbi.org.in/ scripts/BS_ ViewMas Circulardetails.aspx?Id=449)

Definition 2: An amount due under any credit facility is treated as "past due" when it has not been paid within 30 days from the due date. Due to the improvements in the payment and settlement systems, recovery climate, up-gradation of technology in the banking system, etc., it was decided to dispense with 'past due' concept, with effect from March 31, 2001. Accordingly, from that date, a non-performing Asset (NPA) shall be an advance where:

- Interest and/or installment of principal remain overdue for a period of more than 180 days in respect of a Term Loan,
- The account remains 'out of order' for a period of more than 180 days, in respect of an Overdraft/ Cash Credit (OD/CC),
- The bill remains overdue for a period of more than 180 days in the case of bills purchased and discounted,
- Interest and/or installment of principal remains overdue for two harvest seasons but for a period not exceeding two half years in the case of an advance granted for agricultural purposes, and
- Any amount to be received remains overdue for a period of more than 180 days in respect of other accounts.
- (Source: https://www.rbi.org.in/scripts/BS ViewMas Circulardetails. aspx?Id=449)

Definition 3: Adopted on March 31 2004, a non-performing asset (NPA) shall be a loan or an advance where;

- Interest and/ or installment of principal remain overdue for a period of more than 90 days in respect of a term loan,
- The account remains 'out of order' for a period of more than 90 days, in respect of an Overdraft/Cash Credit (OD/CC),
- The bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted,
- Interest and/or installment of principal remains overdue for two harvest seasons but for a period not exceeding two half years in the case of an advance granted for agricultural purposes, and
- Any amount to be received remains overdue for a period of more than 90 days in respect of other accounts.
- (Source: https://www.rbi.org.in/ scripts/ BS_ ViewMas Circulardetails.aspx?Id=449)

Definition 4: "NPA with respect to derivative transactions; The overdue receivables representing positive mark-to-market value of a derivative contract, if these remain unpaid for a period of 90 days from the specified due date for payment will be termed as NPA." (Source: https://pib.gov.in/Pressreleaseshare.aspx?PRID=1576493#:~:text=in%20respect%20of%20derivative%20transactions,specified%20due%20date%20for%20payment)

Definition 5: "In case of interest payments, banks should classify an account as NPA only if the interest due and charged during any quarter is not serviced fully within 90 days from the end of the quarter." (Vashisht, 2021)

Classification of Non-Performing Asset and Changes Thereof: Regulations that govern the asset classification into four categories - Standard, Substandard, Doubtful, and Loss. Three asset categories - substandard, doubtful, and loss (RBI 2007) - combines to form NPA. Clear, uniform, and consistent definitions for RBI should be developed for various groups of assets. Based on their vulnerabilities and dependence on collateral securities, banks should divide their assets into four categories of NPA as mentioned in Table 1.2

Table. 1.2. Provisions as per norms of NPA

Classification	Overdue period	Loss provision
D1	Upto 1 year	20%
D2	One to three years	30%
D3	More than three years	100%
NPAs under Loss category Provisioning at 100% for loss category would continue		
Source: Satpal (2014) D* stands for doubtful.		

"Banks are required to classify non-performing assets further into the following three categories based on the period for which the asset has remained non-performing and the reliability of the dues:

- Sub-standard Assets
- Doubtful Assets
- Loss Assets"

Sub-standard Assets: "A sub-standard asset is one, which is classified as NPA for a period not exceeding two years. With effect from 31 March 2001, a sub-standard asset is one, which has remained NPA for a period of less than or equal to 18 months. In such cases, the current net worth of the borrower/ guarantor or the current market value of the security charged is not enough to ensure recovery of the dues to the banks in full. In other words, such an asset will have well defined credit weaknesses that jeopardize the liquidation of the debt and are characterized by the distinct possibility that the banks will sustain some loss, if deficiencies are not corrected."(Source: https://www.rbi.org.in/scripts/BS_ViewMasCirculardetails.aspx?Id=449)

Doubtful Assets: A doubtful asset was one, which remained NPA for a period exceeding two years. With effect from 31 March 2001, an asset is to be classified as doubtful, if it has remained NPA for a period exceeding 18 months. A loan classified as doubtful has all the weaknesses inherent in assets that were classified as sub-standard, with the added characteristic that the weaknesses make collection or liquidation in full, – on the basis of currently known facts, conditions and values – highly questionable and improbable." (Source: https://www.rbi.org.in/ scripts/BS_ View Mas Circulardetails.aspx?Id=449)

Loss Assets: A loss asset is one where loss has been identified by the bank or internal or external auditors or the RBI inspection but the amount has not been written off wholly. In other words, such an asset is considered non-collectable and of such little value that its continuance as a bankable asset is not warranted although there may be some salvage or recovery value." (Source: https://www.rbi.org.in/ scripts/BS_ ViewMas Circulardetails.aspx?Id=449)

Review of Literature

This section provides an overview of the existing research work which was done on the present study as well the gaps to be fulfilled in the process of research study. Rajeev et.al, (2010) studied the composition of Non-performing assets (NPA's) of Scheduled Indian commercial banks in relation to various dimensions and objected that continuous evaluation of NPA help in its reductions. Kaur and Singh (2011) stated that NPA's are considered as an important parameter to judge the performance and financial health of banks. The financial stability and the growth of the banking sector would greatly influence the rate or level of Non-performing assets that exists in the Bank. They also concluded in their research study that the non-performing assets are the Major hindrance or setback for the growth of Indian economy. The causes of NPA's in home loans of commercial banks examined by Patnaik et al, (2011) In this regard, researchers collected the required data by distributing the questionnaires to the borrowers of the loans. After the survey, the final suggestions were given to overcome the NPA issue. The occurrence s of NPA may not be avoidable entirely but they can be managed effectively. The fresh incidences of NPAs should be avoided but not at the cost of new deployment of credit. Chaudhary and Sharma (2011) attempted to analyze how efficiently Public and Private sector banks are managing NPAs. A statistical tool for projection of trend was used for analysis. The research highlights the methodologies used by Public and Private sector banks in controlling and managing their Non-performing assets so as to increase their profitability and liquidity position. Kaur (2012) examined the magnitude of Non-performing assets on the financial performance of the banks and also the various reasons contributing for high rate NPA's in the bank. Finally in her study she concluded that it is the prime responsibility of RBI and government to curb the problem of Non-performing assets as it is an intimidating trend which creates a huge impact on the development of Indian economy.

Rajput et al, (2012) analyzed the profitability indicator on NPA. In their research they also emphasized the importance of inclusion of various methods to control the trend of Non-performing assets which proves to be an effective and efficient solution to the existing problem pertaining to the concept of Non-performing assets in the banking sector. Non-performing assets pose a serious danger to the banking industry. Therefore, Non-performing assets deserves utmost attention as it adversely affects the economic growth of the Nation (Pasha and Srivenkataramana, 2014). Singh (2016) found that Non-performing assets has always been a huge problem not only to the banks but also to the economy. The capital or funds held up in Non-Performing Assets (NPAs) can have a direct bearing on the financial performance and liquidity status of banks. This is especially pertinent for Indian banks, given their substantial reliance on the interest income generated from loans provided to customers. It was found that extent of Non-performing assets is comparatively very high in public sectors banks. Even though the various steps have been taken by the government to reduce the level of Non-performing assets it still needs more attention to eradicate this problem. In the study's conclusion, it is observed that the level of Non-Performing Assets (NPAs) in Indian banks remains significantly higher than that of foreign banks. Achieving a state of zero NPAs is considered impractical. Hence, it is essential for the government and the Reserve Bank of India (RBI) to implement corrective measures to address this issue.Miyan (2017) stated that even though Non-performing assets are showing a downward trend over the study period, the non-performing assets of public sector banks are still higher than private sector banks. It was also analyzed in the research that the core management of private sector banks was more efficient, professional and competent as compared to PSU Banks. Hence, private sector banks must enhance their competence and efficiency when devising strategies for recovering funds from both individual and institutional borrowers. Public sector banks, on the other hand, have a commitment to extending financial assistance to the economically disadvantaged segments of society, which can impact the recovery process. This explains the declining trend in the recovery of Non-Performing Assets (NPAs) among public sector banks.

Agarwal and Agarwal (2019) found that their NPA growth rate was less rapid than that of nationalized banks, SBI, and its affiliates. Due to the ineffective management of the problem of subprime loans by the nationalized banks and the associate banks of SBI, the growth in such loans has been extraordinarily significant. NPA is the one of the key parameters which indicates the financial stress of any banks in India. Sagarika (2019**)** found that NPA is more in public sector banks i.e., Punjab National Bank (PNB) in India and it has negatively affected the profitability of the banks, because PNB has negative correlation between Net NPA and Net Profit. Agrawal et. al., (2021) studied that non-performing asset of the banking industry is one of the important parameters of performance of banks among various parameters of lending. The bank lends to priority sectors (includes agriculture & allied activities) MSME, big Industry, business activities etc. Agriculture includes small and marginal farmers, medium farmers and large farmers. Agarwal (2022) studied that rising NPA seriously impacts the credit granting capacity of the banking sector. Public sector banks are especially under radar for mounting NPA's issue. Crisis management, government intervention and stakeholder's agreement are the need of the hour for all banks.

The relationship between return on Investment (ROI) and profitability of Indian banks was investigated by Bawa et al(2019). There is a positive relationship between ROI and profitability, which indicates that banks with higher ROI tend to be more profitable. Das and Uppal (2021) investigated the impact of non-performing assets (NPA's) on the profitability of Indian banks using empirical analysis that negatively impacts the profitability of banks. These studies found that NPA's had a significant negative impact on the profitability of Indian banks, which indicates that banks with higher NPA's tend to have lower profitability.

Research gap in Literature: An overview of the above literature shows that there are various studies in the field of non-performing assets in the banking industry. However, there are no studies performed reviewing the performance over the last 12 years data i.e., from 2010-2022, which is important and pertinent because the major piling up has taken place after 2011 in the aftermath of the financial crisis of 2008. Moreover, the major focus of the paper is not only on groups of banks but also individual selected banks. Hence, the article focuses on the causes, impact, and management of NPA's to comprehend the position of banks in a better way.

Objective of the Study

- To study the trends of gross and net non-performing assets of selected private sector banks and public sector banks.
- To study the relationship between Gross NPA and profitability measure (ROA) between selected public sector banks and Private sector banks.
- To study the impact of NPA's on Public sector banks and Private sector banks.
- To provide suggestions to avoid future NPA's and to manage existing NPA's in Banks.

Hypotheses of the study

For the purpose of this study, it has the following null hypotheses

$H0_1$: There is no significant difference between gross and net non-performing assets of selected private sector banks and public sector banks.

$H0_2$: There is no significant difference between Correlation of selected private sector banks and public sector banks.

$H0_3$: There is a positive impact of non-performing assets on profitability of selected private sector banks and public sector banks.

$H0_4$: There is no significant relationship between Gross NPA and profitability measure (ROA) at selected Public and Private sector banks.

METHODOLOGY

In this review paper, which focuses on the critical issue of non-Performing assets (NPA) in both public and private sector banks, a meticulous research methodology has been devised to provide valuable insights and comprehensive analysis. The chosen approach for data collection is secondary research, allowing for a comprehensive exploration of existing information and a deeper understanding of the NPA phenomenon.

Table 2.1 Return on assets of selected bank for a period of 2010-22 (In percentage)

Banks	HDFC[3]		ICICI[5]		PNB[4]		SBI[2]	
Years	ROA	% of Gross NPA	ROA	% of Gross NPA	ROA	% of Gross NPA	ROA	% of Gross NPA
2010-11	1.41	1.05	1.26	4.47	1.17	1.79	0.6	3.28
2011-12	1.52	1.02	1.36	3.62	1.06	2.93	0.87	4.44
2012-13	1.68	0.97	1.55	3.22	0.99	4.27	0.9	4.75
2013-14	1.72	1	1.64	3.03	0.6	5.25	0.6	4.95
2014-15	1.73	0.9	1.72	3.78	0.5	6.55	0.63	4.25
2015-16	1.73	0.94	1.34	5.21	-0.59	12.9	0.44	6.5
2016-17	1.68	1.05	1.26	7.89	0.18	12.53	0.38	6.9
017-18	1.64	1.3	0.77	8.84	-1.6	18.38	-0.18	10.91
2018-19	1.69	1.36	0.34	6.7	-1.28	15.5	0.02	7.53
2019-20	1.71	1.26	0.72	5.53	0.04	14.21	0.36	6.15
2020-21	1.78	1.32	1.31	4.96	0.16	14.12	0.45	4.98
2021-22	1.78	1.17	1.65	3.6	0.26	11.78[2]	0.63	3.97[2]
Mean±SE	1.67 ±0.11	1.11 ±..16	1.24 ±.43	5.071 ±1.88	0.12 ±.88	10.02 ±.17	0.48 ±.31	5.72 ±2.07
C.V	0.06	0.15	0.34	0.37	7.11	0.55	0.66	0.36
CAGR	-0.90	0.01	-0.95	-0.02	-1.00	0.17	-0.95	0.02
Correlation	0.18		-0.71		-0.89		-0.87	

Source:
1.https://www.statista.com/statistics/1064657/india-gross-npa-public-sector-banks-india/
2.https://www.moneycontrol.com/financials/statebankofindia/results/yearly/SBI/1#SBI
3.https://www.moneycontrol.com/financials/hdfcbank/results/yearly/HDF01
4.https://www.moneycontrol.com/financials/punjabnationalbank/results/yearly/PNB05/3#PNB05
5.https://www.moneycontrol.com/financials/icicibank/results/yearly/ICI02

Table 2.2 Gross Non-performing assets of selected bank for a period of 2010-22

(In ₹ millions)								
Bank /	PNB[4]		SBI[2]		HDFC[3]		ICICI[1]	
Year	GNPA	% GNPA in PSB	GNPA	% GNPA in PSB	GNPA	% GNPA in PvtSB	GNPA	% GNPA in PvtSB
2010-11	43793.9	5.9	195348.9	26.2	16943.4	11.7	100342.6	69.2
2011-12	87196.2	7.4	253262.9	21.5	19993.9	13.8	94753.3	65.3
2012-13	134657.9	8.2	511893.9	31	23346.4	14.8	96077.5	60.8
2013-14	188800.6	8.3	616050	27	29892.8	12.2	105058.4	42.8
2014-15	256948.6	9.2	567250	20.4	34383.8	10.1	150946.9	44.3
2015-16	558183.3	10.3	981728	18.2	43928.3	7.8	262212.5	46.7
2016-17	553704.5	8.1	1123429	16.4	58856	6.3	421593.8	45.2
2017-18	866200.5	9.7	2234274.6	24.9	86069.7	6.7	540625.1	41.8
2018-19	784727	10.6	1727503.6	23.4	112241.6	6.1	462916.3	25.2
2019-20	734787.6	10.8	1490918.5	22	126499.7	6	414091.6	19.8
2020-21	1044234.2 [1]	16.9	1263890.2[1]	20.5	150860	7.6	413734.2	20.9
2021-22	924480.4	17.1	1120233.7	20.7	161409.6	8.9	339195.2	18.8
Mean	514809.6	10.2	1007148.6	22.7	72035.4	9.3	283462.3	41.7
S.E	359068.8	3.5	615759.9	4.1	53302.2	3.1	167509.7	17.7
C.V	0.7	0.2	0.6	0.2	0.7	0.3	1	0.2

Source:
1 https://www.statista.com/statistics/1064657/india-gross-npa-public-sector-banks-india/
2 .https://www.moneycontrol.com/financials/icicibank/results/yearly/ICI02
3 https://www.moneycontrol.com/financials/statebankofindia/results/yearly/SBI/1#SBI
4 .https://www.moneycontrol.com/financials/hdfcbank/results/yearly/HDF01
5 .https://www.moneycontrol.com/financials/punjabnationalbank/results/yearly/PNB05/3#PNB05

To ensure a robust investigation, a descriptive research design has been adopted, enabling a detailed examination of the NPA situation in public and private sector banks. By employing a fact-finding strategy, this study seeks to uncover the underlying causes, impacts, and potential remedial measures associated with NPAs in the Indian banking industry. The research sample comprises of two prominent private sector banks, namely HDFC Bank and ICICI Bank, as well as two major public sector banks, State Bank of India (SBI) and Punjab National Bank (PNB). The selection of these banks has been carefully made through purposive sampling, considering their significant presence and diverse NPA profiles within the Indian banking landscape. To ensure the collection of comprehensive and reliable data, an array of credible secondary sources will be utilized. These sources include renowned publications such as the esteemed Economic Times, insightful bank websites, reputable bank journals like the

Table 2.3 Net Non-performing assets of selected banks during period of 2010-22 (In ₹ millions)

Bank / Year	PNB[6]	% NNPA in PSB	SBI[2]	% NNPA in PSB	HDFC[3]	% NNPA in Pvt.SB	ICICI [5]	% NNPA in Pvt.SB
2010-11	20,386.3	9.6	123,468.9	58.1	2,964.1	6.7	24,073.6	54.3
2011-12	44,542.3	11.4	158,188.5	40.4	352.3	0.8	18,608.4	42.3
2012-13	72,365.0	11.7	219,564.8	35.5	4,689.5	7.8	22,305.6	37.2
2013-14	72,365.0	8.1	310,960.0	35.0	8,200.3	9.3	22,305.6	25.2
2014-15	99,169.9	8.1	275,905.0	22.5	8,962.8	6.3	32,979.6	23.3
2015-16	153,965.0	6.1	558,070.0	22.2	13,203.7	4.9	62,555.3	23.4
2016-17	354,225.6	12.4	582,773.0	20.4	18,439.9	3.9	129,630.8	27.1
2017-18	327,021.0	7.2	1,108,540.0	24.4	26,010.2	4.0	252,168.1	39.2
2018-19	300,376.6	10.5	658,947.4	23.1	32,145.2	4.8	135,774.3	20.2
2019-20	272,188.9	11.8	518,713.0	22.5	35,423.6	6.4	101,138.6	18.2
2020-21	385,757.0	19.6	368,097.2	18.7	45,548.2	8.2	91,802.0	16.6
2021-22	349,087.3	22.6	279,657.1	18.1	44,076.8	10.1	69,608.9	15.9
Mean	204,287.0	12.0	430,240.0	28.0	20,001.0	6.0	80,246.0	29.0
S.E	139,158.0	5.0	275,833.0	12.0	16,165.0	3.0	68,741.0	12.0
C.V	0.7	0.4	0.6	0.4	0.8	0.5	0.9	0.4

SOURCE:1.https://dbie.rbi.org.in
2. https://www.moneycontrol.com/financials/statebankofindia/results/yearly/SBI/1#SBI3.
3.https://www.moneycontrol.com/financials/hdfcbank/results/yearly/HDF01
4.https://www.moneycontrol.com/financials/punjabnationalbank/results/yearly/PNB05/3#PNB05
5.https://www.moneycontrol.com/financials/icicibank/results/yearly/ICI02
6.https://www.pnbindia.in/

Table 2.4 Percentage change in Gross Non-performing assets of public and private banks during a period of 2010-22(In ₹ millions)

Years	Pvt.SB GNPA[3,5]	% change	PSU GNPA[6,4]	% change
2010-11	182410	…………….	746640	……………..
2011-12	187680	2.9	1178390	57.8
2012-13	210710	12.3	1650060	40.0
2013-14	245420	16.5	2282740	38.3
2014-15	341060	39.0	2784680	22.0
2015-16	561860	64.7	5399560	93.9
2016-17	932090	65.9	6847320	26.8
2017-18	1293350	38.8	8956010	30.8
2018-19	1836040	42.0	7395410	-17.4
2019-20	2095681.5	14.1	6783169.8	-8.3
2020-21	1975075.1 [1]	-5.8	6166155.5[1]	-9.1
2021-22	1807823[1]	-8.5	5421738.0[1]	-12.1
Average trends (In Percentage)		25.6		23.9

Source: https://www.rbi.org.in/
1.https://www.statista.com/statistics/1064657/india-gross-npa-public-sector-banks-india/
2.www.moneycontrol.com/
3.https://www.moneycontrol.com/financials/statebankofindia/results/yearly/SBI/1#SBI
4.https://www.moneycontrol.com/financials/hdfcbank/results/yearly/HDF01
5.https://www.moneycontrol.com/financials/punjabnationalbank/results/yearly/PNB05/3#PNB05
6.https://www.moneycontrol.com/financials/icicibank/results/yearly/ICI02

Table 2.5 Percentage change in Non-performing assets of public and private banks during a period of 2010-22(In ₹ millions)

Years	PvtSB NPA	% change	PSB NPA	% change
2010-11	44320	………………….	360550	……………….
2011-12	44010	-0.70	593910	64.70
2012-13	59940	36.20	900370	51.60
2013-14	88615	47.80	1306350	45.10
2014-15	141283	59.40	1599510	22.40
2015-16	266770	88.80	3203760	100.30
2016-17	477800	79.10	3830890	19.60
2017-18	643804	34.70	4544730	18.60
2018-19	673088	4.50	2851230	-37.30
2019-20	556,834	-17.30	2309176	-19.00
2020-21	553765	-0.60	1964508	-14.90
2021-22	437332	-21.00	1547453.9	-21.20
Average trends (In Percentage)		28.30		20.90

Source:
1.https://www.statista.com/statistics/1064657/india-gross-npa-public-sector-banks-india/
2.www.moneycontrol.com/
3.https://www.moneycontrol.com/financials/statebankofindia/results/yearly/SBI/1#SBI
4.https://www.moneycontrol.com/financials/hdfcbank/results/yearly/HDF01
5.https://www.moneycontrol.com/financials/punjabnationalbank/results/yearly/PNB05/3#PNB05
6.https://www.moneycontrol.com/financials/icicibank/results/yearly/ICI02

Table 2.6. Total Gross performing assets of Private sectors banks and public sectors banks (In Million)

Gross Non-performing Assets				
	Private sector banks	Public sector bank	Other	Total
2010-11	182410	746640	506900	1435950
2011-12	187680	1178390	629700	1995770
2012-13	210710	1650060	797700	2658470
2013-14	245420	2282740	1156500	3684660
2014-15	341060	2784680	1076100	4201840
2015-16	561860	5399560	1580500	7541920
2016-17	932090	6847320	1362900	9142310
2017-18	1293350	8956010	1384900	11634260
2018-19	1836040	7395410	1332900	10564350
2019-20	2095682	6783170	1191700	10070551
2020-21	1975075	6166156	210230	8351461
2021-22	1807823	5421738	206966	7436527

Source: https://www.rbi.org.in/
https://www.statista.com/statistics/1064657/india-gross-npa-public-sector-banks-india/
www.moneycontrol.com/
https://www.moneycontrol.com/financials/statebankofindia/results/yearly/SBI/1#SBI
https://www.moneycontrol.com/financials/hdfcbank/results/yearly/HDF01
https://www.moneycontrol.com/financials/punjabnationalbank/results/yearly/PNB05/3#PNB05
https://www.moneycontrol.com/financials/icicibank/results/yearly/ICI02

Table 2.7. Total Non-performing assets of Private sector bank and private sector banks (in millions)

Net Non-Performing Assets(in Millions)				
	Private sector banks [3,5]	Public sector bank[4,6]	Other	Total
2010-11	6506.0	21264.0	2977.0	30746.9
2011-12	4432.2	39154.6	1312.0	44898.8
2012-13	4401.2	61936.2	1412.0	67749.4
2013-14	5994.4	88819.7	2663.0	97477.1
2014-15	8861.5	122673.4	3160.0	134694.9
2015-16	14128.3	251480.8	1762.0	267371.1
2016-17	26677.4	286156.5	2762.0	315596.0
2017-18	47780.2	454472.7	2250.0	504502.9
2018-19	64380.5	285122.2	2635.0	352137.6
2019-20	67308.9	2309175.9	2768.0	2379252.8
2020-21	556834.1[2]	196450.8[2]	6222.3	759507.2
2021-22	43733.2[2]	154745.4[2]	5746.6	204225.2

Source:
1.https://www.rbi.org.in/
2..https://www.statista.com/statistics/1064657/india-gross-npa-public-sector-banks-india/
3.www.moneycontrol.com/
4.https://www.moneycontrol.com/financials/statebankofindia/results/yearly/SBI/1#SBI
5.https://www.moneycontrol.com/financials/hdfcbank/results/yearly/HDF01
6.https://www.moneycontrol.com/financials/punjabnationalbank/results/yearly/PNB05/3#PNB05
7.https://www.moneycontrol.com/financials/icicibank/results/yearly/ICI02

Journal of Banking & Finance, financial statements, and trusted online platforms such as Money Control and the Reserve Bank of India (RBI) website. By leveraging these diverse sources, this research aims to offer a comprehensive analysis and evaluation of the NPA scenario in both public and private sector banks. The findings of this review paper are anticipated to highlight the intricacies of NPAs, contributing to the existing body of knowledge on effective NPA management and suggesting potential strategies for both sectors. Through an effective research methodology, this study aims to provide valuable insights that can inform policymakers, banking professionals, and stakeholders, ultimately leading to improved NPA management practices in the Indian banking industry.

Data Analysis and interpretation

This section presents the analysis of data of non-performing assets of four banks and its interpretation in the context of objectives of the study. The table 2.1 represents the financial performance of four banks - HDFC, ICICI, PNB, and SBI, over the last 12 years. The data includes return on assets (ROA) and Gross Non-Performing assets (GNPA) as a percentage of total assets for each bank. HDFC having the highest mean ROA of 1.67, while PNB has the lowest mean ROA of 0.12. PNB having the highest mean percentage of GNPA at 10.02%, and HDFC having the lowest mean percentage of GNPA at 1.11%. The coefficient of variation (CV) for each parameter indicates the degree of variability in the data. The CV for ROA of HDFC is low, indicating low variability among all the banks, while the CV for GNPA is relatively high, indicating higher variability among the banks. The compound annual growth rate (CAGR) for ROA and GNPA for each bank shows the annual rate of change in these parameters over the 12-year period. The CAGR for ROA is negative for all banks indicating a decline in ROA over the period. In contrast, the CAGR for GNPA is positive for all banks except ICICI, indicating an increase in GNPA over the period but decreasing in % of GNPA in ICICI. Finally, the correlation values for each bank show the strength of the relationship between ROA and GNPA. HDFC has a weak positive correlation, indicating that as its ROA increases, its GNPA also increases slightly. In contrast, ICICI, PNB, and SBI have strong negative correlations, indicating that as their ROA decreases, their GNPA increases. Table 2.2 shows that Public Sector Banks (i.e., PNB & SBI) have provided the largest amount of loans over the years, with average loan amounts of 514,809.6 million and 1,007,148.6 million respectively. Private sector Banks (i.e., HDFC & ICICI) have provided much lower loan amounts on average, with mean loan amounts of 72,035.4 million and 283,462.3 million respectively. In terms of GNPA percentages, ICICI has the highest mean GNPA percentage of 41.7%, followed by SBI with a mean of 22.7%. Meanwhile, PNB and HDFC have much lower mean GNPA percentages of 10.2% and 9.3% respectively. The data also shows that the GNPA percentages for PNB and SBI have been increasing over the years, while the GNPA percentages for HDFC and ICICI decreasing. Table 2.3 shows that PNB and SBI have generally higher NNPA percentages compared to HDFC and ICICI. It means Public Sector Banks (PSU'S) have higher NNPA as compared to Private Sector Banks. The NNPA percentage for PNB reached a peak of 22.6% in 2021-22, while SBI had the highest NNPA percentage in 2010-11 at 58.1%. Percentage of NNPA for SBI is decreasing continuously over the year. Coefficient of variation indicating that there is considerable variability in the NNPA percentages across the banks. Coefficient of variation is highest in ICICI bank with 0.9 and lowest in SBI i.e., 0.6. Table 2.4 shows the Gross Non-Performing assets (GNPA) and % change in GNPA of private sector banks (Pvt. SB) and public sector banks (PSU) in the period between 2010 to 2022. From the table, we can see that the average trend of GNPA for private sector banks is 25.9% while the average trend of GNPA for public sector banks is 23.9%. We can also see that the GNPA of private sector banks increased significantly by 65.9% in 2016-17 while GNPA of public sector banks increased by 93.9% in the 2015-16. On the other hand, in 2018-19, GNPA of private sector banks increased by 42.0% while GNPA of public sector banks decreased by 17.4% in the same period. Overall, the table shows a fluctuating trend of GNPA for both private sector banks and public sector banks over the years. This table 2.5 compares the NPA (Non-Performing Assets) trends of Public Sector Banks (PSUs) and Private Sector Banks (Pvt SBs) from the year 2010-11 to 2021-22. It shows the NPA figures for both the sectors and their corresponding percentage change from the previous year. According to the table the NPA of PSU's decreased dramatically from 2010-11 to 2014-15, with a 100.3% increase in NPA during 2015-16 period. From 2016-17 to 2018-19, the NPA trend of PSU's slowed down but still showed an average increase of 20.9%. However, in 2021-22, the NPA of PSUs declined by 21.2%. The average NPA trend of PSUs over the period is 20.9%. On the other hand, the NPA trend of Pvt SBs shows a different pattern.

In 2010-11, the NPA of Pvt SBs was relatively low compared to PSUs. However, the NPA of Pvt SBs increased consistently over the years, with a highest increase of 88.8% from 2014-15 to 2015-16. The average NPA trend of Pvt SBs over the period is 28.3% and 20.95% in PSU Bank. Table 2.6 shows the GNPA of Private sector banks, public sector banks and other banks for the years 2010 to 2022. The total GNPA increased from Rs 1,435,950 million in 2010-11 to Rs 7,436,527 million in 2021-22. It can be seen from the table that total GNPA is increasing continuously till the year 2019-20. But it started decline from 2020-21 to 2021-22. The GNPA of Private sector banks has consistently been lower than that of public sector banks. The GNPA of Public sector banks increased sharply from 2014 to 2018, and then started decreasing from 2019 onwards. The GNPA of other banks has remained relatively stable over the years.

The increasing trend in GNPA for Public sector banks from 2014 to 2018 indicates a potential weakness in their loan portfolio, and the decreasing trend from 2019 onwards suggests that measures have been taken to improve the quality of their loans. On the other hand, the consistent lower GNPA of Private sector banks indicates a better loan quality and risk management. In conclusion, the GNPA of banks is an important indicator of their financial health and risk management. The table shows that there are differences in GNPA between Private sector banks and public sector banks, which can be attributed to differences in their loan portfolios and risk management practices. From the table 2.7, we can see that over the years, both private sector banks and public sector banks have experienced an increase in NPA's. However, the NPA's of public sector banks have consistently been higher than those of private sector banks. In 2022, the net NPA's of public sector banks reached 154,745.4 million, while those of private sector banks stood at 43,733.2 million.

RESULTS

- It can be observed that the return on assets (ROA) of HDFC bank was the highest among the selected banks with an average ROA of 1.67% over the period of 2010-2021. The return on assets of ICICI bank was 1.24%, while that of PNB and SBI were 0.12% and .48% respectively.
- It can be observed that the GNPA of SBI bank was the highest among the selected banks, with an average GNPA of 10,07,148.6 million, followed by PNB with an average GNPA of 5,14,809.6 million. The average GNPA of ICICI and HDFC were 2,83,462.3 million and 72035.4 million respectively. The coefficient of variation (C.V) for the ROA of SBI was the lowest among the selected banks, indicating that the ROA of the bank was consistent over the period.
- We can observe that the net non-performing assets of public sector banks increased significantly between 2010 and 2016, with a growth rate of 100.3% percentage change from 2015 to 2016. On the other hand, the net non-performing assets of private sector banks grew at a much slower pace over the same period, with the average growth rate being 20.9%.
- We can observe that the gross non-performing assets of public sector banks decreasing significantly but it was increased in 2015-16 , with a average rate of 23.9%. On the other hand, the net non-performing assets of private sector banks grew at a same pace over the same period, with the average growth rate being 25.9%.
- Over the period of 2010 to 2022, the total net non-performing assets of SBI and ICICI sector banks increased significantly, while other banks grew at a much slower pace.
- Correlation between ROA and Gross NPA: As a comparison of ROA and Gross NPA, all the banks have negative correlation coefficient except HDFC bank. It was observed that HDFC bank has earned huge net profit in the years from2017-2020 irrespective of the higher Gross NPA in 2017-2021, having been the reason behind positive correlation.

Impact of net non-performing assets on banks: The impact of non-Performing assets (NPA) on banks can be summarized as follows:

- **Reduced profitability:** NPAs have a direct negative impact on the profitability of banks. When loans become non-performing, banks face difficulties in recovering the principal and interest. Consequently, there is a decrease in interest income, resulting in financial losses for the banks.
- **Increased provisioning:** Banks are required to set aside provisions to cover potential losses from NPAs. Higher levels of NPAs necessitate larger provisions, significantly affecting the profitability and capital adequacy of banks.
- **Liquidity constraints:** NPAs tie up funds that could otherwise be utilized for lending and generating interest income. Banks with a high level of NPAs may face liquidity challenges as they struggle to meet depositor demands and maintain adequate cash reserves.
- **Credit risk and capital adequacy:** A high level of NPAs indicates an increased credit risk for banks. This can impact their capital adequacy ratios, making it difficult for them to meet regulatory requirements. Banks may need to raise additional capital or limit lending activities to maintain adequate capital ratios.
- **Reputation and investor confidence:** Banks with a significant NPA burden may experience damage to their reputation and investor confidence. High NPAs can be perceived as a sign of poor loan quality, inadequate risk management, or governance issues, negatively impacting the bank's image and market perception.
- **Regulatory implications:** Regulatory bodies impose penalties and restrictions on banks with high levels of NPAs. This can include increased scrutiny, additional reporting requirements, and limitations on expansion or dividend distribution, further impacting the bank's operations and profitability.
- **Overall financial stability:** The accumulation of NPAs in the banking sector can pose a systemic risk to the overall financial stability of an economy. A higher NPA ratio across multiple banks can create contagion effects, leading to reduced lending capacity, economic slowdown, and potential financial crises.

It is imperative for banks to proactively manage NPAs through effective credit risk assessment, loan monitoring, recovery efforts, and prudent lending practices to mitigate the negative impact on their financial health and stability.

Suggestions

Banks need to focus on improving their credit risk management practices and implementing effective recovery mechanisms to tackle the issue of NPA's. Ranjan and Dhal (2003) found that the terms of credit offered by banks were not adequate, which led to higher NPA. They suggested that banks should focus on providing adequate credit and monitoring borrowers to reduce NPA. Banks should conduct proper due diligence before lending to ensure the creditworthiness of borrowers. Sontakke and Chandan (2013) the level of NPA has increased significantly over the years, and the major reason for this was the economic slowdown. The study suggested that banks need to focus on credit appraisal, monitoring and follow-up to reduce NPA levels. They should also adopt modern technologies like data analytic to monitor loan portfolios and identify potential defaulters at an early stage. Additionally, it is essential for the Indian government to implement measures that enhance the overall economic conditions of the country, thereby decreasing the occurrence of non-Performing assets (NPAs). According to Dey (2018), the current recovery mechanisms such as Debt Recovery Tribunals and the Securitization and Reconstruction of Financial assets and Enforcement of Security Interest (SARFAESI) Act have not effectively reduced NPA levels in banks. To address this issue, it is recommended that banks prioritize the improvement of their credit appraisal and monitoring systems in order to minimize NPAs.

CONCLUSION

The current research study will assist the researcher in analyzing and comprehending the significance of both public and private sector banks to the expansion and development of the Indian economy. The researcher would also be able to compare the non-performing assets held by public and private sector banks over the course of the previous five fiscal years.
This comparative analysis will be useful for gaining understanding of the approaches and tactics that the government and RBI might use to create plans and take action to more effectively address the non-performing assets issue. In considering the above data, it can be said that ICICI, a private bank, had seen the highest rise of NPA. However, public sectors have the highest rate of NPA. Both the public and private sectors should implement efficient controlling measures to stop the problem of non-performing assets in India because the banking sector will play a significant role in the development of the Indian economy. India should work toward a more vibrant banking industry that encourages innovation and reduces the inefficiencies brought on by entry barriers. As ineffective banks are eliminated from the system, there can be tremendous advantages from the productive reallocation of capital in the banking industry.

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