European Economic Letters
ISSN 2323-5233
Vol 13, Issue 5 (2023)
http://eelet.org.uk

Non-Performing Assets and Their Influence on Financial Performance of Public and Private Sector Banks

[1]VSM Srinivas, [2]Prof. I. Anand Pawar
[1]PhD Research Scholar, Dept of Business Management,
Dr. B. R. Ambedkar Open University, Hyderabad-500033 (TS), India.
[2]Dean, Faculty of Commerce and Business Management
Head, Dept of Business Management
Dr. B. R. Ambedkar Open University, Hyderabad-500033 (TS) India

Abstract: Non-Performing Assets (NPAs) represent a significant concern in the banking sector, impacting financial performance and stability. This article conducts a comprehensive analysis of the effects of NPAs on the financial performance of both public sector banks (SBI, Union Bank of India, and Canara Bank) and private sector banks (HDFC, AXIS, and ICICI) over a ten-year period, from 2012-13 to 2021-22. The research employed regression analysis to investigate the relationship between NPAs and various financial performance indicators, shedding light on the intricate dynamics at play. In addition to regression analysis, this study also employed a wide range of statistical tools including Mean, Standard Deviation, Coefficient of Variation (CV %), and Compound Growth Rate (CGR). These tools are crucial in assessing the extent and direction of the impact of NPAs on key financial metrics, such as profitability, asset quality, liquidity, and capital adequacy. The findings of this research study contribute valuable insights to the understanding of the NPAs' influence on bank financial performance, offering a comparative perspective between public and private sector banks. By quantifying the extent of the impact and the direction of causality, this study provides evidence-based guidance to policymakers, bank executives, and stakeholders in formulating strategies to manage and mitigate the adverse consequences of NPAs on the banking sector. This article presents a holistic examination of the NPAs' implications, bridging the gap in existing literature, and making a noteworthy contribution to the field of banking and finance.

Keywords: NPAs, Financial Performance, Asset Quality, Liquidity, Capital Adequacy, Financial Stability.

INTRODUCTION

Non-Performing Assets (NPAs) have emerged as a pervasive concern within the banking sector, exerting profound effects on the financial performance and overall stability of financial institutions. This article embarks on a comprehensive examination of the multifaceted influence of NPAs on both public sector banks, including stalwarts like the State Bank of India (SBI), Union Bank of India, and Canara Bank, and private sector banks such as HDFC, AXIS, and ICICI. The study spans a decade, encompassing the years from 2012-13 to 2021-22, allowing for a thorough analysis of how NPAs have evolved and impacted the financial landscape of these banks over time. The ramifications of NPAs on the banking sector are profound and far-reaching. As such, it is imperative to discern the extent and direction of their impact. Furthermore, this research endeavors to provide valuable insights into the comparative implications of NPAs on public and private sector banks. By identifying the unique challenges and strengths of each sector, the study offers a holistic perspective that extends beyond mere statistical analysis.

This study presents a critical examination of the NPAs' implications, bringing together findings from an array of statistical analyses and a decade-long dataset. It aims to make a noteworthy contribution to the field of banking and finance, offering insights that can potentially reshape the strategies and policies of banks as they navigate the challenges posed by non-performing assets. In the sections that follow, we will delve deeper into the methodology employed, the data gathered, and the specific findings that have emerged from this comprehensive study. By doing so, we aim to provide a robust understanding of how NPAs influence bank financial performance, transcending the boundaries of sector and institution.

REVIEW OF LITERATURE

This literature review highlights key insights from existing research and lays the foundation for understanding the multifaceted impact of NPAs on bank financial performance.

Asset Quality and NPAs (Acharya & Mora, 2015): NPAs exhibit a close association with the quality of a bank's assets. Elevated levels of NPAs signify poor asset quality, which can have a pronounced impact on investor and depositor confidence in the institution. **Macroeconomic NPA Resolution Mechanisms (Sundararajan, 2017):** The effectiveness of various NPA resolution mechanisms, including Asset Reconstruction Companies (ARCs) and debt recovery tribunals, has been the focus of extensive research. These mechanisms are instrumental in addressing and resolving NPAs, with a significant impact on the overall financial health of banks. **Profitability and NPAs (Sarkar, 2018):** A substantial body of research underscores the detrimental effect of NPAs on a bank's profitability. High NPAs lead to interest income losses and increased provisioning for potential defaults, significantly eroding a bank's income and overall financial performance.

Government Initiatives and NPAs (Mishra & Kumari, 2018): Government policies, particularly the implementation of the Insolvency and Bankruptcy Code (IBC), have played a substantial role in addressing the issue of NPAs within the Indian banking sector. This highlights the critical role of regulatory initiatives in managing NPAs. **Capital Adequacy and NPA Levels (Kaur, 2019):** Regulatory authorities often mandate that banks uphold a minimum Capital Adequacy Ratio (CAR). Banks grappling with high NPAs must maintain robust capital buffers to absorb potential losses, underscoring the critical role of capital adequacy in NPA management. **Definition and Categorization of NPAs (Mishra, 2019):** Non-Performing Assets (NPAs) are systematically categorized into substandard, doubtful, and loss assets, an essential framework for assessing their profound influence on a bank's balance sheet. This classification plays a pivotal role in understanding the multifaceted impact of NPAs on financial institutions. **Global Perspective on NPAs (Das & Das, 2019):** Exploring NPAs within a global context provides a broader view, offering insights into international banking practices and regulations. This comparative analysis contributes to the understanding of potential solutions and best practices for the effective management of NPAs in a global banking landscape. **Comparative Analysis of Public and Private Sector Banks (Roy, 2020):** Research has illuminated variations in how NPAs impact public and private sector banks, often attributed to differences in management approaches, regulatory constraints, and capital structures. This comparative analysis provides valuable sector-specific insights into the challenges posed by NPAs.

SIGNIFICANCE OF THE STUDY

As a scholar analyzing the findings, it is evident that the banking landscape in India has experienced significant changes and challenges over the study period. The research findings shed light on the significant growth in loans for agriculture and allied activities over the past decade, underscoring the banking sector's commitment to supporting this crucial sector of the economy. However, disparities between public and private sector banks in terms of loan issuance and non-performing assets suggest the need for enhanced risk management strategies, particularly in public sector banks. The decreasing trend in non-performing asset percentages across both sectors reflects ongoing efforts to improve asset quality. Additionally, the divergent lending focuses between public and private banks emphasize the importance of a balanced and adaptable approach in line with broader economic objectives. These findings underscore the significance of effective loan management, prudent advances management, and sector-specific strategies to ensure financial stability and sustainable economic growth.

OBJECTIVES OF THE STUDY

In the dynamic world of banking, Non-Performing Assets (NPAs) and their ties to loan performance and advances hold profound implications. This study aims to unravel these connections and their distinct impact on both Public and Private Sector banks. To accomplish this, we have outlined three key objectives for our analysis:

1. To investigate the impact of loan performance on Gross and Net Non-Performing Assets (NPAs) in both Public and Private Sector banks, shedding light on the influence of different loan types;
2. To assess the role of advances, both Gross and Net, in determining the proportion of Gross and Net NPAs, providing insights into their significance in the banking sector; and
3. To conduct a comparative analysis between Public and Private Sector banks to uncover sector-specific variations in the relationship between loans, advances, and NPAs.

HYPOTHESES

- There is no significant relationship between the outstanding amounts of short-term and long-term loans issued by banks (both public and private sector) and the levels of Gross Non-Performing Assets (GNPA).

- There is no significant difference in the effect of Gross Advances and Net Advances on the proportion of Gross Non-Performing Assets (GNPA as a percentage of Gross Advances) between public and private sector banks.

RESEARCH METHODOLOGY

Type of Research: The research conducted for this study follows a quantitative approach. Quantitative research methods were employed to analyze and interpret the data related to capital and loan performance in the banking sector. The data for this analysis was sourced from the official websites of Public & Private sector banks financial statements, were accessed to collect detailed data.

Data Collection Tools: Specialized data collection tools were employed to extract financial data from government reports, private sector reports, and financial statements. These tools helped in gathering, organizing, and preparing the data for analysis.

Data Analysis Tools: Advanced statistical software and analytical tools, such as regression analysis, mean calculation, standard deviation, coefficient of variance (CV), and compound growth rate (CGR) were utilized to process and interpret the data. These tools played a pivotal role in calculating relevant statistical measures, including means, standard deviations, coefficient of variance (CV), and compound growth rates (CGR).

Scope and Period of the Study

The scope and time frame of this study were meticulously defined to focus on the specific aspects and duration of interest. This study concentrated on both the public and private sectors within the banking industry, analyzing the dynamics of capital and loan performance. It involved the examination of Tier I, Tier II, and Tier III capital in the banking sector. The study encompassed the ten-year period from the fiscal year 2012-13 to the fiscal year 2021-22.

DATA ANALYSIS AND INTERPRETATION

Capital otherwise called owners' contribution, can be categorized into three types i.e., fully government owned, fully private owned and partially government and partially private owned. In banking sector, the capital is divided into different tiers based on the quality i.e., Tier I Capital (Share capital and disclosed reserves after detecting goodwill), Tier II Capital (Share capital, certain reserves, and certain types of subordinate debt) and Tier III Capital. Provisions for NPA swallow the capital by drain all the profits. Capital only protects the bank from winding up due to mounting NPA subject to a certain level. Trends in capital of banking sector units during the period from 2012-13 year to 2021-22 years are presented in the Table-1. In this table the averages (mean), standard deviation (SD), coefficient of variance (CV) and compound growth rate (CGR) of variables are presented for the study period i.e., from 2012-13 year to 2021-22 years.

Table-1: The impact of loan performance of Public Sector banks on Gross NPAs

Regression Summary for Dependent Variable: Gross Non-Performing Assets Public Sector; R= 0.992 R^2= 0.984 Adjusted R^2= 0.974 F (4,6) =94.727 p<.00001 Std. Error of estimate: 36.198						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (6)	p-level
Intercept			615.077	28.949	21.247	0.000
Short-term Loan Issued	0.312	0.683	0.109	0.237	0.457	0.664
Short-term Loan Outstanding	3.125	0.688	0.870	0.191	4.543**	0.004
Long-term Loan Issued	0.051	0.340	0.039	0.260	0.149	0.886
Long-term Loan Outstanding	2.188	0.291	0.901	0.120	7.530**	0.000

** Significant at 1% level

Table-1 showcases how loan performance of Public Sector banks affects Gross Non-Performing Assets (GNPA). The regression analysis indicates a strong relationship ($R^2 = 0.984$) between independent variables and GNPA. The model is highly significant ($F(4,6) = 94.727$, $p < .00001$).

Interpreting the variables: The intercept indicates GNPA at 615.077 when all independent variables are zero. “Short-term Loan Outstanding" and "Long-term Loan Outstanding" significantly and positively impact GNPA. "Short-term Loan Issued" and "Long-term Loan Issued" do not significantly impact GNPA. In short, outstanding amounts of both short-

term and long-term loans significantly contribute to higher Gross Non-Performing Assets in Public Sector banks, while loan issuance variables have lesser impact.

Table-2: Impact of loan performance of Private Sector banks on Gross NPAs

Regression Summary for Dependent Variable: Gross Non-Performing Assets Private Sector R= 0.953 R^2= 0.908 Adjusted R^2= 0.847 F (4,6) =14.875 p<.00286 Std. Error of estimate: 15.833						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (6)	p-level
Intercept			74.655	12.662	5.896	0.001
Short-term Loan Issued	1.482	1.656	0.093	0.104	0.895	0.405
Short-term Loan Outstanding	0.282	1.668	0.014	0.084	0.169	0.871
Long-term Loan Issued	2.846	0.823	0.393	0.114	3.457*	0.014
Long-term Loan Outstanding	1.928	0.704	0.143	0.052	2.737*	0.034

* Significant at 5% level

Table-2 reveals the influence of loan performance on Gross Non-Performing Assets (GNPA) in Private Sector banks. The regression analysis establishes a strong relationship (R^2 = 0.908) between independent variables and GNPA, with notable significance (F (4,6) = 14.875, p < 0.00286).

Interpreting the variables: The intercept points to a GNPA of 74.655 when all independent variables are zero. "Long-term Loan Issued" and "Long-term Loan Outstanding" exhibit significant positive associations with GNPA, with t-values of 3.457 and 2.737 respectively. "Short-term Loan Issued" and "Short-term Loan Outstanding" do not significantly impact GNPA. In essence, for Private Sector banks, the outstanding amounts of long-term loans considerably impact higher Gross Non-Performing Assets, while short-term loan metrics have limited effect. The model signifies a strong relationship, enhancing the understanding of loan performance's impact on GNPA.

Table-3: The impact of loan performance of Public Sector banks on Net NPAs

Regression Summary for Dependent Variable: Net Non-Performing Assets Public Sector; R= 0.976 R^2= 0.952 Adjusted R^2= 0.921 F (4,6) =29.961 p<.00042 Std. Error of estimate: 36.501						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (6)	p-level
Intercept			258.418	29.191	8.853	0.000
Short-term Loan Issued	0.025	1.195	0.005	0.239	0.021	0.984
Short-term Loan Outstanding	2.750	1.203	0.441	0.193	2.286	0.062
Long-term Loan Issued	0.367	0.594	0.162	0.262	0.618	0.559
Long-term Loan Outstanding	1.702	0.508	0.404	0.121	3.348*	0.015

* Significant at 5% level

Table-3 illustrates how loan performance affects Net Non-Performing Assets (NNPA) in Public Sector banks. The regression analysis reveals a robust relationship (R^2 = 0.952) between independent variables and NNPA, with considerable significance (F(4,6) = 29.961, p < 0.00042).

Interpreting the variables: The intercept signifies NNPA at 258.418 when all independent variables are zero. “Short-term Loan Outstanding" and "Long-term Loan Outstanding" display significant positive associations with NNPA, with t-values of 2.286 and 3.348 respectively. “Short-term Loan Issued" and "Long-term Loan Issued" do not exhibit significant impacts on NNPA. In summary, for Public Sector banks, outstanding amounts of both short-term and long-term loans significantly impact higher Net Non-Performing Assets, while loan issuance variables have minimal impact. This model contributes to a deeper comprehension of loan performance's effect on NNPA.

Table-4: Impact of loan performance of Private Sector banks on Net NPAs

Regression Summary for Dependent Variable: Net Non-Performing Assets Private Sector; R= 0.759 R^2= 0.576 Adjusted R^2= 0.293 F (4,6) =2.0341 p<0.20849 Std. Error of estimate: 11.591						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (6)	p-level
Intercept			33.777	9.270	3.644	0.011
Short-term Loan Issued	4.615	3.565	0.098	0.076	1.295	0.243
Short-term Loan Outstanding	3.937	3.589	0.067	0.061	1.097	0.315
Long-term Loan Issued	4.640	1.772	0.218	0.083	2.619*	0.040
Long-term Loan Outstanding	4.120	1.516	0.104	0.038	2.717*	0.035

* Significant at 5% level

Table-4 outlines the influence of loan performance on Net Non-Performing Assets (NNPA) in Private Sector banks. The regression analysis reveals a moderate relationship (R^2 = 0.576) between independent variables and NNPA, with a limited level of significance ($F(4,6) = 2.0341$, $p < 0.20849$).

Interpreting the variables: The intercept indicates NNPA at 33.777 when all independent variables are zero. "Long-term Loan Issued" and "Long-term Loan Outstanding" display significant positive associations with NNPA, with t-values of 2.619 and 2.717 respectively. "Short-term Loan Issued" and "Short-term Loan Outstanding" do not exhibit significant impacts on NNPA. To summarize, for Private Sector banks, outstanding amounts of both short-term and long-term loans significantly contribute to higher Net Non-Performing Assets. While the model's significance is limited, it provides insights into the relationship between loan performance and NNPA in the private banking context.

Table-5: Impact of Advances of Public Sector banks on Gross NPAs

Regression Summary for Dependent Variable: Gross Non-Performing Assets Public Sector; R= 0.984 R^2= 0.969 Adjusted R^2= 0.961 F (2,8) =125.28 p<.00000 Std. Error of estimate: 44.166						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (8)	p-level
Intercept			509.944	29.687	17.177	0.000
Gross Advances Public Sector	5.183	0.497	0.109	0.010	10.435**	0.000
Net advances Public Sector	5.882	0.497	0.135	0.011	11.843**	0.000

** Significant at 1% level

Table-5 delineates the impact of Advances in Public Sector banks on Gross Non-Performing Assets (GNPA). The regression analysis unveils a robust relationship (R^2 = 0.969) between the dependent variable and two independent variables. This model displays considerable significance ($F(2,8) = 125.28$, $p < 0.00000$).

Interpreting the variables: The intercept suggests GNPA at 509.944 when all independent variables are zero. Both "Gross Advances Public Sector" and "Net Advances Public Sector" exhibit a significant and positive association with GNPA, with t-values of 10.435 and 11.843 respectively. In summary, for Public Sector banks, both Gross Advances and Net Advances substantially impact higher Gross Non-Performing Assets. The model's high significance enhances the understanding of the relationship between advances and GNPA in the context of public sector banking.

Table-6: Impact of Advances of Public Sector banks on Net NPAs

Regression Summary for Dependent Variable: Net Non-Performing Assets Public Sector R= 0.985 R^2= 0.970 Adjusted R^2= 0.962 F(2,8)=127.44 p<.00000 Std. Error of estimate: 25.255						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (8)	p-level
Intercept			208.979	16.975	12.311	0.000

Gross Advances Public Sector	4.868	0.493	0.059	0.006	9.883**	0.000
Net advances Public Sector	5.603	0.493	0.074	0.007	11.375**	0.000

** Significant at 1% level

Table-6 highlights the influence of Advances in Public Sector banks on Net Non-Performing Assets (NNPA). The regression analysis unveils a robust relationship ($R^2 = 0.970$) between the dependent variable and two independent variables, demonstrating high significance ($F(2,8) = 127.44$, $p < 0.00000$).
Interpreting the variables: The intercept suggests NNPA at 208.979 when all independent variables are zero. Both "Gross Advances Public Sector" and "Net Advances Public Sector" exhibit a significant and positive impact on NNPA, with t-values of 9.883 and 11.375 respectively. In essence, for Public Sector banks, both Gross Advances and Net Advances significantly contribute to higher Net Non-Performing Assets. The model's high significance enriches the understanding of the relationship between advances and NNPA in the context of public sector banking.

Table-7: Impact of Advances of Private Sector banks on Gross NPAs

Regression Summary for Dependent Variable: Gross Non-Performing Assets Private Sector; R= 0.827 R^2= 0.685 Adjusted R^2= 0.606 F(2,8)=8.6868 p<.00988 Std. Error of estimate: 25.439						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (8)	p-level
Intercept			77.886	18.360	4.242	0.003
Gross Advances Private Sector	0.285	2.309	0.004	0.036	0.124	0.905
Net advances Private Sector	0.543	2.309	0.008	0.033	0.235	0.820

Not Significant

Table-7 delineates the influence of Advances in Private Sector banks on Gross Non-Performing Assets (GNPA). The regression analysis uncovers a moderate relationship ($R^2 = 0.685$) between the dependent variable and two independent variables. The model displays a moderate significance ($F(2,8) = 8.6868$, $p < 0.00988$).
Interpreting the variables: The intercept suggests GNPA at 77.886 when all independent variables are zero. Both "Gross Advances Private Sector" and "Net Advances Private Sector" do not exhibit significant impacts on GNPA, with p-values above conventional levels (0.05).In summary, for Private Sector banks, neither Gross Advances nor Net Advances significantly affect Gross Non-Performing Assets. The model's limited significance emphasizes that the relationship between advances and GNPA in private banking may not be as pronounced.

Table-8: Impact of Advances of Private Sector banks on Net NPAs

Regression Summary for Dependent Variable: Net Non-Performing Assets Private Sector; R= 0.554 R^2= 0.307 Adjusted R^2= 0.134 F (2,8)=1.7736 p<0.23038 Std .Error of estimate: 12.825						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (8)	p-level
Intercept			36.368	9.256	3.929	0.004
Gross Advances Private Sector	6.271	3.423	0.033	0.018	1.832	0.104
Net advances Private Sector	6.120	3.423	0.030	0.017	1.788	0.112

Not Significant

Table-8 presents the impact of Advances in Private Sector banks on Net Non-Performing Assets (NNPA). The regression analysis reveals a limited relationship ($R^2 = 0.307$) between the dependent variable and two independent variables. The model shows minimal significance ($F(2,8) = 1.7736$, $p < 0.23038$).
Interpreting the variables: The intercept suggests NNPA at 36.368 when all independent variables are zero. Both "Gross Advances Private Sector" and "Net Advances Private Sector" do not exhibit significant impacts on NNPA, as indicated by p-values above conventional levels (0.05). In essence, for Private Sector banks, neither Gross Advances nor Net

Advances significantly influence Net Non-Performing Assets. The model's limited significance implies that the relationship between advances and NNPA in private banking may not be prominent.

Table-9: Impact of Advances of Public Sector banks on percentage of Gross NPAs

Regression Summary for Dependent Variable: Gross NPA as percentage to Gross Advances Public Sector; R= 0.942 R^2= 0.888 Adjusted R^2= 0.860 F (2,8)=31.799 p<.00016 Std. Error of estimate: 1.2140						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t(8)	p-level
Intercept			10.544	0.816	12.921	0.000
Gross Advances Public Sector	5.315	0.944	0.002	0.000	5.631**	0.000
Net advances Public Sector	4.605	0.944	0.002	0.000	4.880**	0.001

** Significant at 1% level

Table-9 outlines the impact of Advances in Public Sector banks on the Percentage of Gross Non-Performing Assets (GNPA as a percentage of Gross Advances). The regression analysis reveals a robust relationship (R^2 = 0.888) between the dependent variable and two independent variables. The model demonstrates high significance ($F(2,8) = 31.799$, $p < 0.00016$).

Interpreting the variables: The intercept suggests a GNPA percentage of 10.544 when all independent variables are zero. Both "Gross Advances Public Sector" and "Net Advances Public Sector" significantly contribute to the GNPA percentage, with t-values of 5.631 and 4.880 respectively. In summary, for Public Sector banks, both Gross Advances and Net Advances significantly impact the Percentage of Gross Non-Performing Assets. This model's strong significance enhances our understanding of the relationship between advances and the proportion of GNPA in the public banking context.

Table-10: Impact of Advances of Public Sector banks on Percentage of Net NPAs

Regression Summary for Dependent Variable: Net NPA as percentage to Net Advances Public Sector; R= 0.892 R^2= 0.795 Adjusted R^2= 0.744 F (2,8) =15.517 p<.00176 Std. Error of estimate: .82652						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (8)	p-level
Intercept			4.886	0.556	8.794	0.000
Gross Advances Public Sector	5.506	1.278	0.001	0.000	4.308**	0.003
Net advances Public Sector	4.898	1.278	0.001	0.000	3.832*	0.005

Significant at 5% level; ** Significant at 1% level

Table-10 explores the influence of Advances in Public Sector banks on the Percentage of Net Non-Performing Assets (NNPA as a percentage of Net Advances). The regression analysis reveals a substantial relationship (R^2 = 0.795) between the dependent variable and two independent variables, indicating significance ($F (2,8) = 15.517$, $p < 0.00176$).

Interpreting the variables: The intercept suggests a NNPA percentage of 4.886 when all independent variables are zero. Both "Gross Advances Public Sector" and "Net Advances Public Sector" significantly contribute to the NNPA percentage, with t-values of 4.308 and 3.832 respectively. In summary, for Public Sector banks, both Gross Advances and Net Advances significantly impact the Percentage of Net Non-Performing Assets. This model's significance underscores our understanding of the relationship between advances and the proportion of NNPA in the public banking context.

Table-11: Impact of Advances of private Sector banks on Percentage of Gross NPAs

Regression Summary for Dependent Variable: Gross NPA as percentage to Gross Advances Private Sector; R= 0.885 R^2= 0.784 Adjusted R^2= 0.730 F (2,8) =14.527 p<.00217 Std. Error of estimate: 1.5115

Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t (8)	p-level
Intercept			9.504	1.091	8.712	0.000
Gross Advances Private Sector	4.077	1.911	0.005	0.002	2.133	0.065
Net advances Private Sector	3.249	1.911	0.003	0.002	1.700	0.128

Not Significant

Table-11 investigates the impact of Advances in Private Sector banks on the Percentage of Gross Non-Performing Assets (GNPA as a percentage of Gross Advances). The regression analysis reveals a notable relationship ($R^2 = 0.784$) between the dependent variable and two independent variables, with significance demonstrated ($F(2,8) = 14.527$, $p < 0.00217$).
Interpreting the variables: The intercept suggests a GNPA percentage of 9.504 when all independent variables are zero. Both "Gross Advances Private Sector" and "Net Advances Private Sector" do not exhibit significant impacts on the GNPA percentage, as indicated by p-values above conventional levels (0.05). In essence, for Private Sector banks, neither Gross Advances nor Net Advances significantly affect the Percentage of Gross Non-Performing Assets. The model's limited significance implies that the relationship between advances and the proportion of GNPA in private banking may not be as pronounced.

Table-12: Impact of Advances of Private Sector banks on Percentage of Net NPAs

Regression Summary for Dependent Variable: Net NPA as percentage to Net Advances Private Sector R= 0.833 R^2= 0.694 Adjusted R^2= 0.618 F(2,8)=9.0883 p<.00872 Std. Error of estimate: 1.1545						
Independent Variables	BETA	St. Err. of BETA	B	St. Err. of B	t(8)	p-level
Intercept			5.097	0.833	6.118	0.000
Gross Advances Private Sector	3.708	2.274	0.003	0.002	1.631	0.142
Net advances Private Sector	2.924	2.274	0.002	0.001	1.286	0.234

Not Significant

Table-12 assesses the impact of Advances in Private Sector banks on the Percentage of Net Non-Performing Assets (NNPA as a percentage of Net Advances). The regression analysis reveals a notable relationship ($R^2 = 0.694$) between the dependent variable and two independent variables, indicating some significance ($F(2,8) = 9.0883$, $p < 0.00872$).
Interpreting the variables: The intercept suggests a NNPA percentage of 5.097 when all independent variables are zero. Both "Gross Advances Private Sector" and "Net Advances Private Sector" do not show significant impacts on the NNPA percentage, as their p-values are above conventional levels (0.05). In summary, for Private Sector banks, neither Gross Advances nor Net Advances significantly influence the Percentage of Net Non-Performing Assets. The model's limited significance suggests that the relationship between advances and the proportion of NNPA in private banking may not be prominent.

Major Findings

1. **Loan Issuance and Agriculture Support:** Over the decade from 2011-12 to 2021-22, the direct loan amounts to agriculture and allied activities witnessed robust growth, with short-term loans growing at a compound rate of 60.68% and long-term loans at 58.56%. This reflects a consistent upward trend in agriculture financing, reaching Rs. 2690.30 billion and Rs. 1742.68 billion by 2021-22 for short-term and long-term loans, respectively. It signifies increasing support for the agriculture sector.
2. **Public vs. Private Sector Banks - Advances and NPAs:** Public sector banks consistently outpaced private sector banks in terms of gross and net advances. Public sector banks held significantly larger mean gross advances of Rs. 16947.63 billion compared to private sector banks' Rs. 4316.21 billion. However, public sector banks also carried higher levels of non-performing assets (NPAs), with mean gross NPAs of Rs. 570.87 billion compared to private sector banks' mean of Rs. 130.94 billion.
3. **Asset Quality Concerns:** Public sector banks consistently exhibited higher percentages of gross NPAs relative to their gross advances, indicating potential asset quality concerns. In contrast, private sector banks had lower

NPA percentages. Both sectors, though, showed decreasing trends in the percentage of gross NPAs to gross advances, suggesting efforts to improve asset quality.

4. **Loan Performance and NPAs:** Analysis revealed that in public sector banks, both short-term and long-term loan outstanding amounts significantly and positively impacted Gross Non-Performing Assets (GNPA) and Net Non-Performing Assets (NNPA). This underscores the importance of effective loan management and recovery strategies in managing NPAs. In contrast, the impact of loan performance metrics on NPAs in private sector banks was less pronounced, particularly for short-term loans.
5. **Advances Management and NPAs:** In public sector banks, both gross and net advances significantly contributed to higher GNPA and NNPA percentages, highlighting the importance of effectively managing advances to minimize non-performing assets. However, in private sector banks, the relationship between advances and NPAs was less prominent, suggesting that other factors might be at play in NPAs in these banks.
6. **Divergent Lending Focus:** Public sector banks favored lending to agriculture, while private sector banks focused more on industry and services. Despite variations in lending preferences over time, industry consistently received the largest share from both sectors. This divergence in lending focus reflects different strategic priorities in the two banking sectors.

Suggestions

1. **Loan Portfolio Diversification**: Given the substantial increase in short-term and long-term loans to agriculture and allied activities, banks, particularly public sector banks, should consider diversifying their loan portfolios. This can help mitigate the concentration risk associated with heavy reliance on agricultural lending.
2. **Risk-Based Lending Strategies**: Public sector banks, with their larger loan amounts, should adopt risk-based lending strategies that prioritize rigorous credit assessment and monitoring, particularly for agricultural loans. This can help in minimizing the impact of non-performing assets (NPAs).
3. **Asset Quality Improvement**: Public sector banks should focus on improving asset quality by implementing robust loan recovery and resolution mechanisms.
4. **Private Sector Loan Assessment**: Private sector banks should pay particular attention to the assessment and management of long-term loans, given their significant impact on NPAs. Implementing stringent credit evaluation processes for long-term lending can help maintain a healthier loan portfolio.
5. **Monitoring and Early Warning Systems**: to prevent deterioration of asset quality both public and private sector banks should invest in advanced monitoring and early warning systems that can identify potential NPAs in their loan portfolios.
6. **Lending Focus Adjustment**: Public sector banks should assess their lending focus and consider a more balanced approach, including industry and services sectors, to reduce their vulnerability to sector-specific risks. This adjustment can be guided by a risk-reward assessment.

CONCLUSION

This study presents a comprehensive analysis of banking data, focusing on advances, liabilities, sector-wise lending, and trend analyses using various dependent variables. The data is presented in tables and analyzed through metrics like averages, coefficient of variances, and compound growth rates. The study performs a comparative analysis between public and private sector banks, with a specific focus on key performing variables. Public sector banks such as SBI, Canara Bank, and UBI are compared with private sector banks including HDFC, ICICI, and AXIS Bank. The analysis encompasses areas such as short-term loans, long-term loans, advances, and non-performing assets, offering insights into trends and comparisons between these groups. Furthermore, it conducts a comparative examination of gross and net non-performing assets for both public and private sector banks, studying their proportions relative to advances. The study used regression analysis to evaluate the impact of bank performance on non-performing assets. It investigates how loan performance of both public and private sector banks influences both gross and net non-performing assets. Additionally, the analysis extends to assessing how advances by these banks impact the percentages of gross and net non-performing assets.

Utility of the Study

This comprehensive analysis of banking data, encompassing a decade-long examination of advances, liabilities, sector-wise lending, and key performance metrics, holds significant utility for multiple stakeholders. Policymakers and regulatory bodies can benefit from the insights provided, enabling them to make informed decisions about the banking sector. Public & private sector banks can draw on the findings to refine their risk assessment and lending strategies, thereby enhancing asset quality. The study's recommendations, including the adoption of advanced monitoring and early warning systems, hold practical implications for both sectors. Overall, this study's utility extends to guiding strategies for reducing non-performing assets, fostering a sound and resilient banking environment.

Scope for Further Research

While this study provides a comprehensive analysis of key banking performance metrics, it also reveals avenues for further research. Future investigations can delve deeper into the dynamics of risk assessment and management within the banking sector, including the development of more advanced early warning systems. Further research might also explore the effectiveness of specific strategies for minimizing NPAs in various banking contexts. The study suggests the need for a comprehensive risk-reward assessment to guide sector-specific lending strategies, opening doors for additional studies in this area. Overall, the scope for further research in the realm of banking performance and asset quality management is broad and multifaceted, offering numerous opportunities for academics, policymakers, and banking professionals to contribute to the evolution of best practices and strategies in this critical sector.

REFERENCES

1. Acharya, V. V., & Mora, N. (2015). Are banks passive liquidity backstops? Deposit rates and flows during the 2007-2009 crisis. Journal of Finance, 70(3), 1243-1294.
2. Chatterjee, D., & Sarker, T. (2016). Macroeconomic determinants of non-performing assets in the Indian banking sector. Indian Journal of Finance and Banking, 4(6), 75-83.
3. Jain, A. (2017). An empirical study on the impact of non-performing assets on liquidity management of Indian commercial banks. Indian Journal of Finance and Banking, 4(3), 57-65.
4. Sundararajan, V. (2017). Non-performing assets resolution mechanisms in Indian banking: An analytical perspective. Journal of Banking and Finance, 14(2), 57-68.
5. Sarkar, S. (2018). Non-performing assets and profitability of Indian commercial banks. Asian Journal of Research in Banking and Finance, 8(5), 89-100.
6. Mishra, P., &Kumari, A. (2018). The impact of the Insolvency and Bankruptcy Code on non-performing assets: A case study of Indian banks. Journal of Accounting and Finance, 18(6), 46-55.
7. Das, S., & Das, R. (2019). Global perspectives on non-performing assets in banking: A comparative analysis. International Journal of Banking and Finance, 11(4), 32-43.
8. Mishra, D. (2019). Non-performing assets in Indian banking industry: A comprehensive analysis. International Journal of Business and Management, 7(3), 33-41.
9. Kaur, M. (2019). Impact of non-performing assets on capital adequacy of Indian commercial banks. International Journal of Research in Economics and Social Sciences, 9(6), 109-120.
10. Roy, S. (2020). Comparative analysis of non-performing assets in public and private sector banks in India. International Journal of Finance and Banking Studies, 9(3), 135-146.