IMPACT OF BANK CONSOLIDATION ON ASSET QUALITY AND PROFITABILITY OF SELECTED INDIAN PUBLIC SECTOR BANKS: A PRE- AND POST-CONSOLIDATION ANALYSIS

Mr. Devaraju N, Assistant Professor and Research Scholar, Department of MBA and Research Centre, East West Institute of Technology, Bengaluru, Visvesvaraya Technological University, Belagavi,

Dr. Prathap B N, Professor and Research Supervisor, Department of MBA and Research Centre, East West Institute of Technology Bengaluru, Visvesvaraya Technological University, Belagavi,

ABSTRACT

This study examines the financial performance of selected Indian Public Sector Banks (PSBs) across the pre- and post-consolidation periods associated with the major banking amalgamations implemented in 2020. The study focuses on four anchor banks—Punjab National Bank, Canara Bank, Union Bank of India and Indian Bank—and analyses secondary financial data covering FY2017–18 to FY2024–25. Gross Non-Performing Asset Ratio (GNPA) and Return on Assets (ROA) are used to assess asset quality and profitability, respectively. The study adopts a quantitative, descriptive and comparative research design. Bank-wise annual data are analysed using mean, standard deviation, percentage change, comparative analysis and paired-sample t-tests. The findings indicate a substantial improvement in asset quality, with the overall mean GNPA declining from 11.61% during the pre-consolidation period to 7.75% during the post-consolidation period, representing a reduction of 3.85 percentage points. Profitability also improved, with average ROA increasing from -0.23% to 0.61%, representing an improvement of 0.84 percentage points. The paired-sample analysis indicates a statistically significant difference in ROA, while the GNPA difference is marginally significant at the 5% level. The findings indicate improved financial performance during the post-consolidation period, while recognising that other banking reforms and economic developments may also have contributed to these changes.

Keywords: Public Sector Banks, Bank Consolidation, GNPA, ROA, Financial Performance, Asset Quality, India.

INTRODUCTION

Public Sector Banks (PSBs) have historically occupied a central position in the Indian financial system by mobilising household savings, providing institutional credit and supporting government priorities such as agricultural finance, infrastructure development, small and medium enterprises, financial inclusion and social welfare. Their role extends beyond conventional profit maximisation because they are expected to balance commercial objectives with developmental responsibilities. The post-liberalisation period brought significant changes in the competitive environment of Indian banking, with technological development, prudential regulation, capital adequacy requirements and increasing competition from private-sector banks influencing the performance of PSBs. Research on Indian banks has shown that ownership, capital adequacy, asset quality, bank size and management-related factors can

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

influence technical efficiency and financial performance. In particular, research by Drake and Hall (2006) demonstrated the relevance of efficiency differences among Indian banks and identified ownership and bank-specific characteristics as important considerations in evaluating performance. During the following decade, the expansion of bank credit was accompanied by increasing stress in corporate and infrastructure lending, eventually resulting in a substantial increase in non-performing assets (NPAs). RBI data show that the gross NPA ratio of PSBs increased from 2.2% in 2007–08 to 14.6% in 2017–18, while gross NPAs increased from ₹40,452 crore to ₹8.96 lakh crore during the same broad period. These developments created the need for structural and institutional reforms aimed at strengthening the financial and operational capacity of PSBs.

The period preceding large-scale consolidation was characterised by considerable deterioration in asset quality, profitability pressures, capital requirements and operational challenges among several PSBs. Rapid credit expansion during the preceding years, particularly to infrastructure and corporate sectors, was followed by rising stressed assets. The Asset Quality Review (AQR) initiated by the Reserve Bank of India in 2015 resulted in greater recognition of stressed loans and contributed to the visible increase in reported NPAs. Consequently, the gross NPA ratio of PSBs reached a peak of 14.58% in March 2018, compared with 4.97% in March 2015. The corresponding gross NPA amount increased from ₹2.79 lakh crore in March 2015 to ₹8.96 lakh crore in March 2018. The deterioration in asset quality strengthened the argument for recapitalisation, improved governance, better risk management and consolidation. Earlier policy discussions had also considered consolidation as a mechanism for creating stronger institutions with greater scale and risk-bearing capacity. The Government subsequently pursued consolidation through a sequence of major mergers. The merger of State Bank of India with its associate banks and Bharatiya Mahila Bank became effective in April 2017, followed by the amalgamation of Vijaya Bank and Dena Bank with Bank of Baroda in April 2019. These measures were intended to create larger institutions, achieve economies of scale, reduce duplication, strengthen capital and technology capabilities, and improve the ability of PSBs to compete in an increasingly technology-driven banking environment.

The most significant structural transformation occurred with the 2020 PSB consolidation programme, under which ten PSBs were amalgamated into four anchor banks with effect from 1 April 2020. Oriental Bank of Commerce and United Bank of India were amalgamated with Punjab National Bank; Syndicate Bank with Canara Bank; Andhra Bank and Corporation Bank with Union Bank of India; and Allahabad Bank with Indian Bank. The Government stated that the objective was to create banks with greater scale, operational synergies, improved risk management, stronger technological capabilities and the capacity to support larger lending requirements. Consolidation therefore represents more than a change in ownership structure; it potentially affects the scale of operations, branch networks, human resources, capital utilisation, cost efficiency, asset quality, profitability and technological adoption. Empirical research after the mergers has produced important but not completely uniform findings. (Jegadeeshwaran & Basuvaraj,2021), for example, examined operational efficiency and financial indicators of selected PSBs before and after mergers. More recent research has employed CAMELS, DEA, Malmquist productivity and other quantitative approaches to examine whether the anticipated benefits of consolidation were actually realised. A 2024 study of six recently merged PSBs reported improvements in financial efficiency during the post-merger period, while a 2026 study using DEA, Malmquist and SFA found post-merger technical-efficiency improvements in several merged PSBs but also identified continuing labour-related inefficiencies.

The post-consolidation period provides an important basis for evaluating whether structural consolidation has been accompanied by measurable improvements in banking

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

performance. Available evidence indicates a substantial improvement in the asset-quality position of PSBs after the peak observed in 2018. According to the Department of Financial Services, the gross NPA ratio of PSBs declined from 14.58% in March 2018 to 3.47% in March 2024 and 2.58% in March 2025, while the net NPA ratio declined from 7.97% to 0.76% and 0.52%, respectively. The provision coverage ratio also increased from 62.71% in March 2018 to 94.31% in March 2025, indicating substantially greater provisioning against stressed assets. Profitability has simultaneously strengthened: aggregate net profit of PSBs increased from approximately ₹31,820 crore in FY2020–21 to ₹1,41,202 crore in FY2023–24 and ₹1,78,364 crore in FY2024–25. The latest Department of Financial Services data also report that PSBs recorded ₹0.94 lakh crore aggregate net profit during the first half of FY2025–26. Capital adequacy has also improved, with PSB CRAR increasing from 11.45% in March 2015 to 16.10% in March 2025. These indicators suggest a considerable strengthening of financial resilience during the post-consolidation period. However, improvements cannot automatically be attributed solely to mergers because other factors—including AQR, recapitalisation, recovery mechanisms, provisioning, regulatory reforms, digitisation and broader economic conditions—also influenced PSB performance. Therefore, a systematic pre- and post-consolidation assessment remains necessary.

TABLE 1
HISTORICAL ASSET-QUALITY POSITION OF PUBLIC SECTOR BANKS

Year	Gross NPA (₹ crore)	Gross NPA (%)	Net NPA (₹ crore)	Net NPA (%)
2017–18	8,95,601	14.58	4,54,473	7.97
2018–19	7,39,541	11.59	2,85,123	4.80
2019–20	6,78,317	9.14	2,89,019	3.37
2020–21	6,16,616	9.11	2,81,906	3.10
2021–22	5,40,958	7.28	1,74,532	2.00
2022–23	4,28,197	4.97	1,02,573	1.24
2023–24	3,39,541	3.47	73,653	0.76
2024–25	2,83,650	2.58	55,123	0.52

Source: *Reserve Bank of India, Statistical Tables Relating to Banks in India.*

The consolidation of Indian PSBs represents a major institutional transformation whose long-term implications require systematic empirical examination. Although existing studies have examined individual mergers, operational efficiency, profitability, liquidity, CAMELS indicators and productivity, the post-consolidation period continues to provide scope for comprehensive analysis using a wider range of financial and operational indicators. Recent research illustrates this point: Bhatia and Mahendru (2026), examining 12 PSBs during 2020–21 to 2022–23, reported an average Malmquist productivity index of 1.022, with technological change contributing to productivity improvement. Conversely, other recent research has reported that efficiency improvements differ across banks and that merger outcomes are not necessarily uniform. Therefore, the present study, titled "A Study on Performance of Indian Public Sector Banks in Pre & Post Consolidation Era," seeks to examine the changes in PSB performance across the pre- and post-consolidation periods using appropriate financial and operational indicators. The study can focus on parameters such as profitability, asset quality, capital adequacy, liquidity, operational efficiency, business growth and productivity. A comparison of these indicators can provide evidence regarding the extent to which the consolidation process has coincided with changes in PSB performance. Importantly, the study should distinguish the observed post-consolidation changes from the causal effect of

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

consolidation, since several banking reforms occurred simultaneously. Such an approach will provide a more balanced assessment of the transformation of Indian PSBs from fragmented institutions into a smaller number of larger banking entities.

Problem Statement

The consolidation of Indian Public Sector Banks in 2020 represented one of the most significant structural reforms in the Indian banking sector, with ten public sector banks amalgamated into four anchor institutions. The policy was intended to create stronger and more competitive banking institutions through economies of scale, operational synergies, improved risk management, technological capabilities and enhanced capacity to support credit growth. However, the existence of a merger does not automatically establish that the expected financial and operational benefits have been realised. The period following consolidation also coincided with several other developments, including improved recovery of stressed assets, recapitalisation, provisioning, regulatory interventions, digitisation and post-pandemic economic recovery. Consequently, it is necessary to empirically examine whether measurable changes occurred in the financial performance of the major anchor banks during the period following consolidation.

Although previous studies have examined bank mergers, efficiency, profitability, asset quality and productivity in India, evidence remains fragmented across individual banks, specific mergers and different analytical periods. In particular, comparatively limited attention has been given to a consistent pre- and post-consolidation comparison of the four major anchor banks created through the 2020 consolidation using common financial indicators over a sufficiently extended period. The present study therefore addresses this issue by comparing Gross Non-Performing Assets and Return on Assets of Punjab National Bank, Canara Bank, Union Bank of India and Indian Bank across pre- and post-consolidation periods. The study seeks to identify the direction and magnitude of changes in asset quality and profitability while recognising that observed changes cannot be attributed exclusively to the consolidation programme.

Need and Significance of the Study

The significance of the present study arises from the continuing importance of Public Sector Banks in India's financial system and the structural transformation created by the 2020 consolidation programme. The amalgamation of ten PSBs into four anchor banks substantially changed the organisational scale and operational structure of the participating institutions. Evaluating the financial consequences of this transformation is therefore relevant to researchers, banking managers, regulators and policymakers. In particular, asset quality and profitability remain important indicators of banking-sector resilience because high levels of stressed assets can increase provisioning requirements and constrain profitability, while stronger returns on assets indicate improved utilisation of the banking asset base. A systematic comparison of these indicators before and after consolidation can therefore provide evidence regarding the direction of financial performance during the post-consolidation period.

The study is also significant because the improvement in PSB performance after 2020 occurred in a broader policy and economic environment. Measures relating to capital infusion, stressed-asset resolution, provisioning, recovery mechanisms, technological transformation and regulatory supervision may have simultaneously influenced bank performance. Consequently, the present study does not treat the post-consolidation improvement as evidence of a purely merger-driven effect. Instead, it provides a structured empirical comparison that can serve as a foundation for more sophisticated future research using control groups, difference-in-differences approaches, efficiency models and productivity analysis. The

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

findings may also assist future researchers in understanding variations among the four anchor banks rather than treating consolidated PSBs as a homogeneous group.

Review of Literature

(Kumar,2008) studied the relationship between efficiency and profitability in Indian public sector banks using Data Envelopment Analysis (DEA). The study considered 27 public sector banks and measured their technical efficiency and profitability. The findings reported an average technical efficiency of 88.5%, indicating scope for improvement in the utilisation of banking inputs. The study also observed differences between State Bank Group banks and nationalised banks in operating efficiency. The study established that efficiency is an important dimension for assessing the overall performance of PSBs.

(Kumbhakar &Sarkar, 2003) investigated productivity and efficiency developments in the Indian banking sector during the post-reform period. Their analysis highlighted the importance of technological change and efficiency improvement in determining banking productivity. The study indicated that changes in banking technology significantly influenced productivity across Indian banks. It also suggested that improvements in scale and resource utilisation were necessary for strengthening banking performance. The findings are relevant to the later consolidation strategy adopted for public sector banks.

(Sathye, 2003) analysed the efficiency of Indian banks in the context of increasing competition and financial-sector reforms. The study emphasised that banks needed to improve cost efficiency and resource utilisation to remain competitive. It highlighted technological development, managerial practices and scale economies as important determinants of banking efficiency. The findings suggested that simply increasing the size of banking operations would not necessarily guarantee higher efficiency. These observations are particularly relevant when evaluating whether consolidation actually improves PSB performance.

(Kaur H V, 2010) studied the financial performance of Indian commercial banks using CAMEL-related indicators. The study compared different dimensions of banking performance, including capital adequacy, asset quality, management efficiency, earnings and liquidity. The findings demonstrated that banks differed substantially in their financial strength across these dimensions. The study highlighted CAMEL analysis as an appropriate framework for evaluating banking-sector performance. Such multidimensional assessment is useful for comparing PSB performance before and after structural reforms.

(Goyal & Joshi, 2012) studied the changing competitive environment of Indian banking and the implications for public sector banks. The study highlighted increasing competition from private and foreign banks and the need for PSBs to strengthen their operational and technological capabilities. It observed that traditional banking practices could constrain efficiency and profitability. The authors emphasised technology adoption, customer service and managerial effectiveness as important factors in improving bank performance. The study provides background for understanding why consolidation became one of the possible strategies for strengthening PSBs.

(Basuvaraj&Jegadeeshwaran,2017)examined the financial and operational implications of mergers involving Indian public sector banks. The study focused on indicators such as profitability, liquidity and operational performance in the pre- and post-merger periods. The researchers observed that merger outcomes differed across individual banks and that improvements were not uniform across all financial indicators. The study highlighted that integration, asset quality and operating costs influence the success of bank mergers. It therefore suggested that merger performance should be evaluated using multiple financial indicators rather than a single profitability measure.

(Prasad &Bhavani,2018) studied the financial performance of Indian public sector banks during a period of increasing asset-quality problems. The study highlighted the growing

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

importance of non-performing assets, capital adequacy and profitability in evaluating PSB performance. The deterioration in asset quality was identified as a major constraint on bank profitability and financial stability. The study suggested that effective recovery mechanisms and stronger credit-risk management were necessary to improve performance. These findings are especially relevant to the period immediately preceding large-scale consolidation.

(Basuvaraj & Jegadeeshwaran, 2019) analyzed profitability and liquidity in selected public sector banks in India during pre- and post-merger periods. The study used financial ratios to assess changes in profitability, liquidity and operational performance. The findings indicated that merger outcomes varied between banks and across financial indicators. The researchers concluded that mergers could potentially improve certain dimensions of financial performance but that the benefits depended on the characteristics of the participating banks. The study provides an important empirical foundation for analysing later consolidation initiatives.

(Sandhya,2022) explored the impact of public sector bank mergers on profitability, solvency, liquidity and operational performance. Their study compared financial indicators before and after mergers and highlighted differences in the outcomes of individual merged banks. The findings suggested that merger effects should not be considered uniform across all PSBs. The researchers emphasised that financial strength, integration and operating efficiency influence post-merger outcomes. The study is useful for establishing a multidimensional approach to assessing PSB consolidation.

(Swami & Saradhi,2025) examined the financial performance and efficiency of Punjab National Bank, Canara Bank, Union Bank of India and Indian Bank following the 2020 mega-merger. The study used DEA and multilinear regression to examine efficiency, productivity, NPAs, risk management and liquidity. The research specifically focused on the four anchor banks created through the consolidation of ten PSBs. It provides evidence for evaluating whether the post-2020 restructuring generated improvements in financial and operational performance.

(Hiremath & Kudachimath, 2025) analyzed the financial performance of four anchor banks following the 2020 mega-merger. The researchers compared FY2017–19 with FY2021–24 using ROA, ROE, Cost-to-Income Ratio, NIM, GNPA and NNPA. Their statistical analysis using descriptive measures and paired-sample tests reported significant improvement in profitability and operational efficiency. However, asset-quality indicators experienced initial stress before subsequently improving. The study indicates that post-merger performance needs to be evaluated over several years rather than immediately after amalgamation (Roopesh & Sandhya, 2022).

Research Gap

The review of literature shows that several studies have examined the efficiency, profitability, liquidity, asset quality and productivity of Indian Public Sector Banks. However, most studies have focused on selected banks, individual mergers or specific financial indicators rather than examining the overall performance of PSBs before and after the consolidation era. There is also limited research covering a longer period and combining different dimensions such as profitability, asset quality, capital adequacy, liquidity, operational efficiency and productivity. Further, the improvement in PSB performance after 2020 may also be influenced by other reforms such as recapitalisation, recovery measures, provisioning, digitisation and regulatory changes. Therefore, there is a need for a comprehensive study comparing the financial and operational performance of Indian Public Sector Banks in the pre- and post-consolidation periods.

Objectives of the Study

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

- To examine the financial performance of selected Indian Public Sector Banks during the pre- and post-consolidation periods.
- To compare the asset quality and profitability of selected Public Sector Banks using Gross Non-Performing Assets (GNPA) and Return on Assets (ROA).
- To analyse the changes in GNPA and ROA of Punjab National Bank, Canara Bank, Union Bank of India and Indian Bank across the pre- and post-consolidation periods.
- To determine whether the differences in selected financial performance indicators between the pre- and post-consolidation periods are statistically significant.

Conceptual Framework

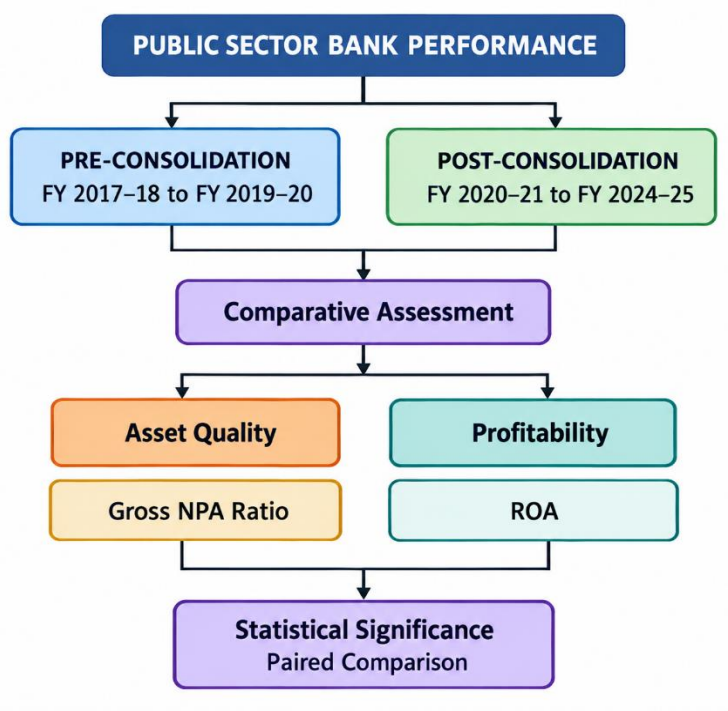


FIGURE 1 CONCEPTUAL FRAMEWORK FOR COMPARATIVE ASSESSMENT OF PUBLIC SECTOR BANK PERFORMANCE

METHODOLOGY

The study adopts a quantitative, descriptive and comparative research design to examine changes in the financial performance of selected Indian Public Sector Banks (PSBs) across the pre- and post-consolidation periods. The population of the study comprises Public Sector Banks operating in India, while the sample consists of four anchor banks—Punjab National Bank (PNB), Canara Bank, Union Bank of India and Indian Bank—that emerged as the principal institutions under the Government of India's major PSB consolidation programme implemented in 2020. These banks were purposively selected because PNB absorbed Oriental Bank of Commerce and United Bank of India, Canara Bank absorbed Syndicate Bank, Union Bank of India absorbed Andhra Bank and Corporation Bank, and Indian Bank absorbed Allahabad Bank. The study covers eight financial years from FY2017–18 to FY2024–25. FY2017–18, FY2018–19 and FY2019–20 are classified as the pre-consolidation period, while FY2020–21 to FY2024–25 constitute the post-consolidation period. FY2019–20 is considered the final full financial year preceding implementation because the major amalgamations became effective from 1 April 2020. The study is based entirely on secondary data collected

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

from authoritative sources, including the annual reports of the four selected banks, the Reserve Bank of India (RBI), the Department of Financial Services (DFS), Ministry of Finance, Government of India, and other relevant official banking publications. The principal performance indicators selected for the analysis are Gross Non-Performing Asset Ratio (GNPA) and Return on Assets (ROA). GNPA is used as an indicator of asset quality and is measured as gross non-performing assets relative to gross advances, with a lower value representing improvement in asset quality. ROA is used as a measure of profitability and represents the bank's ability to generate net profit from its asset base, with a higher value indicating improved profitability. The selection of these two indicators enables the study to examine two complementary dimensions of PSB performance—asset quality and profitability—during the periods before and after consolidation.

The collected data are systematically organised on a bank-wise and year-wise basis to facilitate comparison between the two study periods. The analysis employs both descriptive and inferential statistical techniques. Mean and standard deviation are used to summarise the central tendency and variation of GNPA and ROA, while percentage change and mean differences are calculated to determine the magnitude and direction of changes between the pre- and post-consolidation periods. Annual trend analysis is also undertaken to identify the movement of GNPA and ROA over the eight-year study period and to examine whether improvements were consistent across individual banks. A paired-sample t-test is employed to determine whether the difference between the pre- and post-consolidation performance measures is statistically significant. For the inferential comparison, the pre-consolidation mean and post-consolidation mean of each indicator are paired for the four selected anchor banks, resulting in four paired observations and three degrees of freedom. However, because the analysis covers only four anchor banks and the post-consolidation period coincides with other major developments—including NPA recovery and resolution measures, recapitalisation, provisioning changes, regulatory reforms, digitisation, and post-pandemic economic recovery—the statistical results are interpreted as evidence of observed differences between the two periods rather than definitive proof that consolidation alone caused the changes. This approach provides a structured basis for assessing the extent to which the financial performance of the selected PSBs changed following the 2020 consolidation programme while recognising the broader institutional and economic factors that may have influenced their performance.

DATA ANALYSIS AND INTERPRETATION

TABLE 2
MEASUREMENT OF FINANCIAL PERFORMANCE INDICATORS

Performance Dimension	Indicator	Measurement	Desired Direction
Asset Quality	Gross NPA Ratio (GNPA)	Gross NPAs / Gross Advances × 100	Lower is better
Profitability	Return on Assets (ROA)	Net Profit / Average Total Assets × 100	Higher is better

Table 2 presents the operationalisation of the two financial performance indicators used in the present analysis. Gross Non-Performing Assets (GNPA) is used to assess asset quality, with a lower ratio indicating a reduction in stressed assets relative to gross advances. Return on Assets (ROA) is used to measure profitability and reflects the ability of a bank to generate profit from its asset base. A higher ROA indicates improved profitability. These indicators were selected because they capture two important and complementary dimensions of banking performance: asset quality and profitability. The study compares these indicators across the pre-consolidation period (FY2017–18 to FY2019–20) and post-consolidation period (FY2020–

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

21 to FY2024–25). The indicators therefore provide a focused basis for examining whether the financial position of the selected anchor banks changed during the post-consolidation period.

TABLE 3
ANNUAL TREND OF GROSS NPA RATIO OF SELECTED PUBLIC SECTOR BANKS

Bank	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Punjab National Bank	18.38	15.50	14.21	14.12	11.78	8.74	5.73	6.98
Canara Bank	11.84	8.83	8.21	8.93	7.51	5.35	4.23	5.22
Union Bank of India	15.74	14.98	14.15	13.74	11.11	7.53	4.76	6.28
Indian Bank	7.40	7.13	6.89	9.87	8.47	5.95	3.95	4.81

Table 3 shows the annual movement in the Gross NPA ratio of the four selected anchor banks. The data indicate that asset-quality stress was relatively high during the pre-consolidation period. Punjab National Bank recorded the highest GNPA ratio of 18.38% in FY2018, followed by Union Bank of India at 15.74%. Canara Bank and Indian Bank recorded comparatively lower ratios during the same period. After FY2020, GNPA generally declined across all four banks. PNB declined from 14.21% in FY2020 to 5.73% in FY2024, although it increased to 6.98% in FY2025. Canara Bank declined from 8.21% to 4.23% before increasing slightly to 5.22%. Union Bank declined from 14.15% to 4.76%, followed by a moderate increase to 6.28%. Indian Bank recorded an increase in FY2021 to 9.87%, followed by a continuous decline to 3.95% in FY2024 and 4.81% in FY2025. Overall, the trend indicates substantial improvement in asset quality over the study period, although the improvement was not uniform every year.

TABLE 4
PRE- AND POST-CONSOLIDATION GNPA COMPARISON

Bank	Pre-Consolidation Mean	Post-Consolidation Mean	Mean Difference	% Change
Punjab National Bank	15.16	9.47	-5.69	-37.51%
Canara Bank	9.63	6.25	-3.38	-35.10%
Union Bank of India	14.41	8.68	-5.73	-39.75%
Indian Bank	7.23	6.61	-0.62	-8.58%
Overall Mean	**11.61**	**7.75**	**-3.85**	**-33.20%**

Table 4 presents the comparison of average GNPA ratios between the pre- and post-consolidation periods. The overall average GNPA declined from 11.61% to 7.75%, representing a reduction of approximately 3.85 percentage points or 33.20%. Union Bank of India recorded the largest absolute decline, from 14.41% to 8.68%, followed by Punjab National Bank, which declined from 15.16% to 9.47%. Canara Bank also recorded a substantial reduction from 9.63% to 6.25%. Indian Bank recorded the smallest decline, from 7.23% to 6.61%, partly because its GNPA increased sharply during FY2021 before declining in subsequent years. The results indicate that asset quality improved across all four selected banks when comparing the two periods. However, this descriptive improvement should not be attributed exclusively to consolidation because loan recoveries, provisioning, write-offs, regulatory interventions and other banking-sector reforms also occurred during the period.

TABLE 5
ANNUAL TREND OF RETURN ON ASSETS OF SELECTED PUBLIC SECTOR BANKS

Bank	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Punjab National Bank	-1.52	-0.47	-0.21	0.21	0.18	0.41	0.53	0.61
Canara Bank	-0.61	0.11	0.19	0.26	0.55	0.89	1.07	0.98
Union Bank of India	-0.75	-0.42	-0.16	0.11	0.26	0.54	0.82	0.78

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

Indian Bank	0.53	0.12	0.26	0.50	0.61	0.76	1.07	1.02

Table 5 presents the annual trend in Return on Assets (ROA). The results demonstrate a clear improvement in profitability across the selected banks. Punjab National Bank reported negative ROA throughout the pre-consolidation period, reaching -1.52% in FY2018, but moved into positive territory from FY2021 and reached 0.61% in FY2025. Canara Bank improved from -0.61% in FY2018 to 0.98% in FY2025. Union Bank of India similarly improved from -0.75% to 0.78%. Indian Bank had positive ROA throughout the study period and increased from 0.53% in FY2018 to 1.02% in FY2025. The results suggest a broad improvement in the profitability position of the selected banks. The improvement may be associated with declining stressed assets, lower provisioning requirements, recoveries, improved operating performance and other banking-sector developments. Nevertheless, the results represent an observed pre- and post-period difference rather than evidence that consolidation alone caused the improvement.

TABLE 6
PRE- AND POST-CONSOLIDATION ROA COMPARISON

Bank	**Pre-ROA**	**Post-ROA**	**Mean Difference**	**Change**
PNB	-0.79	0.39	+1.18	+1.18 pp
Canara Bank	-0.15	0.75	+0.90	+0.90 pp
Union Bank	-0.38	0.50	+0.88	+0.88 pp
Indian Bank	0.40	0.79	+0.39	+0.39 pp
Overall	**-0.23**	**0.61**	**+0.84**	**+0.84 pp**

Table 6 presents the comparison of Return on Assets (ROA) of the four selected Public Sector Banks between the pre- and post-consolidation periods. The results indicate a clear improvement in profitability across all four banks. The overall average ROA increased from –0.23% in the pre-consolidation period to 0.61% in the post-consolidation period, representing an improvement of 0.84 percentage points. Punjab National Bank (PNB) recorded the largest improvement, with ROA increasing from –0.79% to 0.39%, resulting in a positive change of 1.18 percentage points. Canara Bank's ROA increased from –0.15% to 0.75%, representing an improvement of 0.90 percentage points, while Union Bank's ROA improved from –0.38% to 0.50%, showing an increase of 0.88 percentage points. Indian Bank, which had a positive ROA even during the pre-consolidation period, recorded an increase from 0.40% to 0.79%, representing an improvement of 0.39 percentage points.

The results indicate that the improvement in profitability was not limited to a single bank but was observed across all four selected anchor banks. The movement from negative to positive ROA for PNB, Canara Bank and Union Bank indicates a substantial recovery in their ability to generate profits from their asset base. The improvement in Indian Bank, although smaller in magnitude, indicates that profitability strengthened further during the post-consolidation period. Overall, the increase in ROA may be associated with declining stressed assets, improved recoveries, lower provisioning requirements, stronger operating performance and other banking-sector reforms during the study period. However, these results represent an observed improvement following the consolidation period and should not be interpreted as evidence that consolidation alone caused the increase in profitability, as recapitalisation, NPA resolution, regulatory reforms, digitisation and broader economic recovery also occurred during the same period.

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

TABLE 7 COMPARATIVE PERFORMANCE OF SELECTED BANKS				
Performance Indicator	**Pre-Consolidation Mean**	**Post-Consolidation Mean**	**Mean Change**	**Direction of Change**
GNPA (%)	11.61	7.75	-3.85 pp	Improvement
ROA (%)	-0.23	0.61	+0.84 pp	Improvement

Table 7 provides a consolidated comparison of the two principal performance dimensions examined in the study. The average GNPA ratio decreased from 11.61% to 7.75%, representing a decline of 3.85 percentage points. At the same time, average ROA increased from -0.23% to 0.61%, representing an improvement of 0.84 percentage points. The simultaneous decline in GNPA and improvement in ROA indicates that the post-consolidation period was characterised by improvement in both asset quality and profitability. Economically, the two movements are also related because a reduction in stressed assets can reduce provisioning pressure and support profitability. However, the observed relationship should not be interpreted as evidence of a direct causal relationship. Recoveries, write-offs, provisioning, capital support, regulatory measures and changing economic conditions could also have contributed to the observed changes.

TABLE 8 BANK-WISE PRE- AND POST-CONSOLIDATION PERFORMANCE						
Bank	**Pre-GNPA**	**Post-GNPA**	**GNPA Change**	**Pre-ROA**	**Post-ROA**	**ROA Change**
Punjab National Bank	15.16	9.47	-5.69	-0.79	0.39	+1.18
Canara Bank	9.63	6.25	-3.38	-0.15	0.75	+0.90
Union Bank of India	14.41	8.68	-5.73	-0.38	0.50	+0.88
Indian Bank	7.23	6.61	-0.62	0.40	0.79	+0.40
Overall	**11.61**	**7.75**	**-3.85**	**-0.23**	**0.61**	**+0.84**

Table 8 demonstrates that the magnitude of performance change differed among the four anchor banks. Punjab National Bank and Union Bank of India recorded the largest reductions in average GNPA, at 5.69 and 5.73 percentage points respectively. Canara Bank recorded a 3.38 percentage-point reduction, while Indian Bank recorded a relatively smaller decline of 0.62 percentage points. Profitability improved across all four banks. PNB recorded the largest increase in ROA of 1.18 percentage points, followed by Canara Bank at 0.90 percentage points and Union Bank of India at 0.88 percentage points. Indian Bank recorded an increase of 0.40 percentage points. The results demonstrate that the post-consolidation performance pattern was not identical across the anchor banks. Differences in their initial financial conditions, asset-quality problems, integration requirements, business composition and operating structures may have contributed to the variation.

TABLE 9 PAIRED-SAMPLE T-TEST OF PRE- AND POST-CONSOLIDATION PERFORMANCE							
Indicator	**Pre-Mean**	**Post-Mean**	**Mean Difference**	**t-value**	**df**	**p-value**	**Decision at 5%**
GNPA (%)	11.61	7.75	-3.85	3.186	3	0.050	Significant*
ROA (%)	-0.23	0.61	+0.84	-5.159	3	0.014	Significant

Table 9 presents the paired-sample t-test comparing the pre- and post-consolidation mean performance of the four selected banks. The GNPA ratio decreased by approximately 3.85 percentage points, with a t-value of 3.186 and p-value of approximately 0.050. The result is marginally significant at the 5% level when the unrounded p-value is considered. ROA increased by approximately 0.84 percentage points, producing a t-value of -5.159 and p-value

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

of 0.014, indicating a statistically significant difference between the two periods. Therefore, the analysis provides stronger statistical evidence for a change in profitability than for asset quality, although the GNPA result is close to the conventional significance threshold. Importantly, the test is based on only four banks and therefore has very low degrees of freedom. The statistical results should consequently be treated as indicative rather than definitive.

DISCUSSION OF FINDINGS

The findings of the present study indicate that the selected anchor banks experienced substantial improvement in asset quality during the post-consolidation period. The decline in average GNPA from 11.61% to 7.75% is consistent with the broader improvement in asset quality observed across Indian Public Sector Banks after the peak of stressed assets during the late 2010s. The result is broadly consistent with earlier research that identified asset quality, efficiency and risk management as important determinants of PSB performance. The findings also complement studies examining post-merger banking performance, which have reported that merger outcomes can vary according to the financial condition, operating structure and integration requirements of participating institutions.

The improvement in ROA from -0.23% to 0.61% provides evidence of a considerable recovery in profitability among the selected banks. This finding is consistent with the argument that improved asset quality can reduce provisioning pressure and support profitability. However, the present findings should be interpreted in the broader context of Indian banking reforms. The post-2020 period included stronger recovery and resolution of stressed assets, improved provisioning, recapitalisation, technological transformation and changes in operating conditions. Therefore, the improvement observed in the present study cannot be interpreted as the independent effect of consolidation. The findings instead suggest that consolidation occurred during a period of broader financial strengthening of PSBs. The variation among individual banks further indicates that consolidation outcomes were heterogeneous and that bank-specific characteristics remained relevant even after amalgamation.

FUTURE SCOPE OF THE STUDY

Future research can extend the present analysis by incorporating a larger sample of Indian Public Sector Banks and covering a longer post-consolidation period. Subsequent studies may examine additional performance dimensions, including Net NPA, Net Interest Margin, Return on Equity, Capital Adequacy Ratio, Cost-to-Income Ratio, liquidity, credit growth, business per employee and productivity. Researchers can also employ CAMELS, Data Envelopment Analysis (DEA), Stochastic Frontier Analysis (SFA) and Malmquist Productivity Index approaches to provide a broader assessment of efficiency and productivity. A difference-in-differences framework or other quasi-experimental methods could be considered to distinguish consolidation-related changes from broader banking-sector developments. Future studies may also investigate the effects of branch rationalisation, employee integration, technological adoption, customer service and digital banking following mergers. Comparative analysis between consolidated PSBs, non-merged PSBs and private-sector banks could further strengthen the evidence regarding the performance implications of structural consolidation in the Indian banking sector.

CONCLUSION

The present study examined the financial performance of Punjab National Bank, Canara Bank, Union Bank of India and Indian Bank across the pre- and post-consolidation periods associated with the 2020 Public Sector Bank consolidation programme. Using GNPA and ROA

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.

as key indicators of asset quality and profitability, the study identified a clear improvement in the financial position of the selected anchor banks during the post-consolidation period.

The comparative results show that the overall average GNPA declined from 11.61% in the pre-consolidation period to 7.75% in the post-consolidation period, representing a reduction of 3.85 percentage points. All four banks recorded lower average GNPA in the post-consolidation period, although the magnitude of improvement varied across institutions Profitability also demonstrated a positive movement. The overall average ROA increased from -0.23% to 0.61%, representing an improvement of 0.84 percentage points. PNB, Canara Bank and Union Bank moved from negative average ROA during the pre-consolidation period to positive average ROA during the post-consolidation period, while Indian Bank recorded further improvement from an already positive level. The paired-sample t-test provides statistically significant evidence of a difference in ROA between the two periods. The GNPA comparison produced a marginally significant result at the 5% level, indicating comparatively weaker statistical evidence for the change in asset quality. Therefore, the study concludes that the selected anchor banks demonstrated stronger financial performance in the post-consolidation period, while the extent of improvement differed across individual institutions. The findings highlight the importance of evaluating consolidation alongside wider banking-sector reforms and bank-specific characteristics when assessing the transformation of Indian Public Sector Banks.

REFERENCES

Goyal, K. A., & Joshi, V. (2012). Indian banking industry: Challenges and opportunities. *International Journal of Business Research and Management*, *3*(1), 18-28.

Hiremath, M. A., & Kudachimath, B. S. (2025). Assessing the financial performance of Indian public sector banks post-mega merger: An empirical analysis. *Advances in Consumer Research*, *2*, 452-458.

Jegadeeshwaran, D. M., & Baswaraj, M. (2017). Impact of asset quality on operational performance of select public sector banks in the pre and post-merger periods. *International Journal of Advanced Research and Development*, *2*(4), 142-151.

Kaur, H. V. (2010). Analysis of banks in India—A CAMEL approach. *Global Business Review*, *11*(2), 257-280.

Kumar, S. (2008). An analysis of efficiency–profitability relationship in Indian public sector banks. *Global Business Review*, *9*(1), 115-129.

Kumbhakar, S., & Sarkar, S. (2003). Deregulation, ownership, and productivity growth in the banking industry: evidence from India. *Journal of Money, Credit, and Banking*, *35*(3), 403-424.

Prasad, E. H., & Prasad, G. V. (2017). Non-Performing Assets: A Study of Scheduled Commercial Banks in India. *Review of Professional Management*, *15*(2), 26.

Roopesh, R., & Sandhya, S. (2022). Will mergers and acquisition vacillate the performance of banks? A case study of public sector banks in India. *Binus Business Review*, *13*(2), 191-202.

Sathye, M. (2003). Efficiency of banks in a developing economy: The case of India. *European journal of operational research*, *148*(3), 662-671.

Swami, H., & Saradhi, V. R. (2025). Impact of bank merger on the financial performance and efficiency of merged banks with special reference to public sector banks in India. Journal of Informatics Education and Research, 5(1).

Received: 08-Oct-2026, Manuscript No. AMSJ-26-17603; **Editor assigned:** 09-Oct-2026, PreQC No. AMSJ-26-17603(PQ); **Reviewed:** 23-Oct-2026, QC No. AMSJ-26-17603; **Revised:** 30-Oct-2026, Manuscript No. AMSJ-26-17603(R); **Published:** 06-Nov-2026

Citation Information: Devaraju, N. & Prathap, B. N., (2026). Impact of bank consolidation on asset quality and profitability of selected indian public sector banks: a pre- and post-consolidation analysis. *Academy of Marketing Studies Journal, 30*(S5), 1-13.