A Study of Pre and Post Merger Activities in Indian Bank Sectors: A Study Based on State Bank of India

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This study investigates the impact of the 2016–2017 merger of associate banks—State Bank of Mysore, State Bank of Travancore, State Bank of Hyderabad, State Bank of Patiala, State Bank of Bikaner and Jaipur—along with Bharatiya Mahila Bank, into the State Bank of India (SBI). The primary objective is to evaluate the changes in SBI's financial and operational performance by comparing key indicators during the pre- and post-merger periods. This study emphasizes variables such as loan advances, earnings from advances, asset quality measured through gross and net non-performing assets (NPAs), and employee and branch productivity.A quantitative research approach is adopted, employing statistical tools, including the t-test to determine the significance of observed differences across the two periods. The findings indicate that the merger significantly enhanced SBI's scale of operations, as reflected in a substantial increase in total loan advances and income generated from advances. Growth was particularly notable in priority sector lending and international business segments, suggesting improved market reach and diversification. However, the analysis revealed that improvements in asset quality were limited. Although gross and net NPAs declined post-merger, the reductions were not significant enough to indicate a major strengthening of the bank's credit risk profile. Furthermore, despite the expansion in business volume, employee productivity and branch-level efficiency did not how meaningful improvement, indicating challenges with operational integration and resource optimisation. Overall, the study concludes that while the merger contributed to increased financial outreach and business growth for SBI, it did not substantially enhance its operational efficiency or asset quality. These findings highlight the need for stronger post-merger integration strategies to fully realize the potential benefits of consolidation in the Indian banking sector.

Keywords: Merger and Acquisition, Indian Banking Sector, State Bank of India, t-test, Financial Performance, Data Analytics

1. Introduction

M&A in the Indian Banking Industry have become a frequent phenomenon. The tendency is growing steadily, after the age of liberalization, privatization and globalization in the Indian banking industry in the previous two and a half decades.

Many public sector banks, private sector banks and other institutions are active in Indian mergers & acquisitions. The major reason for fusions and acquisitions in the banking business is to profit from scale economies. It has been noted that combinations may be a major source of economic growth, particularly in a very stagnant and deeply unpredictable environment. M&A is seen as a reasonably rapid and efficient way of expanding into new areas and incorporating new technology.

The fundamental motivation driving companies' goal to strengthen and maintain their market position. Company restructuring and the financial services industry have played a key role in mergers and acquisitions. Ramakrishnan (2010) examines the impact of mergers on the financial performance of Indian firms using data from 1996 to 2002. The study came to the conclusion that the mergers have enhanced the long-term performance of firms. Many indications may be found indicating their success is by no means guaranteed. The consequence was the establishment of a few major banks, the leading example being that the State Bank of India was even the 43rd largest bank in the world, ranking 236th among the world's largest businesses in 2019, Fortune Global 500.

In conjunction with other developments, such as greater deregulation, privatization and business restructuring, this has pushed a powerful wave of mergers and acquisitions that has never been seen before. In today's corporate environment, M&A have been greatly liked or admired by various corporations for various objectives. Whether it is survival, profit maximization or developing the business economy, fusions and acquisitions are the most often discussed issue in the competitive globe.

Fusions and acquisitions seem to be a common term, but in reality, two words with two distinct meanings. Fusions are, on the one hand, more favorable, while acquisitions are more antagonistic. When we talk about a 'fusion,' we mean the fusion or reunion of two firms in which one company will continue to exist. Fusion and acquisition are financial instruments employed to grow its business to enhance long-term profitability. Fusions occur when mutual permission of the merging firms is distinct from acquisitions. The word 'fusion' is the combining of two or more independent companies into one company. The company which resulted through the procedure might adopt any of the following identities: Objective or new identity on the other side, acquisitions take place where a business takes over another company's controlling ownership stake. Patel (2014) examines the impact of the merger on four Indian banks during 2005-2012. They find that the merger has improved the performance, but to a limited extent.

One of the biggest reasons behind the merger and acquisition of banks is getting into bad loans over the year and an increase in NPA. Several provisions have been made in law to deal with it, and the merger and acquisition of banks is one of them, which is a very popular and effective measure to come out of debt and other issues.

To date, studies of pre- and post-merger financial performance have only considered financial ratios, but few variables, specially NPA (Non-Performing Assets), have not been included. But the level of non-performing assets (NPAs) best indicates the soundness of the banking sector of a country. So these variables pertain to the banking industry only. This study is considering the variables which can give

better results. Based on the literature review, the variables and statistical test are drawn for carrying out this study.

2. Literature Review

The existing literature on bank mergers and acquisitions offers a diverse range of perspectives on their impact, particularly on operational efficiency, financial performance, and structural transformation within the banking sector. Recent studies have increasingly focused on post-merger outcomes in the Indian banking industry, especially following large-scale consolidations among public sector banks.

For instance, Verma and Sharma (2023) examine the merger between Oriental Bank of Commerce and Punjab National Bank and find that consolidation led to notable improvements in operational efficiency. However, the study also highlights significant challenges in workforce integration and technological adaptation, suggesting that the success of mergers largely depends on effective post-merger integration strategies. Similarly, Kumar and Singh (2023), in their analysis of Bank of Baroda's merger with Vijaya Bank, emphasize the importance of evaluating mergers not only from an operational perspective but also in terms of shareholder wealth and market response. Their work underscores the need to balance strategic objectives with financial outcomes.

A broader and more comprehensive perspective is offered by Nair and Rajan (2022), who analyse the merger involving Union Bank of India, Corporation Bank, and Andhra Bank. Their findings reveal that while mergers initially face operational and cultural integration challenges, they tend to generate long-term benefits such as cost efficiency and market expansion. In contrast, Desai (2022) highlights the financial risks associated with banking consolidations, particularly the rise in non-performing assets (NPAs). The study attributes this to inconsistencies in credit policies and risk management frameworks among merging entities, highlighting the importance of due diligence and governance alignment.

The discussion on banking consolidation in India is deeply rooted in earlier policy and reform-oriented studies. Prasad (2004), drawing on the recommendations of the Narasimham Committee (1991 and 1998), anticipated the consolidation of State Bank of India and its associates, along with a broader restructuring of the banking sector into a smaller number of strong entities. Supporting this view, Vasudevan (2004) argued that increasing bank size enhances their competitiveness and global presence, while Mohan (2006) emphasised that consolidation is essential to achieve economies of scale, improve efficiency, and strengthen the overall financial system.

However, not all studies present an entirely positive outlook on mergers. Chanda (2005) suggests that while deregulation has not adversely affected the profitability of public sector banks, consolidation may reduce competition and lead to monopolistic tendencies, potentially harming customers through lower deposit rates. Similarly, Dash (2005) challenges the widely held belief that mergers necessarily enhance corporate performance, arguing that improvements in operational profitability are not always evident.

Further empirical insights are provided by Ray (2007), who notes that while mergers can lead to benefits such as economies of scale, diversification, and expanded geographical reach, larger asset size does not automatically translate into higher returns. Kumar and Kishore (2003) also emphasize that banking reforms, particularly those recommended by the Narasimham Committee, have played a crucial role in strengthening prudential norms and improving efficiency, thereby supporting consolidation efforts.

Studies conducted outside India offer additional perspectives on merger outcomes. Rashid and Naeem (2017), in their analysis of Pakistani firms, find no significant impact of mergers on overall financial performance, although some improvement in profitability ratios is observed. In contrast, Daniya et al. (2016) report a significant increase in profitability among Nigerian banks following mergers. Similarly, Das (2014) finds that mergers have a positive and statistically significant impact on the financial performance of regional rural banks in India.

More recent research also highlights emerging challenges in the merger process. Verma (2021) identifies regulatory complexities, legal inconsistencies, and employee integration issues as major barriers to smooth consolidation. The study further emphasizes the growing importance of digital transformation and technological integration, suggesting that regulatory frameworks must evolve to support modern banking needs. Earlier, Reddy (2005) also noted that increased competition and stakeholder expectations are pushing banks to adopt more advanced risk management practices and innovative strategies to enhance income while reducing costs.

Overall, the literature suggests that while bank mergers can lead to improved efficiency, profitability, and market expansion, their success is not guaranteed. The outcomes largely depend on effective integration, alignment of financial and operational practices, and supportive regulatory frameworks. At the same time, the mixed empirical evidence indicates the need for further research, particularly in the context of large-scale consolidations such as those involving the State Bank of India and its associate banks

3. Research Gap and Objectives

Research on different parameters of a bank, from which the influence of mergers and acquisitions is quantified, is noted in the accessible literature study. Most of the study has focused on trends, policies and their frameworks, the issue of human resources, financial profitability analysis, and the accounting of mergers. Only a few works are observed on various aspects of the loans and advances of the merged or amalgamated banks. In a work like this by Athma P. and Bhavani A. Research on the performance of the State Bank of India and the HDFC Bank before and after the merger was conducted, with the State Bank of India's Base Study Year being 2008-09. In that study, deposits, advances, and net profit from these two banks were studied. Prompitak D (2009) investigated the impact of mergers on bank pricing behavior, interest margin setting and loan and lending targets on big European commercial banks between 1997 and 2005.

There is a vacuum, as no study reports on the various components of the advances made by a big bank, such as the State Bank of India, are available. There is no research on advances from the State Bank of India, including those from the bank's overseas operations. Progress in this priority area has also been lacking in earlier studies. Furthermore, there is a noticeable absence of research examining the financial implications of the merger of the subsidiaries of State Bank of India—namely, State Bank of Travancore, State Bank of Bikaner and Jaipur, State Bank of Hyderabad, State Bank of Mysore, State Bank of Patiala, and State Bank of Mahila—with the parent entity, State Bank of India. State Bank of" Travancore. 'Advance earnings/bills' has also not been studied in the past. This field is thus chosen for the present study.

The current study would thus examine the merger features of the State Bank of India during the 2016/17 fiscal year, with greater emphasis on any changes to the Bank's loan portfolio. The research also assesses income from loans and progress (later referred to as Advances), and the performance of branches and workers' pre- and post-fusion performance, with the quality and amount of State Bank of India advances. The current Merger and Acquisitions (M&As) are intended to be based on financial performance, particularly in the Indian banking industry.

The scope and aims of this investigation are summarized below: -

1. To analyse the performance of the State Bank of India's main metrics before and after the merger.
2. To find out the impact of merging on the productivity of the Bank's employees.
3. To investigate the implications of the merger on the Bank's industry productivity

4. Research Methodology

Pre- and post-merger analyses of various factors are conducted on selected variables to assess the efficacy of State Bank of India's mergers and acquisitions. Statistical tools are used for data analysis.

4.1 Sample Selection: During the post-liberalization period, i.e. between 1991 and 2020, there have been more than 30 mergers in the Indian banking sector among different banks. Some were forced mergers (the Private Sector Bank and the Public Sector Bank merged), while others were voluntary. For many reasons, including Government decisions during the global financial crisis and the period of expansion, the State Bank of India has continued to merge. Incidentally, the State Bank of India is India's largest public sector bank. Advances are one of the banks' most important business volumes and affect the economy and society as a whole. Advanced criteria obviously have an influence on the profitability of the bank.

4.2 Data Collection: The studies employ secondary source data from the annual reports of the State Bank of India for several years up to the annual report for 2019-20. The required statistics are also obtained from the database of the Reserve Bank of India.

4.3 Period of Study: The research period extends from 2006-07 to the financial year 2019-20. The selected time is therefore post-liberalization, with the Indian economic situation being effective in various parts of liberalization, privatization and globalization. The comprehensive investigation and analysis were conducted from 2013-2014 to 2019-2020.

4.4 Methodology: To test the research hypotheses, the study adopts a comparative analytical methodology to evaluate the pre- and post-merger performance of the State Bank of India (SBI) following its merger and acquisition (M&A) activities during 2016–2017. The analysis is based on selected financial and asset quality parameters that reflect the bank's growth, profitability, and risk profile.

The key financial variables considered in the study include Advances in India (AAI), Advances outside India (AOI), Priority Sector Advances (PSA), Grand Total Advances (GTA), and Interest Earned on Advances and Bills (IEA). These indicators measure the bank's credit expansion, income generation, and sectoral lending performance. In addition, asset quality indicators such as Gross Non-Performing Assets (GNPA), Net Non-Performing Assets (NNPA), and NPA Provisions are incorporated to evaluate the bank's credit risk and financial stability.

The study compares financial performance over two distinct periods: pre-merger (three years before the merger) and post-merger (three years after the merger). The merger year, i.e., 2016–2017, is treated as the base year (denoted as year "0") and is excluded from the analysis to avoid transitional distortions. Each year within the selected time frame is treated as an independent observation.

Before the merger, the State Bank of India and its associate banks operated as separate entities in the market. However, in the post-merger period, SBI functions as a unified entity incorporating the operations of all merged banks. For consistency, SBI's financial data is used for both periods, with pre-merger data representing the acquiring bank and post-merger data reflecting consolidated operations.

To examine whether the differences between the two periods are statistically significant, the study employs the independent sample t-test based on the Student's t-distribution. This statistical tool is used to test the significance of changes in performance indicators between the pre- and post-merger periods, thereby enabling a rigorous evaluation of the impact of the merger on SBI's financial and operational performance.

4.5 Hypothesis

The present study adopts a quantitative approach to evaluate the impact of the merger of associate banks with the State Bank of India (SBI) during the 2016–2017 financial year. The hypothesis development is grounded in the theoretical framework of mergers and acquisitions, which suggests that consolidation leads to economies of scale, improved efficiency, enhanced market reach, and better resource utilization. However, empirical evidence often indicates mixed outcomes due to integration challenges and variations in operational efficiency.

To assess pre- and post-merger performance, key financial and operational indicators, including total advances, earnings, and asset quality (Gross NPA and Net NPA), are analysed at the employee and branch levels. These indicators are selected because they reflect both productivity and efficiency in banking operations. The study employs statistical tools, particularly the independent sample t-test, to determine whether the differences observed between the pre-merger and post-merger periods are statistically significant.

The first hypothesis examines whether the merger led to a significant change in total advances per employee and per branch. This is based on the expectation that consolidation increases lending capacity and improves credit deployment, although integration inefficiencies may moderate these gains.

The second hypothesis focuses on earnings per employee and branch, considering that increased scale and business expansion should enhance revenue generation. At the same time, post-merger costs and restructuring efforts may influence profitability.

The third hypothesis relates to Gross NPAs, which indicate the quality of the loan portfolio. The merger may either improve asset quality through better risk management or worsen it by absorbing stressed assets from the merged entities.

The fourth hypothesis evaluates Net NPAs, providing a refined measure of asset quality after provisioning. This helps assess the bank's effectiveness in managing credit risk post-merger.

Thus, these hypotheses are formulated to empirically test whether the merger has led to significant improvements in operational productivity, profitability, and asset quality.

1. **H_o:** Total advance per employee and per branch of the State Bank of India before and after merger is not significantly different.
   H_1: The total advance per employee and per branch of the State Bank of India before and after the merger is significantly different.

2. **H_o:** The earnings by employee and the branch of the State Bank of India are not significantly different before and after the merger.
   H_1: Earnings by employee per branch of the State Bank of India before and after the merger varied markedly.

3. **H_o:** The Gross NPA does not change much per employee and per branch of the State Bank of India before and after the merger.
   H_1: The Gross NPA per employee and per State Bank of India branch before and after the merger has a substantial difference.

4. **H_o:** There is no major difference between Net NPA per employee and the State Bank of India branch before and after the merger.
   H_1: The net NPA per employee and branch of the State Bank of India before and after the merger is significantly different.

4.6 Tools for Analysis: the following tools are used for the analysis of the data apart from Percentage and Mean values.

Compounded Annual Growth Rate (CAGR): Analysis of the Advances in India (AAI) growth rate, Advances outside India (AOI), Advances in India Priority Industry in India (PSA), Great Advance Total (GTA), Advance and bill interest earnings (IEA): Gross NPA (GNPA), Net NPA (NPA) and NPA provision.

Employee and Branch Performance Ratio for evaluating employee and branch-level efficiency.

T-Test: To test the hypothesis of substantial variation in the performance of the selected metrics before and after the merger of State Bank of India with the merging banks.

5. Data Analysis and Interpretation

For this study, the major pre- and post-merger characteristics of the State Bank of India are of primary importance, and data from the Annual and Final Accounts of the State Bank of India are provided for analysis. The State Bank of India's advance portfolio in recent years is as follows:

Table 5.1 *Advance Portfolio of State Bank of India at the end of Different Financial Years*

Financial Year	Advances in India (AAI) (Rupees in crore)	Priority sector advances in India (PSA) (Rupees in crore)	Advances outside India (AOI) (Rupees in crore)	Grand total of Advances (GTA) (Rupees in crore)
2006-07	299283.45	102015.85	38053.04	337336.49
2007-08	360628.35	119230.51	56139.85	416768.20
2008-09	456716.24	143637.56	85786.97	542503.20
2009-10	535753.96	170568.21	96160.19	631914.15
2010-11	648675.46	231597.87	108043.99	756719.45
2011-12	733501.29	250176.96	134077.60	867578.89
2012-13	878208.93	264313.89	167407.62	1045616.55
2013-14	997884.33	280819.50	211944.39	1209828.72
2014-15	1067251.37	288952.35	232775.02	1300026.39
2015-16	1200031.60	328551.50	263668.82	1463700.42
2016-17	1287641.76	341257.50	283436.62	1571078.38
2017-18	1636607.79	448358.96	298272.40	1934880.19
2018-19	1884879.47	520729.78	300997.45	2185876.92
2019-20	1969180.48	526675.87	356109.08	2325289.56

N. B.: Financial year commences on 1st April of a year and ends on the 31st March of the Succeeding Year
(**Source:** Annual Reports of State Bank of India for the Financial Years Concerned)

Table 5.2 *Earnings from Advances of State Bank of India at the end of Different FYs*

Financial Year	Advances in India (AAI) (Rupees in crore)	Advances outside India (AOI) (Rupees in crore)	Grand total of Advances (GTA) (Rupees in crore)	Interest Earning on Advance/ Bills (IEA) (Rupees in crore)
2006-07	299283.45	38053.04	337336.49	24839.18
2007-08	360628.35	56139.85	416768.20	35228.11
2008-09	456716.24	85786.97	542503.20	46404.71
2009-10	535753.96	96160.19	631914.15	50632.64
2010-11	648675.46	108043.99	756719.45	59976.01
2011-12	733501.29	134077.60	867578.89	81077.70
2012-13	878208.93	167407.62	1045616.55	90537.10
2013-14	997884.33	211944.39	1209828.72	102484.10
2014-15	1067251.37	232775.02	1300026.39	112343.91
2015-16	1200031.60	263668.82	1463700.42	115666.01
2016-17	1287641.76	283436.62	1571078.38	119510.00
2017-18	1636607.79	298272.40	1934880.19	141363.17
2018-19	1884879.47	300997.45	2185876.92	161640.23
2019-20	1969180.48	356109.08	2325289.56	179748.84

Nearly every bank's progress is covered by several non-earning loans and advances known as non-performing assets (NPA). The State Bank of India's NPA status is shown below.

Table 5.3 *Non Performing Assets (NPA) from Advances and Provisioning against NPA of State Bank of India at the end of Different Financial Years*

Financial Year	Grand total of Advances (GTA) (Rupees in crore)	Gross NPA (GNPA) (Rupees in crore)	Net NPA (NNPA) (Rupees in crore)	Provision for NPA (Rupees in crore)
2006-07	337336.49	9998.22	5257.72	4740.50
2007-08	416768.20	12837.34	7424.33	5413.01
2008-09	542503.20	15588.60	9552.02	6036.58
2009-10	631914.15	19534.89	10870.17	8664.72
2010-11	756719.45	25326.29	12346.90	12979.39
2011-12	867578.89	39676.46	15818.85	23857.61
2012-13	1045616.55	51189.39	21956.48	29232.91
2013-14	1209828.72	61605.35	31096.07	30509.28

2014-15	1300026.39	56725.34	27590.58	29134.76
2015-16	1463700.42	98172.80	55807.02	42365.78
2016-17	1571078.38	112342.99	58277.38	54065.61
2017-18	1934880.19	223427.46	110854.70	112572.76
2018-19	2185876.92	172750.36	65894.74	106855.62
2019-20	2325289.56	149091.85	51871.30	97220.55

(**Source:** *Annual Reports of State Bank of India for the Financial Years Concerned)*

The State Bank of India is one of the largest employers, with enormous personnel resources, and now employs more than 2 lakh people. There are several branches of the State Bank of India located across India and overseas. The employees are the people involved in business, and the branch is the location for the firm itself. The State Bank of India employee and branch number details are shown below.

Table 5.4 *Employee and Branch Numbers of State Bank of India at the end of Different Financial Years*

Financial Year	Number of Employees (No.)	Number of Branches (No.)
2006-07	185388	9679
2007-08	179205	10683
2008-09	205896	12022
2009-10	200299	12638
2010-11	222933	13698
2011-12	215481	14270
2012-13	228296	15002
2013-14	222033	16059
2014-15	213238	16524
2015-16	207739	16982
2016-17	209567	17365
2017-18	264041	22620
2018-19	257252	22218
2019-20	249448	22374

The Year of Merger, i.e. the 2016-17 Financial Year, is the basic Year.

Since the financial year 2016-17 has been relatively short, post-merger statistics for three financial years alone could be collected, i.e. 2017-18, 2018-19 and 2019-20. To maintain synergy, pre-fusion data are used for 3 financial years only, 2013-14, 2014-15 & 2015-16 to analyze them.

Table 5.5 *Pre-Merger Key Parameters of State Bank of India*

Financial Year	Advances in India (AAI) (Rupees in crore)	Priority sector advances in India (PSA) (Rupees in crore)	Advances outside India (AOI) (Rupees in crore)	Grand total of Advances (GTA) (Rupees in crore)	Interest Earning on Advance/ Bills (IEA) (Rupees in crore)	Gross NPA (GNPA) (Rupees in crore)	Net NPA (NNPA) (Rupees in crore)	Provision for NPA (Rupees in crore)	Number of Employees (No.)	Number of Branches (No.)
2013-14	9,97,884.33	2,80,819.50	2,11,944.39	12,09,828.72	1,02,484.10	61,605.35	31,096.07	30,509.28	222033	16059
2014-15	10,67,251.37	2,88,952.35	2,32,775.02	13,00,026.39	1,12,343.91	56,725.34	27,590.58	29,134.76	213238	16524
2015-16	12,00,031.60	3,28,551.50	2,63,668.82	14,63,700.42	1,15,666.01	98,172.80	55,807.02	42,365.78	207739	16982
Base Year	12,87,641.76	3,41,257.50	2,83,436.62	15,71,078.38	1,19,510.00	1,12,342.99	58,277.38	54,065.61	209567	17365
CAGR	6.58%	1.79%	2.68%	2.40%	1.41%	5.61%	5.88%	5.34%	-0.52%	0.71%
Mean	1088389.103	299441.118	236129.407	1324518.510	110164.676	72167.830	38164.557	34003.273	214336.667	16521.667
Median	1067251.374	288952.353	232775.019	1300026.393	112343.912	61605.350	31096.070	30509.280	213238.000	16524.000
SD	102717.974	25536.182	26024.855	128695.795	6855.835	22652.759	15379.028	7274.680	7210.056	461.504
SE	59304.250	14743.321	15025.457	74302.552	3958.218	13078.576	8879.086	4200.038	4162.728	266.450
Skewness	0.88681	1.53651	0.57038	0.82538	-1.28587	1.64206	1.63136	1.66275	0.66979	-0.02275

Table 5.6 *Post-Merger Key Parameters of State Bank of India*

Financial Year	Advances in India (AAI) (Rupees in crore)	Priority sector advances in India (PSA) (Rupees in crore)	Advances outside India (AOI) (Rupees in crore)	Grand total of Advances (GTA) (Rupees in crore)	Interest Earning on Advance/ Bills (IEA) (Rupees in crore)	Gross NPA (GNPA) (Rupees in crore)	Net NPA (NNPA) (Rupees in crore)	Provision for NPA (Rupees in crore)	Number of Employees (No.)	Number of Branches (No.)
Base Year	1287641.76	341257.50	283436.62	1571078.38	119510.00	112342.99	58277.38	54065.61	209567	17365
2017-18	1636607.79	448358.96	298272.40	1934880.19	141363.17	223427.46	110854.70	112572.76	264041	22620
2018-19	1884879.47	520729.78	300997.45	2185876.92	161640.23	172750.36	65894.74	106855.62	257252	22218
2019-20	1969180.48	526675.87	356109.08	2325289.56	179748.84	149091.85	51871.30	97220.55	249448	22374
CAGR	11.20%	11.46%	5.87%	10.30%	10.74%	7.33%	-2.87%	15.80%	4.45%	6.54%
Mean	1830222.578	498588.202	318459.644	2148682.223	160917.412	181756.557	76206.913	105549.643	256913.667	22404.000
Median	1884879.468	520729.776	300997.450	2185876.918	161640.232	172750.360	65894.740	106855.620	257252.000	22374.000
SD	172892.104	43601.283	32633.828	197844.518	19203.039	37977.354	30814.218	7758.980	7302.381	202.672
SE	99819.303	25173.212	18841.149	114225.586	11086.880	21926.236	17790.597	4479.649	4216.031	117.013
Skewness	-1.28042	-1.69588	1.71847	-0.81610	-0.16914	1.00714	1.33729	-0.73597	-0.20805	0.65151

From Table 5.5 and Table 5.6, we can notice that the Compound Annual Growth Rate (CAGR) has grown in progress in all divisions from pre-fusion to post-fusion. Advisory Advances in India (AAI) rose from 6.58% to 11.2, the PSA rose from 1.79% to 11.46%, with Advances Outside India (AOI) rising from 2.68% to 5.87%, while the GTA (Total Advances) rose from 2.4% to 10.3%.

On the other hand, the CAGR of advance interest earnings (IEA) grew from 1.41 percent before fusion to 10.74 percent after fusion.

The Gross Non-Performing Assets (GNPA) CAGR rose from 5.61% to 7.33%. Whereas in the case of Net NPA (NNPA) CAGR dropped from 5.88 percent to (-) 2.87 percent before mergers. NPA provision has risen many times from 5.34% to 15.8%.

Again, CAGR rose from (-) 0.52% to 4.45% for the number of workers, while the number of branches grew from 0.71% to 6.54%.

From the aforementioned data, it is apparent that all progress parameters have been increased. The profit from progress also rose in the post-merger era. The

number of workers is decreasing, while the number of branches is continuously rising.

The GNPA is always growing before fusion, save in 2014-15, while the GNPA has been consistently decreasing after fusion. In addition, the NNPA showed a downward trend, and even to CAGR was negative.

Table 5.7 *Test Results of Key Parameters of the State Bank of India*

Test Parameters	Advances in India (AAI)	Priority sector advances in India (PSA)	Advances outside India (AOI)	Grand total of Advances (GTA)	Interest Earning on Advance/ Bills (IEA)	Gross NPA (GNPA)	Net NPA (NNPA)	Provision for NPA	Number of Employees (No.)	Number of Branches (No.)
Pre-merger Mean Value	1088389.103	299441.118	236129.407	1324518.510	110164.676	72167.830	38164.557	34003.273	214336.667	16521.667
Post-merger Mean Value	1830222.578	498588.202	318459.644	2148682.223	160917.412	181756.557	76206.913	105549.643	256913.667	22404.000
t Stat	-13.8866	-10.7351	-11.3227	-16.4673	-6.9410	-3.4059	-1.5745	-8.4776	-58.8352	-16.7897
t critical at two tail	4.3027	4.3027	4.3027	4.3027	4.3027	4.3027	4.3027	4.3027	4.3027	4.3027
P two tail value	0.005146	0.008566	0.007710	0.003667	0.020132	0.076452	0.256030	0.013630	0.000289	0.003529

The following table shows that the mean values of AAI, PSA, AOI, and GTA after the merger are higher than the matching mean values before the merger.

The mean value of interest on advances also increased after merging. The GNPA, NNPA and NPA provisions have also increased. A similar result is shown for the average number of workers and the number of branches of the State Bank of India.

These data show that the bank is making progress in India, the priority sector, and outside India. On the one hand, the Bank earned more from Advance after the merger, while on the other hand, the Bank found more NPA in its Advance portfolio. The suggestion was, therefore, that the bank did well to provide more advances and to earn from the resulting increase in loans. Now, the test is also used to see if the change in the critical parameters before and after fusion is significant or not and the findings are shown in Table 5.7. t Test is used to evaluate whether or not the change in the main parameters in pre- and post-merger periods is significant. The t stat values according to the t-test at a meaning level of 5% are examined when all parameters fall below the t critical value of two tails, p being less than 0.05, except GNPA and NNPA. There are substantial changes in performance metrics, namely Advances in India, Priority Advances in India, Advances outside India, Total Advances, Advances, and NPA, employee and branch number provision. On the other hand, the pre- and post-merger periods appear not to be that different. Mean value as demonstrated by the p-test for the Gross NPA and Net NPA over seven years.

In the tables above, changes were observed over a period of 7 years: 3 years before the merger and 3 years after. The test results showed that the change is substantial.

The absolute figures do not provide us with significant values until they are connected with other important information. The Branch efficiency is evaluated in terms of Advances by Branch, Advances by Employee Earnings by Branch and

Earnings by Bank Employee. Human resources are an organization's most essential asset and banks are no exception. This study assessed employee productivity using four ratios: employee advance, employee earnings, GNPA by employee, and NNPA per employee.

6. Conclusion

The empirical analysis of the pre- and post-merger performance of the State Bank of India (SBI) reveals that the merger led to a substantial expansion in the scale of banking operations. Key indicators such as Advances in India, Advances Outside India, Priority Sector Advances, and Total Advances exhibited consistent growth in the post-merger period. This indicates that the merger successfully enhanced the bank's outreach, credit deployment capacity, and market presence. Additionally, the increase in the number of employees and branches contributed significantly to the expansion of overall business volume.

The study also identifies a positive association between advances and earnings, suggesting that the growth in lending activities supported income generation. However, when performance is evaluated at the micro level—specifically in terms of employee productivity and branch efficiency—the results indicate no statistically significant improvement. This suggests that while the merger enabled scale expansion, it did not proportionately enhance operational efficiency. The growth in advances appears to be largely driven by the expansion of the workforce and branch network rather than by improvements in efficiency.

With respect to asset quality, Gross NPAs, Net NPAs, and NPA provisions demonstrated a declining trend in the post-merger period. Nevertheless, the reduction was not statistically significant, indicating that the merger did not lead to a substantial improvement in credit risk management. Furthermore, no significant differences in NPA levels at the employee and branch levels were observed between the two periods, reinforcing the conclusion that asset quality improvements were limited.

Overall, the findings suggest that the merger was effective in achieving scale and outreach, but less successful in improving efficiency and asset quality. This highlights the importance of stronger post-merger integration strategies, particularly in human resource optimization, risk management practices, and operational restructuring.

7. Scope for Future Research

Future studies can extend this research by incorporating a longer post-merger time horizon to capture long-term effects more accurately. A comparative analysis across multiple banks involved in mergers in the Indian banking sector could yield broader generalisations. Additionally, future research may employ advanced econometric techniques, such as panel data analysis and efficiency models (e.g., DEA), to better assess productivity changes. Qualitative aspects such as organizational culture, technological integration, and managerial effectiveness can also be explored to understand the underlying causes of limited efficiency gains. Finally, examining

customer-level outcomes and the impacts on financial inclusion would provide a more holistic evaluation of banking sector consolidation.

Conflict of interest

The authors declare that there is no conflict of interest in this study

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