PROFITABILITY AND EFFICIENCY DYNAMICS IN POST-MERGER INDIAN BANKS:

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ABSTRACT

Mergers and acquisitions in the Indian banking sector have accelerated sharply over the past two decades, driven by government policy, competitive pressures, and the need to resolve asset quality stress in public sector banks. Yet despite the volume of consolidation activity, the question of whether these mergers have actually improved bank profitability and efficiency remains contested in the academic literature. This paper examines the financial performance of seven selected acquiring banks: Kotak Mahindra Bank, State Bank of India, ICICI Bank, Deutsche Bank AG, BNP Paribas, Banco Sabadell, and Canara Bank before and after their respective merger transactions. Using ratio analysis across four dimensions (profitability, liquidity, capital adequacy, and operating efficiency) and the paired sample t-test at a five per cent significance level, the paper evaluates whether observed post-merger changes in financial metrics are statistically significant. The results consistently indicate that across all tested dimensions, the null hypothesis of no significant impact is accepted in each case. While directional improvements are evident, particularly in operating profit margins and asset quality, these do not reach statistical significance within the three-year post-merger assessment window. A special analytical focus is placed on the 2020 merger of Canara Bank and Syndicate Bank, the most recent and consequential public sector bank consolidation, which shows the strongest recovery trajectory. The paper also considers the legal and regulatory framework governing bank mergers in India, including the role of the Reserve Bank of India, the Companies Act, and SEBI regulations. The study concludes that mergers in the Indian banking sector function primarily as structural stabilisers rather than immediate performance accelerators, and that their full financial benefits typically materialise beyond the short-term assessment window commonly used in academic studies.

Keywords: Mergers and Acquisitions, Indian Commercial Banks, Profitability, Efficiency, Paired t-Test, CAMEL Framework, Bank Consolidation, Post-Merger Performance, Canara Bank, NPA Resolution.

CHAPTER 1: INTRODUCTION

1.1 Introduction

The Indian banking sector occupies a position of foundational importance in the national economy. It channels savings into investment, supports credit creation, facilitates payment systems, and underpins the broader financial architecture within which trade and commerce operate. Commercial banks in India encompassing public sector banks, private sector banks, regional rural banks, and foreign banks, together manage a balance sheet of well over Rs. 200 trillion and serve over a billion customers across urban, semi-urban, and rural areas.

The Indian banking industry has seen a number of changes after the liberalisation of the Indian economy in 1991 because of changes in both regulations and structures. The 1991 and 1998 Narasimham Committee reports started the groundwork for the introduction of prudential norms, capital adequacy requirements related to the Basel frameworks, and the introduction of competition through deregulation. The creation of this reform environment resulted in the acceleration of mergers and acquisitions as a tool for the restructuring and consolidation of banks. The history of mergers in the Indian banking sector can be split into different waves. The first wave consisted of voluntary mergers, and an example of this would be the strategic merger of HDFC Bank with Times Bank in 2000, the merger of ICICI Bank with Bank of Madura in 2001, and the merger of Punjab National Bank with Nedungadi Bank in 2003. The second wave started with the government when, in 2019, Finance Minister Nirmala Sitharaman announced the merger of ten public sector banks into four larger banks. This resulted in Canara Bank merging with Syndicate Bank, Punjab National Bank merging with Oriental Bank of Commerce as well as United Bank of India, and Union Bank of India merging with Andhra Bank and Corporation Bank, all of which became effective in April 2020. The mergers are based on the logic of creating additional economies of scale, a better use of capital, a greater coverage of the branch network, improved technological infrastructure, and greater competitiveness against private and foreign sector banks. However, the financial literature on the post-merger performance of banks presents a more subtle and conflicting analysis. While some studies state that mergers consolidate profitability and cost reductions, other studies find that the benefits of a merger are either marginal, delayed, or uneven across the financial spectrum. This paper attempts to answer the question and contribute to the debate by performing a structured multidimensional financial analysis, through ratio analysis and inferential statistical testing, of selected merger cases of both Indian and foreign banks. In addition, the analysis is placed within the context of the legal and regulatory framework governing bank mergers in India, as the outcomes of financial performance are intertwined with the regulatory framework of the consolidation process.

1.2 Statement of the Problem

Empirical literature evaluating Indian bank mergers, and the measurable and statistically verifiable impacts of these mergers on the banks' financial performance is virtually non-existent despite the substantial investment of policy resources in banking consolidation. Most prior studies are constrained by the use of descriptive ratio

comparisons, and the absence of statistical significance testing, leaving the post-merger changes unexplained and the question of whether the changes are real improvements or just noise from performance variance.

Furthermore, most studies are overly reductionist, evaluating the financial effects of one merger or one financial metric (e.g., return on assets, net profit margin), ignoring the multiple dimensions of profitability, liquidity, capital adequacy, and operational efficiency. Consequently, the existing evidence is highly fragmented and makes systematic assessments of the financial impact of mergers on different types of banks and in different merger situations difficult.

This study attempts to fill this void by statistically analyzing the financial performance of seven mergers of Indian public and private sector banks and foreign bank consolidations using paired t-tests on four dimensions of financial performance. It also includes the policy-driven merger of Canara Bank and Syndicate Bank in 2020, which allows for a medium-term post-merger analysis.

1.3 Research Objectives

The study is directed by the following objectives:

(i) To evaluate the financial performance of selected acquiring banks, in the periods before and after the merger, in terms of profitability, liquidity, capital adequacy, and operational efficiency.

(ii) The aim is to evaluate using the paired sample t-test if the observed changes in financial performance during the pre-and post-merger periods are of statistical importance. \

(iii) The objective is to examine the legal and regulatory structures relating to the governance of bank mergers in India.

(iv) The objective is to study the various concepts that relate to mergers and acquisitions and the reasons for their success or failure.

(v) The objective is to compare Indian bank mergers with foreign bank mergers and draw conclusions to assist in formulating bank merger policies and strategies.

1.4 Research Questions

The following research questions guide the research.

(i) What are the key drivers of mergers and acquisitions in the Indian commercial banking sector and how do they compare with the international commercial banking sector?

(ii) Has there been a significant change in the financial performance of the acquiring banks in terms of profitability, liquidity, capital adequacy, and operational efficiency post mergers?

(iii) Do the post-merger financial performance changes fall within the normal range of performance variations or are they statistically significant?

1.5 Research Methodology

The study employs doctrinal and empirical research methodologies. Under doctrinal methodology, a study is done principally on the legal sources of the framework on the regulation of bank mergers in India, such as the Banking Regulation Act of 1949, the Companies Act of 2013, the Reserve Bank of India Act of 1934, and the SEBI (Listing Obligations and Disclosure Requirements) Regulations of 2015, as well as the relevant circulars and policy directions of the RBI. The secondary sources of law include the commentary of academicians, reports of various committees, and guidelines of the regulators.

The empirical part is based on the collection and analysis of the secondary financial data as contained in the published annual reports of the sampled banks, the RBI's published annual reports, and the financial data reporting services. The computation of the following financial ratios is done for the three years before and after the merger (excluding the year of merger) net profit margin, operating profit ratio, return on net worth, return on assets, credit deposit ratio, investment deposit ratio, cash deposit ratio, current ratio, quick ratio, capital adequacy ratio, and the ratio of fixed assets to turnover. The analysis is based on the computation of mean ratios before and after the merger, and a paired sample t-test is employed at the 5% significance level to determine the statistical significance of the mean differences. All calculations were done using the statistical tool of Microsoft Excel.

1.6 Scope, Limitations, and Alignment with SDG Goals

This research examines seven merger transactions that took place between 2010 and 2020, with particular focus on acquiring banks within and outside India. Due to constraints in data availability, the post-merger observation period is limited to three years for most bank pairs, a period that is likely insufficient to capture the full extent of financial impacts that result from mergers with intricate multi-year integrations. The research explores a limited set of financial ratios based on accounting measurements and therefore ignores the potentially useful market-based performance indicators such as stock returns, Tobin's Q, or credit ratings.

The research contributes to SDG Goal 8 (Decent Work and Economic Growth) as it explores financial consolidation strategies that impact the long-term viability of credit institutions and of the economy as a whole. It also relates to SDG Goal 16 (Peace, Justice and Strong Institutions) as it investigates the degree of regulatory governance, including the transparency, accountability, and protection of depositors, degree of oversight that governs bank mergers.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The financial impact of bank mergers has been the focus of substantial interest and scholarship, and the application of multiple methodologies has been employed to evaluate whether consolidation results in the expected increase in efficiency and profitability. The literature is heterogeneous as is the outcome of consolidation of various banks merger motivations, and time horizons. This chapter surveys the key contributions that inform the present study, identifying areas of agreement, divergence, and remaining gaps.

2.2 Literature Review

Bhattacharyya, Lovell, and Sahay (1997) examined the productive efficiency of Indian commercial banks following the economic liberalisation of 1991, applying data envelopment analysis and stochastic frontier methods to decompose productivity into efficiency change and technological change. Their findings established that liberalisation generally pushed banks toward greater operational discipline, though the effects were uneven across public and private sector institutions. Crucially, the study confirmed that the pre-reform environment had insulated public sector banks from competitive pressure in ways that suppressed efficiency a finding that set the stage for later arguments in favour of consolidation as a means of restoring competitive discipline.

Kumar and Bansal (2008) investigated the post-M&A performance of Indian corporates using financial ratios including return on assets, return on equity, and profitability margins. While their study was not confined to banking, their central finding that M&A outcomes in India are highly heterogeneous, with some firms gaining and others experiencing only marginal or short-lived improvements resonated strongly with subsequent banking-specific research. They identified integration management, cultural alignment, and leadership quality as determinants of whether anticipated merger gains actually materialise.

Golbe and White (1993) contributed a foundational macro-level analysis of merger waves, demonstrating through time-series evidence that mergers cluster during periods of economic expansion, rising valuations, and favourable regulatory environments. Their framework helps contextualise India's banking merger waves: the government-directed consolidation of 2019-2020 can be understood as a policy-triggered wave responding to the systemic NPA crisis and the need for capitalisation efficiency, rather than a market-driven phenomenon driven by valuation optimism.

Goyal and Joshi highlighted operational and managerial challenges in Indian bank mergers IT system incompatibility, branch rationalisation, workforce restructuring, and cultural integration as determinants of merger success that quantitative studies tend to underweight. Their qualitative analysis complements the ratio-based evidence by explaining why financially sound mergers sometimes fail to deliver expected performance improvements in the short term.

Panwar argued that M&A had become a strategic necessity for Indian banks seeking to compete in a globalised financial environment, articulating the logic of scale economies, risk diversification, and technology modernisation. While his study lacks empirical performance assessment, it provides the strategic rationale against which post-merger outcomes can be evaluated.

Rajamani and Ramakrishnan examined the HDFC Bank-Centurion Bank of Punjab merger using standard profitability ratios and the paired t-test, finding statistically significant improvements in gross profit margin, net profit margin, operating profit margin, and return on equity post-merger. This is one of the relatively few Indian banking studies to confirm statistical significance, and it provides a counterpoint to the broader pattern of null-hypothesis acceptance found in other studies.

Patel (2015) found, in a multi-bank study using paired t-tests, that none of the four Indian banks examined showed significant improvement in financial performance post-merger. This finding, while counter to popular expectations, aligns with the majority of international evidence and provides an important corrective to the optimistic narrative surrounding bank consolidation.

Raja Abhay (2016) provided a long-horizon analysis across a decade, finding moderate and uneven post-merger improvements in profitability and solvency. The study's key contribution is its demonstration that merger benefits, where they occur, tend to materialise gradually rather than immediately reinforcing the argument that short assessment windows may systematically understate merger effectiveness.

Rathinam and Sridharan documented improvements in shareholder earnings and long-term solvency in merged Indian banks, while finding liquidity outcomes less consistent. Their multi-dimensional analysis supports the view that merger impacts differ across financial parameters and that aggregate assessments can obscure important dimension-specific patterns.

Prasad and Ravinder (2012) applied the CAMEL framework to post-merger evaluation of nationalised Indian banks, finding heterogeneous outcomes across capital adequacy, asset quality, management efficiency, earnings, and liquidity. Their study is particularly relevant to the present research because it establishes that structured framework-based assessments reveal more nuanced merger impacts than single-ratio analyses.

Collectively, this literature establishes three central points for the present study. First, post-merger financial performance in Indian banking is rarely dramatically positive or negative the dominant outcome is preservation of the pre-merger performance level, with modest directional improvements that may or may not reach statistical significance. Second, the time horizon of assessment matters considerably, and three-year windows may be too short for complex merger integrations. Third, the type of merger whether market-driven private sector consolidation or policy-directed public sector amalgamation significantly influences the nature of post-merger outcomes, making comparative analysis across merger types particularly valuable.

CHAPtER 3: IMPACT OF MERGERS AND ACQUISITIONS ON PROFITABILITY AND EFFICIENCY OF INDIAN COMMERCIAL BANKS CONCEPTUAL AND HISTORICAL FRAMEWORK

3.1 Introduction and Historical Evolution of Bank Mergers in India

The history of bank mergers in India stretches back to the early twentieth century, but it is only in the post-liberalisation era that mergers have assumed strategic rather than merely corrective significance. In the colonial and early post-independence period, bank mergers were primarily crisis-driven: weaker, undercapitalised institutions were absorbed by larger ones to prevent depositor losses and maintain public confidence in the banking system. The Reserve Bank of India, established in 1935, played a central role in supervising these early consolidations.

The nationalisation of fourteen major commercial banks in 1969 and six more in 1980 fundamentally altered the merger landscape. Under state ownership, the rationale for mergers shifted from market competition to administrative rationalisation. The State Bank group, which had absorbed several associate banks over the preceding decades, became the primary vehicle for public sector bank consolidation. The Narasimham Committee I (1991) and Narasimham Committee II (1998) subsequently recommended mergers as a means of creating a smaller number of strong, well-capitalised banks capable of operating internationally, a vision that has only partially been realised.

The private sector bank mergers of the 2000s HDFC Bank with Times Bank, ICICI Bank with Bank of Madura, Punjab National Bank with Nedungadi Bank, and ICICI Bank with Bank of Rajasthan were largely market-driven and reflected competitive consolidation logic. The most significant recent wave, however, was the government's 2019-2020 public sector bank consolidation programme, which reduced the number of public sector banks from 27 to 12 through a series of state-mandated amalgamations.

Table 1: Selected Mergers in the Indian and International Banking Sector (2010–2020)

Acquiring Bank	Target Bank	Year of Merger	Merger Type	Rationale
Kotak Mahindra Bank	ING Vysya Bank	2015	Horizontal	Branch expansion; southern market entry
State Bank of India	State Bank of Indore	2010	Subsidiary merger	Group consolidation; eliminate duplication

Acquiring Bank	Target Bank	Year of Merger	Merger Type	Rationale
ICICI Bank	Bank of Rajasthan	2010	Horizontal	Distressed target; regional network
Deutsche Bank AG	Deutsche Postbank	2010	Cross-segment	Retail expansion for wholesale bank
BNP Paribas	BGZ Bank (Poland)	2015	Cross-border	Agri-lending footprint in Central Europe
Banco Sabadell	TSB Bank (UK)	2015	Cross-border	Geographic diversification into UK retail
Canara Bank	Syndicate Bank	2020	Public sector	Govt. consolidation; 4th largest PSB created
Punjab National Bank	OBC & United Bank	2020	Public sector	Govt. consolidation; capital efficiency

Source: Compiled by Researcher from Annual Reports and RBI Publications

3.2 The Concept of Mergers and Acquisitions (M&A)

Mergers and acquisitions represent a broad category of corporate transactions through which two or more organisations combine their assets, liabilities, and operations. Though the terms are often used interchangeably in common discourse, they carry distinct legal and financial meanings. A merger involves the voluntary combination of two entities to form a single new or continuing legal entity, with the shareholders of both parties typically receiving shares in the combined entity. An acquisition involves one entity, the acquirer purchasing the controlling stake or assets of another entity the target, which may or may not retain its separate legal existence following the transaction.

In the Indian banking context, the distinction carries regulatory significance. Mergers between banks are governed by Sections 44A and 45 of the Banking Regulation Act, 1949, and require the approval of the Reserve Bank of India. Acquisitions of a controlling stake in a bank as opposed to a full merger, require RBI approval under Section 12BB of the Act for acquisitions above specified thresholds. The Companies Act, 2013 supplements these provisions by governing the procedural aspects of mergers, including the requirement for board approval, shareholder resolution, creditor notices, and National Company Law Tribunal (NCLT) confirmation.

3.2.1 The Act of Acquisition

An acquisition occurs when one entity purchases sufficient equity or assets of another to gain operational control. In banking, acquisitions may precede a formal merger by several years: the acquirer builds a controlling stake, integrates management and operations, and eventually seeks regulatory approval for full amalgamation. Deutsche Bank's acquisition of Deutsche Postbank illustrates this approach Deutsche Bank built its stake progressively between 2008 and 2012 before fully merging the entity. In the Indian public sector context, acquisitions take a different form: the government, as the common majority shareholder of multiple public sector banks, effectuates mergers by issuing a gazette notification under Section 9 of the Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970.

3.2.2 Types of Mergers and Acquisitions

3.2.2.1 Merger

A merger is a consensual combination of two entities in which both cease to exist as separate legal persons and a new combined entity is formed, or one entity is absorbed into the other while the absorbing entity continues. In banking, the latter form of absorption is more common. When Canara Bank absorbed Syndicate Bank in April 2020, Canara Bank continued as the surviving entity while Syndicate Bank was dissolved.

3.2.2.2 Acquisition

An acquisition involves the purchase of a controlling interest in a target entity. The target may retain its separate legal identity if the acquisition is of equity alone, or it may be dissolved if the acquisition is followed by a full merger. ICICI Bank's acquisition of Bank of Rajasthan in 2010 involved the purchase of Bank of Rajasthan's shares from its promoters, followed by RBI's amalgamation order under Section 44A of the Banking Regulation Act.

3.2.2.3 Consolidation

Consolidation refers to the combination of two entities to form an entirely new third entity, with both original entities ceasing to exist. While less common in banking than absorption-type mergers, consolidation structures have been used in the cooperative and regional rural banking space in India.

3.2.2.4 Tender Offer

A tender offer is a public invitation by an acquirer to the shareholders of a target company to tender their shares at a specified price, typically at a premium to market. In listed banking companies, tender offers are governed by the SEBI (Substantial Acquisition of Shares and Takeovers) Regulations, 2011, which prescribe mandatory open offer requirements when an acquirer crosses specified shareholding thresholds.

3.2.2.5 Acquisition of Assets

An acquirer may purchase specific assets, including loan portfolios, branch licenses, or technology platforms, rather than the entire entity. In Indian banking, the acquisition of distressed loan portfolios through asset reconstruction companies (ARCs) under the SARFAESI Act represents a form of asset acquisition that achieves partial consolidation without a full bank merger.

3.2.2.6 Management Acquisition (Management Buyout – MBO)

An MBO occurs when the existing management team of a bank acquires controlling ownership, typically through debt financing. While uncommon in the Indian banking context, given the public sector ownership structure, MBOs have been discussed in the context of the privatisation of public sector banks, a policy direction articulated in the Union Budget 2021-22. An MBO in such a context would require enabling amendments to the Banking Companies Nationalisation Acts.

3.2.3 Key Aspects of M&A

Several dimensions are central to evaluating any banking M&A transaction. Strategic fit refers to the degree to which the merging institutions complement each other's geographic presence, product mix, customer base, and technology infrastructure. Regulatory approvals, particularly from the Reserve Bank of India, are a mandatory precondition for any bank merger in India and may involve conditions regarding capital adequacy, branch rationalisation, and employee protection. Cultural alignment between merging institutions particularly where one is a public sector bank and the other a private sector bank, or where cross-border integration is involved is a frequently cited determinant of post-merger integration success. Financial synergies, including cost savings from branch network rationalisation, treasury operations consolidation, and shared IT infrastructure, represent the primary economic justification for bank mergers.

3.2.4 The Structure of Mergers

The structure of a bank merger in India is determined by the applicable statutory framework. For public sector bank mergers, the government issues gazette notifications under the relevant nationalisation acts, specifying the amalgamation scheme, the share exchange ratio, and the effective date. For private sector bank mergers, the process involves an application to the RBI, which examines the merger scheme under Section 44A of the Banking Regulation Act. The RBI may prescribe conditions including minimum capital ratios, branch rationalisation requirements, and depositor protection arrangements before granting approval. Once approved, the amalgamation scheme is given effect under a court or NCLT order, following which the assets, liabilities, employees, and branches of the transferor bank vest in the transferee bank.

3.2.5 Details of Acquisitions

The acquisition of a bank's equity stake requires compliance with multiple regulatory layers. Under the Banking Regulation Act, no person can acquire more than five percent of the paid-up share capital of a banking company without prior RBI approval. For acquisitions of substantial stakes above twenty-six percent in private sector banks, the RBI's licensing and ownership norms impose additional conditions, including fit-and-proper criteria for the acquirer. SEBI's takeover regulations apply concurrently to listed banking companies, requiring open offer obligations when an acquirer crosses twenty-five or thirty-two percent shareholding thresholds, depending on whether a prior holding was involved.

3.2.6 Valuation Matters

3.2.6.1 Comparative Ratios

Comparative ratio valuation involves benchmarking the target bank's financial multiples price-to-book ratio, price-to-earnings ratio, and price-to-net interest income against those of comparable listed banks. This method is particularly useful for initial pricing guidance and was the primary basis for the share exchange ratios determined in India's public sector bank mergers. For example, the Canara Bank-Syndicate Bank share swap ratio of 158:1000 was determined on the basis of market price and earnings per share comparisons.

3.2.6.2 Replacement Cost

Replacement cost valuation estimates what it would cost to build the target bank's franchise from scratch its branch network, customer base, technology platform, and deposit base. In banking mergers, the franchise value of an extensive rural branch network or a geographically concentrated deposit base often exceeds what accounting metrics alone would suggest, making replacement cost analysis a useful supplement to ratio-based valuation.

3.2.6.3 Discounted Cash Flow (DCF)

DCF valuation projects the future free cash flows or, in banking, the distributable earnings after satisfying capital adequacy requirements and discounts them at an appropriate cost of equity. While widely used in investment banking practice, DCF valuation of banks is technically complex because the distinction between operating and financing cash flows is blurred in a bank's business model. The cost of funds is both an input cost and a business activity for a bank, which complicates the application of standard corporate DCF frameworks.

3.2.7 Reasons for Mergers and Acquisitions

Several distinct motivations drive bank mergers in India and internationally. Scale efficiency is the most commonly articulated rationale: larger banks can spread fixed costs technology, compliance, risk management infrastructure across a wider asset base, reducing the average cost per unit of output. Market power considerations

also play a role: a merged bank with a larger depositor base and branch network has greater pricing power in deposit markets and can negotiate more favorable terms with corporate borrowers.

In the Indian public sector context, the government's motivation for the 2019-2020 consolidation programme extended beyond purely economic logic to include strategic goals: reducing the number of institutions requiring direct capital infusion, creating banks of sufficient size to support large infrastructure projects, and simplifying regulatory oversight. The resolution of accumulated NPAs which had reached systemic proportions by 2017-18 was also a key policy driver, with larger merged entities better positioned to absorb NPA-related provisioning without breaching capital adequacy floors.

3.2.8 Stages Involved in M&A

Bank mergers proceed through a structured sequence of stages. The pre-merger phase involves strategic assessment, identification of the target, and preliminary discussions between the management teams. Due diligence follows, covering financial, legal, operational, and regulatory dimensions. For bank mergers specifically, this includes examination of the target's loan book quality, off-balance-sheet exposures, pending litigation, and compliance status with RBI norms. Valuation and negotiation of the share exchange ratio are conducted next, often with the involvement of independent valuers appointed by each party's board. Regulatory approvals are then sought from the RBI and, where applicable, from SEBI and the Competition Commission of India. Upon receipt of approvals, the merger scheme is executed and the integration phase begins, covering branch rationalisation, IT system migration, staff placement, and customer communication.

3.2.9 Reasons for Failure of M&A

Despite their strategic appeal, bank mergers frequently fail to deliver anticipated outcomes. Integration complexity is a primary failure factor: the migration of core banking systems from the target to the acquirer's platform is technically demanding and operationally risky, particularly where the two banks use different software platforms and data architectures. Cultural misalignment, especially between public sector and private sector institutions with fundamentally different work cultures, remuneration structures, and promotion policies, creates resistance that impedes operational integration.

Overestimation of synergies is another common failure driver. Merger projections frequently assume cost savings and revenue enhancements that prove difficult to achieve in practice, particularly when branch rationalisation is constrained by employee union objections or when anticipated cross-selling opportunities do not materialise. In the Indian context, the 2004 merger of Global Trust Bank with Oriental Bank of Commerce illustrated the risks of underestimating target bank liabilities: Global Trust Bank's undisclosed NPA burden significantly impaired the post-merger financial health of Oriental Bank. More recently, TSB Bank's post-merger IT migration failure

in the United Kingdom caused significant operational disruption and regulatory sanction for Banco Sabadell, demonstrating that technology integration failure can undermine even structurally sound merger transactions.

CHAPTER 4: COMPARATIVE STUDY OF FINANCIAL PERFORMANCE OF SELECTED COMMERCIAL BANKS PRE AND POST-MERGER

4.1 Introduction

This chapter presents a comparative analysis of the financial performance of seven acquiring banks before and after their respective merger transactions. Ratio analysis is adopted as the principal evaluative methodology, covering profitability ratios, liquidity and debt coverage ratios, capital adequacy indicators, and operating efficiency measures. For each bank pair, pre-merger averages are computed over a three-year window immediately preceding the merger year, and post-merger averages are computed over three years following the merger, with the merger year itself excluded to avoid distortion from one-time transaction charges and restatement effects.

4.2 Profitability Analysis

Profitability ratios measure the bank's ability to generate earnings relative to its revenue, assets, and shareholder funds. The four ratios examined, net profit margin, operating profit ratio, return on net worth (RONW), and return on assets (ROA), collectively capture the efficiency of income generation, cost management, and asset deployment.

Across the seven banks studied, the most consistent finding is that the operating profit ratio improves more reliably in the post-merger period than the net profit margin. This pattern reflects a common merger dynamic: while operating efficiencies begin to emerge relatively quickly through cost rationalisation and network integration, net profitability is depressed in the early post-merger years by merger-related provisions, integration costs, and one-time charges. ICICI Bank shows the most pronounced profitability improvement, with net profit margin rising from 10.75 per cent to 16.24 percent and operating profit ratio from 15.93 percent to 21.84 per cent. Banco Sabadell's operating profit ratio nearly doubled from 12.96 percent to 27.17 per cent. Canara Bank, despite recording losses in FY2020, achieved the strongest medium-term recovery, with net profit margin rising from 3.42 percent to 8.65 per cent by FY2021-23.

Table 2: Pre and Post-Merger Profitability Ratios Comparative Summary

Bank (Acquirer)	Net Profit Margin Pre (%)	Net Profit Margin Post (%)	Op. Profit Ratio Pre (%)	Op. Profit Ratio Post (%)	ROA Pre (%)	ROA Post (%)
Kotak Mahindra	16.40	17.57	25.32	31.57	1.66	1.40
State Bank of India	11.16	9.35	22.49	23.25	0.99	0.85
ICICI Bank	10.75	16.24	15.93	21.84	1.10	1.38
Deutsche Bank AG	3.44	5.36	-1.00	5.04	4.10	2.50
BNP Paribas	9.57	9.44	12.55	11.37	1.38	1.19
Banco Sabadell	5.36	12.41	12.96	27.17	2.89	2.27
Canara Bank	3.42	8.65	18.34	24.10	0.18	0.56

Source: Compiled by Researcher from Annual Reports and RBI Publications

4.3 Liquidity Analysis

Liquidity ratios assess the bank's capacity to meet short-term obligations and manage its liquid asset base. The credit deposit ratio (CDR) measures the proportion of deposits deployed as loans. A higher ratio indicates greater credit intensity and, correspondingly, lower liquidity buffer. The investment deposit ratio (IDR) reflects deposits channelled into investment securities, typically government bonds. Current and quick ratios measure the coverage of short-term liabilities by liquid assets.

The credit deposit ratio increased post-merger in most cases, reflecting the expanded lending activity of the merged entity. ICICI Bank's CDR rose dramatically from 45.69 percent to 98.13 percent, reflecting its aggressive credit expansion following the acquisition of Bank of Rajasthan's branch network. SBI's CDR rose from 76.41 percent to 85.60 per cent, consistent with the increased lending scale of the combined entity. Kotak Mahindra Bank's CDR, by contrast, declined from 94.48 per cent to 86.71 per cent, suggesting a more conservative post-merger lending posture. Investment deposit ratios generally declined post-merger across the sample, suggesting a compositional shift from investment-driven deployment to core lending activity.

Table 3: Pre and Post-Merger Liquidity Ratios Comparative Summary

Bank	CDR Pre (%)	CDR Post (%)	IDR Pre (%)	IDR Post (%)	Current Ratio Pre	Current Ratio Post
Kotak Mahindra	94.48	86.71	51.89	33.04	0.37	0.54
State Bank of India	76.41	85.60	36.41	29.21	0.45	0.32
ICICI Bank	45.69	98.13	48.29	60.24	0.98	2.02
Deutsche Bank AG	66.04	89.87	74.79	53.23	0.96	0.81
BNP Paribas	85.75	88.80	61.87	42.09	1.22	1.10
Banco Sabadell	12.64	8.69	6.98	3.91	1.33	0.63
Canara Bank	71.28	74.38	—	—	0.04	0.06

Source: Compiled by Researcher from Annual Reports and RBI Publications

4.4 Capital Adequacy Analysis

Capital adequacy, measured primarily through the capital adequacy ratio (CAR) computed under Basel norms, reflects the bank's capacity to absorb unexpected losses. In the Indian regulatory context, the Reserve Bank of India prescribes a minimum CAR of 11.50 percent for domestic systemically important banks (D-SIBs) and 9 per cent for other scheduled commercial banks, in line with Basel III requirements.

Among the banks studied, ICICI Bank showed the most notable improvement in capital adequacy, with CAR rising from 16.30 percent to 18.32 percent post-merger reflecting the combined entity's stronger capital base relative to its risk-weighted assets. Canara Bank's CAR improved from 12.63 percent to 15.28 per cent, supported by the government's capital infusion of Rs. 6,571 crore and subsequent internal capital generation from recovered profitability. Kotak Mahindra Bank and SBI maintained CARs above regulatory minimums throughout both periods, with marginal post-merger adjustments. In no case did the merger result in a breach of capital adequacy norms, suggesting that regulatory pre-approval requirements adequately screened out merger combinations that would have threatened the acquirer's capital position.

4.5 Operating Efficiency Analysis

Operating efficiency ratios capture how effectively the bank translates its resources into income while managing costs. The key indicators examined include interest income to total assets, net interest income to total assets, operating expense to total assets, operating profit to total assets, and fixed assets turnover.

Net interest margin the spread between interest earned on loans and interest paid on deposits is arguably the most important operating efficiency indicator for a bank. Across the study sample, net interest income ratios showed modest improvements post-merger in most cases, particularly for ICICI Bank and Canara Bank, reflecting the improved cost of funds and pricing power of the larger merged entities. Fixed assets turnover ratios improved post-merger for Kotak Mahindra Bank and ICICI Bank, indicating more productive utilisation of physical infrastructure.

Operating expense ratios showed mixed results. Deutsche Bank and Banco Sabadell both experienced rising operating expenses post-merger, reflecting the higher cost base of retail banking operations absorbed through the respective acquisitions. For Indian private sector banks, operating expense ratios remained broadly stable, which is consistent with the gradual nature of branch rationalisation in the Indian context, where labour protections and union agreements constrain immediate cost reduction.

4.6 Canara Bank and Syndicate Bank: Case Analysis (2020 Merger)

The merger of Syndicate Bank with Canara Bank effective April 1, 2020, merits particular analytical attention as the most consequential and recent public sector bank consolidation in India. The transaction created the fourth-largest public sector bank in India by total business, with combined assets exceeding Rs. 15 trillion and a branch network of over 10,000 branches.

Syndicate Bank had been established in Manipal in 1925 and was known for its pioneering Pigmy Deposit Scheme, which mobilised small savings through door-step collection agents and made the bank a pioneer of microfinance practices long before the term entered mainstream discourse. By 2018-19, however, Syndicate Bank was carrying a net NPA ratio of 6.16 per cent and a capital adequacy ratio of 12.22 percent, both under stress. Canara Bank's own pre-merger financial position was similarly challenged, with a net NPA ratio of 8.42 percent and severely compressed profitability following large NPA provisions.

The merger coincided with the onset of the COVID-19 pandemic, which imposed additional operational and economic stress on the merged entity in FY2020-21. Integration costs, merger-related provisions, and pandemic-driven credit stress combined to produce losses in the initial post-merger year. However, from FY2021-22 onwards, the trajectory reversed sharply. The Insolvency and Bankruptcy Code mechanism, combined with aggressive recovery action and the government's capital infusion, enabled the bank to reduce its net NPA ratio from 8.42 per cent pre-merger to 3.73 per cent by FY2022-23. Return on equity improved from negative territory

to 11.52 per cent. EPS, which had been negative at Rs. -18.63 in the pre-merger period, recovered to Rs. 11.37 post-merger. Dividends were resumed after a multi-year hiatus.

Table 4: Canara BanKey Financial Metrics Pre and Post-Merger with Syndicate Bank

Indicator	Pre-Merger Avg (FY17–19)	Post-Merger Avg (FY21–23)	Direction
Net Profit Margin (%)	3.42	8.65	↑ Improved
Return on Net Worth (%)	4.87	11.52	↑ Improved
Return on Assets (%)	0.18	0.56	↑ Improved
Net NPA Ratio (%)	8.42	3.73	↓ Declined (Positive)
Capital Adequacy Ratio (%)	12.63	15.28	↑ Improved
Earnings Per Share (Rs.)	–18.63	11.37	↑ Recovery
Dividend Per Share (Rs.)	0.00	3.20	↑ Resumed

Source: Canara Bank Annual Reports (FY2017–FY2023); Screener.in; RBI Publications

By FY2025-26, Canara Bank's net NPA ratio had declined further to 0.45 percent, its return on equity stood at 17.71 percent, and its earnings per share had recovered to Rs. 19.34. Market capitalisation exceeded Rs. 1,27,760 crore. These metrics validate the long-term strategic rationale of the merger, even if the short-term financial disruption in FY2020-21 was substantial.

CHAPTER 5: IMPACT OF MERGERS AND ACQUISITIONS ON FINANCIAL PERFORMANCE STATISTICAL ANALYSIS

5.1 Introduction and Hypothesis Framework

The present chapter builds upon the descriptive ratio analysis of Chapter 4 by applying inferential statistical testing to determine whether the observed pre-post differences in financial performance are statistically significant. The paired sample t-test is employed as the primary statistical tool, applied at a significance level of $\alpha = 0.05$. Four null hypotheses are formulated for each merger case:

H_o1: There is no significant impact of mergers and acquisitions on the profitability of the selected commercial banks.

H_o2: There is no significant impact of mergers and acquisitions on the liquidity of the selected commercial banks.

H_o3: There is no significant impact of mergers and acquisitions on the capital adequacy of the selected commercial banks.

H_o4: There is no significant impact of mergers and acquisitions on the operating performance of the selected commercial banks.

The null hypotheses are tested for each of the seven bank merger cases. The results for the Indian bank mergers and the selected international cases are presented in the consolidated summary table below.

5.2 Results of Paired t-Test All Merger Cases

The paired t-test compares the mean of financial ratios in the three-year pre-merger period with the mean of the same ratios in the three-year post-merger period. A p-value below 0.05 is required to reject the null hypothesis. For each merger case, the t-statistic, degrees of freedom, and p-value were computed using the paired two-sample t-test function in Microsoft Excel.

Table 5: Consolidated Paired t-Test Results All Hypothesis Tests Across Merger Cases

Bank / Merger	Hypothesis	P-Value	Sig. Level	Result
Kotak Mahindra & ING Vysya	Profitability	0.469	0.05	H_o Accepted
Kotak Mahindra & ING Vysya	Liquidity	0.216	0.05	H_o Accepted

Bank / Merger	Hypothesis	P-Value	Sig. Level	Result
Kotak Mahindra & ING Vysya	Capital Adequacy	0.465	0.05	Ho Accepted
Kotak Mahindra & ING Vysya	Operating Performance	0.281	0.05	Ho Accepted
SBI & SB Indore	Profitability	0.525	0.05	Ho Accepted
SBI & SB Indore	Liquidity	0.986	0.05	Ho Accepted
SBI & SB Indore	Capital Adequacy	0.304	0.05	Ho Accepted
SBI & SB Indore	Operating Performance	0.223	0.05	Ho Accepted
ICICI & Bank of Rajasthan	Profitability	0.285	0.05	Ho Accepted
ICICI & Bank of Rajasthan	Liquidity	0.271	0.05	Ho Accepted
ICICI & Bank of Rajasthan	Capital Adequacy	0.340	0.05	Ho Accepted
ICICI & Bank of Rajasthan	Operating Performance	0.157	0.05	Ho Accepted
Deutsche Bank & Postbank	Profitability	0.715	0.05	Ho Accepted
Deutsche Bank & Postbank	Liquidity	0.991	0.05	Ho Accepted
Deutsche Bank & Postbank	Capital Adequacy	0.571	0.05	Ho Accepted
Deutsche Bank & Postbank	Operating Performance	0.580	0.05	Ho Accepted
BNP Paribas & BGZ Bank	Profitability	0.873	0.05	Ho Accepted

Bank / Merger	Hypothesis	P-Value	Sig. Level	Result
BNP Paribas & BGZ Bank	Liquidity	0.564	0.05	H_0 Accepted
BNP Paribas & BGZ Bank	Capital Adequacy	0.587	0.05	H_0 Accepted
Banco Sabadell & TSB	Profitability	0.176	0.05	H_0 Accepted
Banco Sabadell & TSB	Liquidity	0.796	0.05	H_0 Accepted
Banco Sabadell & TSB	Capital Adequacy	0.376	0.05	H_0 Accepted

Source: Computation by Researcher through Microsoft Excel; Data from Annual Reports and RBI Publications

5.3 Analysis of Results

The results presented in Table 5 reveal a consistent and striking pattern: across all twenty-two hypothesis tests conducted for the six merger cases, not a single null hypothesis is rejected. Every test yields a p-value above the 0.05 significance threshold, indicating that the pre-merger and post-merger financial performance of the acquiring banks are not statistically distinguishable at the chosen significance level.

Among profitability tests, Banco Sabadell's result ($p = 0.176$) comes closest to the rejection threshold. This reflects the large absolute improvement in Banco Sabadell's operating and net profit margins following the TSB merger improvements that are economically material but fall short of statistical significance, partly because of high variance in the post-merger profitability data. ICICI Bank's profitability test ($p = 0.285$) also approaches significance, consistent with the substantial improvements in net profit margin and operating profit ratio documented in Chapter 4.

Liquidity tests yield uniformly high p-values SBI's p-value of 0.986 and Deutsche Bank's p-value of 0.991 indicate virtually zero difference between pre- and post-merger liquidity means. This is an important finding in its own right: it confirms that large banking institutions are able to absorb merger transactions without materially disrupting their liquidity profiles, which is a reassuring finding from the perspective of depositor protection and systemic stability.

Capital adequacy tests are limited by the small number of ratio observations, typically two per bank which produces a critical t-value of 12.7062 for one degree of freedom, making statistical significance practically

unattainable with only two data points. This is an inherent methodological limitation of capital adequacy testing using ratio-based approaches.

Operating performance tests show the greatest spread of p-values, from 0.157 (ICICI Bank) to 0.649 (BNP Paribas). The ICICI Bank result again approaches significance, consistent with the improvement in interest income to total funds and fixed assets turnover ratios documented in the descriptive analysis.

5.4 Interpretation: Statistical vs Economic Significance

A finding that all null hypotheses are accepted must be carefully distinguished from a finding that mergers have no impact. Statistical significance and economic significance are conceptually distinct. A large and economically meaningful improvement such as ICICI Bank's net profit margin rising by 5.49 percentage points may not register as statistically significant if the variance in the underlying data is high relative to the magnitude of the change, or if the number of paired observations is small.

In the present study, the use of average ratios from three-year windows, rather than year-by-year observations, limits the degrees of freedom to three for most tests (four observations per group, giving n–1 = 3 degrees of freedom). This means that the t-critical value for rejection at the five percent two-tailed level is 3.1824 a high bar to clear. Future research using longer time series with annual observations would increase degrees of freedom and statistical power, potentially yielding different conclusions about significance for those cases (like ICICI Bank and Banco Sabadell) where the p-values approach the threshold.

The consistent acceptance of all null hypotheses is, however, also consistent with the broader international evidence on bank merger performance. A substantial body of research across developed and emerging markets finds that bank mergers do not produce statistically significant short-term improvements in accounting-based performance measures. The dominant outcome is performance preservation: the acquiring bank maintains its pre-merger financial profile while absorbing the target's operations. True financial transformation, where it occurs, tends to emerge over a four-to-seven-year post-merger horizon rather than within the three-year window commonly studied.

CHAPTER 6: CONCLUSION

6.1 Summary of Findings

This paper has undertaken a comprehensive analysis of the financial performance dynamics of selected commercial banks before and after their respective mergers, combining ratio analysis across profitability, liquidity, capital adequacy, and operating efficiency dimensions with paired sample t-testing for statistical significance. Seven merger cases spanning the period 2010 to 2020 including both Indian private and public sector banks and international bank mergers, were examined.

The core statistical finding is that across all twenty-two hypothesis tests, the null hypothesis of no significant post-merger change in financial performance is accepted in each case at the five percent significance level. This finding is consistent with the dominant pattern in the international literature on post-merger bank performance.

However, the descriptive ratio analysis reveals a more nuanced picture. Operating profit ratios improved in five of seven merger cases. Net profit margins improved in four cases and declined in two a majority directional improvement that the statistical test does not register as significant. Asset quality improvement was most pronounced in the Canara Bank-Syndicate Bank case, where the net NPA ratio declined from 8.42 percent to 3.73 percent and subsequently to 0.45 percent by FY2025-26. Earnings per share recovered from negative territory to positive and growing values for both Canara Bank and ICICI Bank. These outcomes are economically meaningful even where they do not cross the threshold of statistical significance.

6.2 Legal and Regulatory Observations

The examination of the legal framework governing bank mergers in India suggests that the existing statutory architecture combining the Banking Regulation Act, the Companies Act, and SEBI regulations is broadly adequate for governing the procedural and structural aspects of bank mergers. The Reserve Bank of India's pre-merger approval process effectively screens out mergers that would compromise the acquirer's capital adequacy or create systemic risk.

However, several regulatory gaps warrant attention. First, the disclosure framework for merger negotiations between listed banks remains inadequate: the treatment of unpublished price-sensitive information during due diligence and merger negotiation phases raises important questions under SEBI's insider trading regulations that have not been systematically addressed in enforcement practice. Second, the post-merger integration process receives relatively little regulatory attention: while the RBI prescribes conditions at the time of merger approval, it does not have a comprehensive framework for monitoring integration progress or intervening when integration fails to meet expected milestones.

Third, the government's role as the common majority shareholder in public sector bank mergers creates a unique regulatory dynamic: the government can mandate consolidations on policy grounds without the competitive market discipline that normally governs private sector merger decisions. This raises questions about whether the financial performance standards applied to evaluate private sector mergers are equally applicable to government-directed amalgamations.

6.3 Policy Recommendations

On the basis of the analysis conducted in this paper, the following recommendations are offered for policy consideration.

First, the Reserve Bank of India should develop a structured post-merger monitoring framework that tracks integration progress across technology, operations, and financial performance against pre-approved benchmarks. Where integration milestones are not being met, regulatory intervention should be available before systemic risk accumulates.

Second, SEBI should clarify the application of its insider trading regulations to bank merger negotiations, specifically addressing the duration and scope of trading restrictions for persons with access to merger-related UPSI during the pre-announcement phase.

Third, the assessment window for post-merger financial evaluation should be extended. Three years is demonstrably insufficient to capture the full financial consequences of complex banking mergers. A five-to-seven-year evaluation horizon would provide a more realistic picture of merger effectiveness, particularly for large public sector bank amalgamations.

Fourth, the government's capital infusion policy for merged public sector banks should be structured as performance-linked tranches, with capital released conditional on the achievement of specified financial milestones. This would strengthen the incentive for effective post-merger integration management.

6.4 Concluding Remarks

Bank mergers in India have been one of the defining features of the financial sector's structural evolution over the past two decades. They have reshaped the competitive landscape, altered the distribution of assets and deposits across institutions, and served as instruments of both market-driven consolidation and government-directed financial policy. Whether they have materially improved the profitability and efficiency of the acquiring banks is, on the evidence of this study, a question that cannot be answered with a simple yes or no.

What the evidence does support is the conclusion that well-executed mergers supported by adequate capital, effective integration management, and a favourable regulatory environment are capable of producing genuine and lasting financial improvement. The Canara Bank-Syndicate Bank merger, examined across a five-year post-merger window, provides the strongest evidence of this conclusion. The ICICI Bank-Bank of Rajasthan merger provides corroborating evidence from the private sector.

What the evidence equally supports is that mergers alone are not sufficient. Integration quality, management capability, pre-merger balance sheet health, and macroeconomic conditions all play important roles in determining whether a merger delivers on its financial promise. The statistical finding of null-hypothesis acceptance across all tested cases is a reminder that structural consolidation does not automatically translate into financial transformation; it creates the conditions for transformation, but the realisation of those conditions requires sustained managerial effort over a period extending well beyond the three-year horizon most commonly examined in academic studies.

This paper adds to the growing body of empirical and doctrinal scholarship on Indian bank mergers by providing a structured, multi-dimensional, statistically grounded analysis that draws on a representative sample of merger cases spanning a decade. It is hoped that the findings will contribute to more informed and evidence-based merger policy in the Indian banking sector and stimulate further research using longer time horizons and richer data sets.

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