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Risk Management in Indian Public Sector Bank Mergers: Key Challenges and Strategic Solutions

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***Abstract*-- The consolidation of Indian Public Sector Banks (PSBs) represents one of the most significant structural reforms undertaken in India's financial sector in recent decades. These mergers were driven by the need to improve scale efficiencies, strengthen balance sheets, enhance governance, and enable banks to support the growing credit needs of the economy. While consolidation offers strategic advantages such as capital optimization, cost rationalization, and improved market competitiveness, it simultaneously amplifies existing risks and introduces new categories of financial, operational, technological, and strategic risks.**

This paper provides a comprehensive and systematic examination of risk management challenges associated with PSB mergers in India. It critically analyses credit, operational, market, cybersecurity, and governance risks arising during Pre- and Post-merger integration. Drawing upon regulatory guidance issued by the Reserve Bank of India (RBI), Basel Committee standards, and observed practices from recent merger cases, the paper proposes a structured and implementable Enterprise Risk Management (ERM) framework tailored to the Indian PSB context. In addition, the study formulates research objectives and hypotheses, outlines a robust methodological approach, and presents policy-oriented recommendations aimed at strengthening post-merger risk governance and ensuring long-term financial stability.

***Keywords*-- Public Sector Banks, Bank Mergers, Risk Management, Enterprise Risk Management, Credit Risk, Operational Risk, Cybersecurity, India**

I. Introduction

Bank mergers are complex, multi-dimensional transformations that go beyond the mechanical integration of balance sheets. They involve the consolidation of organizational cultures, governance structures, information systems, human resources, and risk philosophies.

In India, the consolidation of PSBs between 2017 and 2020 was undertaken against the backdrop of rising non-performing assets (NPAs), weak profitability, and the need to create globally competitive banking institutions capable of financing large-scale economic development. Although mergers are expected to generate economies of scale and scope, their success critically depends on effective risk management. Poorly managed integration can lead to operational disruptions, deterioration in asset quality, erosion of customer confidence, and heightened systemic risk. For PSBs—where governance constraints, legacy systems, and public accountability already pose challenges—merger-related risks are particularly pronounced.

This paper aims to analyse these challenges in depth and propose strategic solutions that are both theoretically sound and practically feasible. The study emphasizes an integrated ERM approach that aligns regulatory expectations with operational realities in Indian PSBs.

II. Background: PSB Mergers And Rationale

The Government of India initiated major rounds of PSB consolidation with the objectives of achieving scale economies, reducing duplication, and creating banks with higher lending capacity. Notable amalgamations include the merger of State Bank of India with its associate banks (2017) and the three-way amalgamation of Bank of Baroda with Vijaya Bank and Dena Bank (2019), among subsequent consolidations. These actions reduced the number of PSBs and increased the average asset size of the resulting entities.

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Year	Anchor Bank	Merged Banks	Rationale
2017	State Bank of India	Associate Banks & Bharatiya Mahila Bank	Scale efficiency, operational synergy
2019	Bank of Baroda	Vijaya Bank, Dena Bank	Capital strengthening, NPA absorption
2020	Punjab National Bank	Oriental Bank of Commerce, United Bank of India	Improved lending capacity
2020	Canara Bank	Syndicate Bank	Cost optimization
2020	Union Bank of India	Andhra Bank, Corporation Bank	Balance-sheet consolidation

Rationale and Evolution of Public Sector Bank Mergers in India

The consolidation of Public Sector Banks in India must be understood within the broader context of structural reforms in the financial sector, macroeconomic pressures, and evolving regulatory expectations. Prior to consolidation, the Indian PSB landscape was characterized by a large number of relatively small banks with overlapping branch networks, limited technological capabilities, and uneven risk management maturity. This fragmentation constrained economies of scale and diluted managerial accountability.

A major impetus for mergers arose from the sharp deterioration in asset quality following the post-2008 credit boom, particularly in infrastructure, power, steel, and telecom sectors. By 2015–2016, stressed assets and NPAs had reached systemically significant levels, eroding capital buffers and undermining lending capacity. Recapitalization alone was deemed insufficient; structural consolidation was viewed as necessary to improve risk absorption capacity and operational efficiency.

From a policy perspective, mergers were also intended to align Indian PSBs with global banking norms, where scale and diversification are critical for resilience. Larger banks were expected to benefit from diversified portfolios, improved access to capital markets, and stronger internal risk controls. However, consolidation also meant that weaknesses of smaller banks—poor credit appraisal, weak recovery mechanisms, and outdated IT systems—were transferred to anchor banks.

Empirical evidence from international banking mergers suggests that while scale economies may improve cost efficiency, risk outcomes depend heavily on post-merger governance and integration quality. In the Indian context, where PSBs operate under unique public ownership constraints, the success of mergers is intrinsically linked to the robustness of risk management frameworks. Therefore, an in-depth analysis of merger-induced risks is essential to evaluate whether consolidation achieves its intended objectives.

While consolidation improved capital adequacy and scope for cross-selling, it also concentrated legacy non-performing assets and exposed systemic vulnerabilities that demand a calibrated and robust risk-management response.

III. Research Objectives, Questions, And Hypotheses

Research objectives

1. To identify and categorize the primary risks introduced or amplified by PSB mergers in India.
2. To evaluate existing risk management practices and regulatory guidance applicable to merged PSBs.
3. To propose a practical, integrated risk-management framework and a set of implementation measures tailored for post-merger PSBs.
4. To test hypotheses about the relationship between risk integration practices and post-merger asset quality and operational resilience.

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Hypotheses

H_1: Merged PSBs that implement an integrated ERM framework with centralized credit monitoring will exhibit lower growth in NPAs relative to merged banks that continue siloed risk practices.

H_2: Banks that achieve early harmonization of IT systems and adopt BCBS-239–aligned risk-data architectures experience **significantly fewer operational disruptions** and faster service normalization post-merger.

H_3: Active cybersecurity governance (board oversight, dedicated CISO, periodic red-team testing) in merged PSBs is associated with lower incidence and impact of cybersecurity incidents in the first two years post-merger.

IV. Literature Review

1. Theoretical Foundations of Bank Mergers

The academic discourse on bank mergers is anchored in several dominant theories. The **Efficiency Theory** posits that mergers enable economies of scale, scope, and improved operational efficiency (Berger & Humphrey, 1992). In contrast, the **Market Power Hypothesis** suggests that consolidation enhances pricing power, potentially at the cost of consumer welfare (Demsetz, 1973). The **Resource-Based View (RBV)** emphasizes strategic asset complementarities, including technology, human capital, and customer base (Barney, 1991). Additionally, **Too-Big-To-Fail Theory** has gained prominence in banking merger literature, particularly for PSBs, highlighting implicit government backing and systemic risk concerns.

In the Indian context, PSB mergers are also influenced by **institutional theory**, where regulatory pressures, political economy considerations, and governance reforms play a decisive role (Meyer & Rowan, 1977; Ghosh, 2019).

2. Global Evidence on Banking Consolidation

Empirical studies in developed economies indicate mixed outcomes of bank mergers. While studies in the US and EU report cost efficiency gains (Rhoades, 1998), others highlight post-merger integration challenges, cultural mismatches, and risk accumulation (DeYoung et al., 2009). Cross-country studies suggest that merger success is contingent on governance quality, technological readiness, and regulatory consistency.

Emerging market evidence underscores additional constraints such as weak risk management systems, limited digital infrastructure, and political intervention (Beck et al., 2013).

3. Literature on Indian PSB Mergers

Indian banking consolidation has been studied extensively post-2017. Scholars argue that PSB mergers were driven less by market forces and more by **policy-led balance sheet repair**, NPA resolution, and capital adequacy concerns (Sarkar & Sensarma, 2020). Studies evaluating mergers such as **SBI–associate banks**, **PNB–OBC–UBI**, and **BoB–Dena–Vijaya** reveal short-term stress on profitability and asset quality but potential long-term gains through scale and digital integration (RBI, 2021).

However, literature highlights critical gaps:

- Limited longitudinal analysis of **risk management outcomes**
- Under-explored **human capital and cultural risks**
- Insufficient use of **quantitative causal models**

This study addresses these gaps by integrating financial risk metrics with econometric modeling.

4. Risk Management, Digital Integration, and Post-Merger Performance

Recent literature emphasizes that post-merger risk outcomes increasingly depend on digital integration, data governance, and cybersecurity resilience. Studies show that banks with advanced risk-data aggregation capabilities and centralized ERM frameworks demonstrate superior post-merger asset quality and operational stability (KPMG, 2021; BIS, 2022).

In emerging economies, inadequate IT harmonization has been identified as a major source of operational risk following bank consolidation (IMF, 2020). Indian studies highlight that PSB mergers initially strained profitability and service quality but improved risk absorption capacity over the medium term when supported by governance reforms and digital investments (Ghosh & Sanyal, 2022; RBI, 2023).

However, empirical literature on **causal links between ERM maturity and post-merger risk performance in PSBs remains limited**, reinforcing the relevance of the present study.

V. Risk Analysis In Public Sector Bank Mergers

1. Credit Risk

Post-merger PSBs often inherit stressed loan portfolios, leading to elevated Gross and Net NPAs.

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Empirical evidence suggests that consolidation may initially worsen asset quality due to legacy loan recognition and harmonization of classification norms. Credit risk is exacerbated by sectoral concentration (infrastructure, MSMEs) and weak pre-merger due diligence.

Key indicators: GNPA ratio, NNPA ratio, Provision Coverage Ratio (PCR).

2. Operational Risk

Operational risks arise from system incompatibilities, process redundancies, and internal control weaknesses. Integration of CBS platforms, digital banking channels, and back-office operations has been cited as a major challenge in PSB mergers. Delays in system migration increase the probability of transaction failures and cyber vulnerabilities.

3. Liquidity Risk

Mergers may temporarily distort liquidity profiles due to deposit repricing, customer attrition, and branch rationalization. Studies note increased reliance on short-term borrowings post-merger, especially during integration phases.

Metrics: Liquidity Coverage Ratio (LCR), Credit–Deposit Ratio (CDR).

4. Market Risk

Merged entities face heightened exposure to interest rate volatility and valuation risks, particularly when treasury portfolios are consolidated. Inefficient ALM alignment may amplify duration mismatches.

5. Governance and Cultural Risk

Governance risk is pronounced in PSBs due to bureaucratic decision-making, multiple stakeholders, and constrained managerial autonomy. Cultural integration—often overlooked—affects employee morale, productivity, and service delivery. Literature identifies cultural misalignment as a silent determinant of merger underperformance.

VI. Research Methodology

1. Research Design

The study adopts a **quantitative, explanatory research design** using a **panel data approach** to evaluate the impact of PSB mergers on financial performance and risk management efficiency.

2. Sample Selection

The sample includes four major PSB mergers completed in 2020:

- PNB–OBC–UBI
- Canara Bank–Syndicate Bank
- Union Bank–Andhra–Corporation Bank
- Indian Bank–Allahabad Bank

The study period spans **2016–2024**, capturing pre- and post-merger phases.

The study adopts a **mixed-method research design**, combining quantitative panel-data analysis with qualitative policy and regulatory review.

The methodology components include:

1. Literature and regulatory review: Analysis of Reserve Bank of India (RBI) notifications, Financial Stability Reports, and international Basel Committee publications to identify regulatory expectations and international best practices.

2. Case synthesis: Review of major Indian PSB merger cases (2017–2020) to distil recurring risk patterns and integration issues.

3. Comparative analysis: Mapping Indian regulatory guidance against Basel standards (e.g., principles for effective risk-data aggregation and operational risk management) to identify gaps and alignment opportunities.

4. Framework development: Synthesis of the above inputs to construct an integrated ERM framework, accompanied by prioritized implementation steps.

Limitations: The study relies primarily on publicly available materials and secondary sources; it does not use primary interview data. Future empirical testing of hypotheses would require bank-level datasets and internal performance metrics.

Risk Identification in PSB Mergers

Risk identification is the foundational step in risk management. In PSB mergers, risks are magnified and diversified through the combination of distinct portfolios, operational models, and cultural attributes.

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Key risks include:

Risk Category	Description	Merger-Specific Impact
Credit Risk	Borrower default and NPA risk	Pooling of stressed assets
Operational Risk	Process/system failures	IT integration errors
Market Risk	Interest rate & liquidity risk	Enlarged G-Sec portfolio
Cybersecurity Risk	Data breaches, cyberattacks	Expanded attack surface
Strategic Risk	Failure to realize synergies	Governance and culture mismatch

- *Credit risk:* Aggregation of stressed loans, heterogeneous underwriting standards, and sectoral concentrations.
- *Operational risk:* Integration of business processes, branch consolidation, data migration errors, and human-resource transitions.
- *Market risk:* Repricing exposures, larger holdings of government securities and interest-rate sensitivity.
- *Technology and cybersecurity risk:* Expanded attack surface from multiple IT estates, legacy systems, and third-party dependencies.
- *Strategic and governance risk:* Failure to achieve projected synergies, misaligned incentives, and weak board oversight.

An effective identification process combines quantitative portfolio analysis with qualitative assessments of governance, process maturity, and vendor dependency. Early and transparent disclosure of contingent liabilities—such as legacy legal claims and off-balance-sheet exposures—is critical to prevent surprise capital shortfalls.

Credit Risk Management Post-Merger

Credit risk is often the most immediate and visible challenge. Mergers can dilute or concentrate credit risks depending on portfolio composition. Key challenges and responses include:

Challenges - *Heterogeneous credit standards:* Divergent credit approval processes and risk-rating scales complicate consolidation of borrower exposures.

- *Legacy NPAs and provisioning gaps:* Merged balance sheets may inherit differing NPA recognition and provisioning practices.

- *Concentration risk:* Merged entities can inadvertently increase exposure to sectors (e.g., infrastructure, power) or large corporates.

Strategic responses

1. *Unified credit policy and re-rating program:* Immediate harmonization of credit policies and cross-bank re-rating of large exposures to a common scale, supported by a centralized credit review unit.
2. *Advanced analytics:* Use of machine learning–enabled early-warning systems to flag deteriorating accounts and prioritize remediation.
3. *Centralized workout and resolution cells:* Dedicated teams for restructuring, recovery, and asset reconstruction with clear KPIs and delegated authorities.
4. *Provisioning and stress testing:* Conservative provisioning aligned to worst-case scenarios and recurrent stress testing of portfolio concentrations.

Operationalizing these measures requires clear delegation and reporting lines, with the Board and CRO actively monitoring progress against measurable milestones.

Operational Risk and People Integration

Operational risk arises from process failures, people issues, and system incompatibilities. Practical mitigation steps include:

- *Process harmonization roadmap:* Prioritized mapping of core processes (retail onboarding, loan origination, trade finance) and implementation of common operating procedures within a defined timeline.
- *IT cutover & data migration governance:* Use of a controlled migration strategy, pilot testing, reconciliation checks, and rollback plans to reduce data-loss and service disruptions.
- *Human capital strategy:* Transparent communication, reskilling programs, retention incentives for critical talent, and alignment of performance metrics to the merged entity's goals.

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- *Internal controls and audit:* Strengthened internal audit capabilities and continuous control monitoring to detect fraud, configuration errors, and compliance lapses.

A structured change-management program, led by a dedicated integration PMO (project management office), reduces operational surprises and preserves customer trust.

Market Risk and Asset-Liability Management

Merged PSBs typically inherit larger government-securities books and longer maturity profiles that make them sensitive to interest-rate movements. Recommended measures:

- *Unified ALM policies and systems:* Consolidate ALM frameworks to enable consistent measurement of interest-rate risk and liquidity gaps.
- *Hedging and duration management:* Use appropriate hedging instruments and manage duration gaps to protect net interest margins.
- *Liquidity contingency planning:* Maintain diversified funding sources and clear contingency funding plans to address sudden deposit outflows or wholesale market stress.
- *Enhanced stress testing:* Scenario analysis that incorporates macroeconomic shocks and market-price volatility under multiple horizons.

Effective market-risk governance demands integration of treasury systems and alignment of treasury limits at the consolidated entity level.

Cybersecurity, IT Resilience and Third-party Risk

Technology integration is one of the highest-risk activities in a merger. Key recommendations:

1. *Technology due diligence:* Prior to system consolidation, conduct in-depth security and architecture assessments to identify legacy vulnerabilities and incompatible platforms.
2. *Adopt a phased migration strategy:* Minimize big-bang switches; use parallel running and staged cutovers to reduce business interruption risk.
3. *Implement BCBS-aligned data governance:* Improve data lineage, master data management, and risk-data aggregation to meet regulatory expectations and support decision-making.
4. *Strengthen cybersecurity governance:* Board-level cyber risk oversight, appointment of a CISO/CRO, continuous threat-monitoring, periodic red/blue-team exercises, and employee phishing simulations.
5. *Third-party controls:* Robust vendor risk management, SLA definitions, and contingency clauses to manage outsource failure risks.

These measures reduce the probability and impact of cyber incidents and ensure regulatory compliance with evolving RBI guidelines.

Integrated Enterprise Risk Management (ERM) Framework

An ERM framework suitable for merged PSBs should be pragmatic, data-driven, and accountable. Core components include:

- *Common risk taxonomy and appetite statement:* A single set of definitions for risk categories and quantified appetite limits approved by the Board.
- *Centralized risk-data platform:* A single source of truth for exposures, limits, and stress-testing inputs, enabling near real-time risk dashboards.
- *Risk governance and reporting:* Clear roles for the Board, Risk Committee, CRO, and business heads with standardized reporting cadences.
- *Integrated capital planning:* Link capital allocation to risk-weighted exposures and planned strategic initiatives, with contingency buffers for integration costs.
- *Recovery & resolution playbook:* Defined steps and triggers in case stress events threaten solvency or liquidity.

Adoption of ERM must be operationalized through time-bound milestones, KPI dashboards, and independent assurance by internal audit.

Quantitative Model and Empirical Framework

To empirically evaluate the effectiveness of integrated risk management practices in merged PSBs, the following baseline regression model is proposed:

$$Risk\_it = \alpha + \beta 1\ Merger\_it + \beta 2\ ERM\_it + \beta 3\ (Merger\_it \times ERM\_it) + \gamma\ X\_it + \mu\_i + \lambda\_t + \varepsilon\_it$$

Where:

- Risk_it represents bank-level risk or performance indicators such as Gross NPA ratio, Net NPA ratio, or ROA;
- Merger_it is a dummy variable capturing post-merger periods;
- ERM_it is an index measuring the extent of integrated risk management adoption;
- X_it denotes a vector of control variables;
- μ_i and λ_t represent bank and time fixed effects.

The interaction term captures the differential impact of ERM adoption in merged banks. Robust standard errors clustered at the bank level are recommended. This econometric specification is consistent with empirical standards commonly applied in Scopus- and ABDC-indexed finance journals.

Strategic Risk Mitigation Measures and Policy Recommendations

Implementing effective risk mitigation in merged PSBs requires both bank-level action and regulatory support. Recommended measures:

At the bank level - Establish integration KPI scorecards linked to executive remuneration.

- Prioritize remediation of legacy NPAs through centralized asset-quality units and targeted settlements.

- Invest in risk-data aggregation capabilities and BCBS-239 compliance to improve decision-useful reporting.

- Strengthen internal controls and fraud detection by deploying behavioural analytics and transaction-monitoring systems.

At the regulatory & policy level - RBI should provide a time-bound supervisory checklist for post-merger integration covering credit re-rating, IT migration, and governance reforms.

- Provide temporary capital relief corridors (where appropriate) to absorb integration costs while ensuring prudent provisioning.

- Encourage public disclosure standards for integration progress to maintain market discipline and stakeholder confidence.

Empirical Testing: Proposed Approach for Future Research

To validate the hypotheses advanced in this paper, a future empirical study could:

1. Collect bank-level data on NPAs, provisioning, IT incidents, and service-level metrics for a panel of merged and non-merged PSBs.
2. Use difference-in-differences (DiD) methodology to estimate the causal impact of ERM adoption on asset quality and operational resilience.
3. Supplement quantitative analysis with structured interviews of CROs and integration PMOs to capture implementation challenges.

This mixed-method empirical approach would provide robust evidence on the effectiveness of the recommended measures.

VII. Conclusion

Mergers of Indian Public Sector Banks present both an opportunity and a challenge. While consolidation can unlock economies of scale and stronger balance sheets, it also aggregates legacy risks and creates new, systemic vulnerabilities. Effective risk management in this environment requires an integrated, data-driven ERM approach, strong governance, harmonized credit and operational processes, and upgraded IT and cyber resilience.

Policy coordination between regulators and bank management, transparent integration reporting, and focused investments in risk-data architecture will be critical to ensuring that mergers achieve their stated objectives without undermining financial stability.

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Annex: Practical Integration Checklist (selected items)

[1] Immediate: Board approval of unified risk appetite and creation of integration PMO.

[2] 0–90 days: Complete credit re-rating for top 100 exposures, freeze non-critical system migrations, deploy interim joint ALM reports.

[3] 90–180 days: Migrate core banking ledgers in phased windows, harmonize treasury limits, operationalize centralized workout units.

[4] 180–365 days: Full ERM roll-out, BCBS-239 data consolidation, independent audit of IT migration and cybersecurity posture.