Credit Risk Management in Indian Public Sector Banks: A Comparative Analysis of Basel Principles Compliance (SBI, PNB, and Canara Bank)

Sabu George
Assistant Professor, Panampilly Memorial Govt College
Chalakudy
E-mail: sabugeorge2205@gmail.com

Dr Sajikumar K B
Associate Professor, Govt College
Chelakkara
E-mail: drsajikumarkb@gmail.com

George Sabu
Research Scholar, Panampilly Memorial Govt College
Chalakudy
E-mail: georgesabuapril10@gmail.com

Abstract

This paper evaluates the Credit Risk Management (CRM) frameworks of three major Indian Public Sector Banks (PSBs)—State Bank of India (SBI), Punjab National Bank (PNB), and Canara Bank—against the globally accepted 16 Principles for the Management of Credit Risk issued by the Basel Committee on Banking Supervision (BCBS). Utilizing a developed Compliance Scoring Index, the analysis confirms that all three PSBs have

 ISSN: 2582 - 2594

achieved near-total structural compliance, driven by the stringent regulatory environment set by the Reserve Bank of India (RBI). The study finds that while compliance is high, strategic execution varies: SBI excels in RAROC integration, PNB in data-warehousing for IRB transitions, and Canara Bank in rule-based remedial penalties.

1. Introduction

The policy of the Indian government aims to consolidate the public sector banking landscape to create global champions. However, this concentration of capital necessitates a robust Credit Risk Management (CRM) framework to prevent systemic shocks. Since banks primarily deal with public deposits, credit risk remains the leading cause of institutional failure. To mitigate these risks, the Reserve Bank of India (RBI, 2025) mandates strict adherence to the Basel Framework. This study examines the extent of compliance with these 16 Principles and how such adherence correlates with the recent stabilization of the Indian banking sector.

2. Statement of the Problem

While the Gross Non-Performing Assets (GNPA) of Indian PSBs saw a marked reduction from 9.11% in 2021 to 2.58% in 2025 (Ministry of Finance, 2021), the sustainability of this trend depends on institutionalized governance rather than periodic write-offs. There is a need to move from a “compliance-only” mindset to a “risk-performance” integrated model. This study investigates whether the leading PSBs are merely following the letter of the law or if they have embedded Basel principles into their core operational activities.

3. Research Methodology

This study employs a comparative descriptive design supplemented by quantitative performance indicators.

Data Sources: Annual reports (2024–2025), RBI Master Circulars, and Pillar 3 disclosures.

Compliance Scoring Index: To enhance analytical depth, each bank is assessed on a 5-point scale across the six Basel components (Environment, Granting Process, Monitoring, Controls, and Supervision) shown in Table 1

Table 1 Five Point Scale on Basel Components

Section	Focus	Principles
I. Environment	Governance & Strategy	P1-P3
II. Granting Process	Origination & Approval	P4-P7
III. Measurement/Monitoring	Measurement & Monitoring	P8-P12
IV. Controls	Independent Review & Remedial	P13-P15
V. Supervision	External Oversight	P16

Theoretical Framework: The study adopts the Agency Theory and Stakeholder Theory to explain the necessity of independent risk oversight in government-owned entities.

4. Conceptual Linkage: Basel Compliance and Bank Performance

A clear conceptual linkage exists between Basel compliance and financial stability. Regulatory Compliance leads to Credit Risk Mitigation (lower PD/LGD), which directly improves Bank Performance (Net Interest Margin and Capital Adequacy). By adhering to Principle 3 (Risk in all products), banks like SBI utilize RAROC to ensure that every loan granted contributes to shareholder value after accounting for the cost of risk.

5. Evaluation of Principles Compliance

Evaluation principles are categorised into five for drawing conclusions.

1. Environment

The three banks—State Bank of India (SBI), Punjab National Bank (PNB), and Canara Bank—are all Compliant with the initial governance principles for establishing a Credit Risk Environment (I. Governance). However, their strategies demonstrate varying levels of sophistication and focus, particularly in integrating risk into business decisions.

Principle 1: Board's Responsibility for Strategy

The State Bank of India and Punjab National Bank followed a more structured and modern approach through a clear Risk Appetite Frame work (RAF). SBI manages risks under its Enterprise Risk Management Policy, which includes a Board-approved RAF monitored by the Risk Management Committee of the Board (RMCB). PNB's Board sets the Credit Management and Risk Policy, and the RMC

ISSN: 2582 - 2594

ensures it stays within the defined risk limits. Canara Bank, on the other hand, emphasizes the Board's responsibility to form committees and respond quickly to early warning signals as part of its Corporate Governance Policy.

Principle 2: Senior Management's Responsibility for Implementation

This principle illustrates how the banks practically implement the governance strategy. PNB gives the clearest example by clearly defining its organizational structure, roles, and responsibilities. SBI focuses on using strong credit appraisal and risk management systems to ensure sound operations. Canara Bank shows its use of advanced methods by following Internal Ratings-Based (IRB) guidelines and meeting all statutory requirements.

Principle 3: Risk in all Products and Activities

This principle stands out as the most distinctive one because it shows how each bank integrates risk into its main business activities. SBI demonstrates the highest level of integration by using a customer -level RAROC (Risk- Adjusted Return on Capital) framework that directly links risk with profitability, pricing and capital allocation (SBI, 2025). PNB takes a forward-looking approach through its comprehensive digital lending policy, ensuring that new and emerging risks from digital channels are properly managed. Canara Bank mitigates concentration risk in products and activities by setting specific exposure ceilings for different sectors, such as real estate and NBFCs, although it is less proactive compared to SBI's approach.

Conclusion:

All three banks demonstrate strong compliance. However, SBI shows the highest maturity by integrating a Risk Appetite Framework (RAF) directly into business decisions.

- SBI: Uses a customer-level RAROC framework.
- PNB: Focuses on a comprehensive digital lending policy.
- Canara Bank: Emphasizes early warning signals (EWS).

II. Granting Process

Principle 4: Credit-Granting Criteria

All three banks operate within well-defined credit-granting criteria, but their approaches differ in depth and technological integration. SBI demonstrates the most structured and analytical approach. It conducts detailed research on 37 identified industries and uses internal Credit Risk Assessment Models and scorecards to evaluate borrower-wise risk. This ensures that lending decisions are directly linked to probability of default and sectoral outlooks. PNB relies on a comprehensive risk rating system that integrates both borrower-specific and industry-specific factors. This model serves as a single risk indicator to guide credit decisions, emphasizing risk profiling at the individual borrower level. Canara Bank applies the Canara Internal Rating Model (CIRM) and a Grid Methodology for large exposures. It directly connects risk assessment with loan pricing, increasing interest rates when credit quality deteriorates.

Principle 5: Credit Limits

The setting of credit limits is crucial to controlling exposure concentration. SBI partially complies here, as its report emphasizes sectoral exposure limits derived from industry analysis but does not explicitly mention single or connected counterparty exposure limits.

PNB exhibits strong compliance through the Credit Risk Management Committee (CRMC), which manages limits for counterparties, industries, and countries within the prudential framework approved by the Board. Canara Bank fully complies by defining quantitative limits for large exposures-10% for individual counterparties and up to 25% for groups - aligned with Tier 1 Capital norms

Principle 6: Approval Process

A sound approval process ensures accountability and control in credit decisions. SBI has implemented an advanced IT-driven system through its RLMS/ LLMS platforms, ensuring a structured, digital workflow for credit appraisals and approvals. PNB uses a hierarchical committee-based approval structure, where all proposals of senior levels (GM and above) are reviewed by the Credit Approval Committee (CAC), ensuring layered scrutiny and control.

Canara Bank maintains a clearly delegated approval structure based on exposure size and risk level, with decision-making authority distributed among different managerial levels (DM to GM). For MSMEs, an internal risk rating system ensures process uniformity.

Principle 7: Arm's-Length Lending

Maintaining independence in lending decisions safeguards against conflicts of interest. SBI enforces this principle through Group Risk Management policies that

ISSN: 2582 - 2594

ensure all intra-group exposures are on an arm's-length basis, backed by policy-level monitoring. PNB implies compliance through its governance framework, where the Audit Committee and Board oversight extend to related-party transactions, ensuring accountability. Canara Bank also ensures arm's-length principles through its Corporate Governance Policy, which mandates transparency, independent audit, and accountability mechanisms.

Conclusion

In terms of strategic efficiency under a sound credit-granting process, SBI demonstrates leadership through data-driven credit research, automation, and digital integration, aligning risk with business growth. PNB shows efficiency through a well-structured governance model, emphasizing institutional control and balanced risk distribution. Canara Bank exhibits operational strength with transparent, rule-based approval and exposure management systems that directly link credit pricing to risk. Overall, SBI reflects technological and analytical superiority, PNB represents robust governance efficiency, and Canara Bank shows practical procedural effectiveness. Collectively, these approaches highlight that all three banks are moving toward modern, risk-sensitive, and strategically aligned credit-granting processes, though SBI's integration of research and digital platforms makes its framework the most value-driven. Banks have shifted from subjective lending to model-based approvals. The industry-wide Capital to Risk-weighted Assets Ratio (CAR) remained healthy above 15% in 2025, suggesting that credit-granting criteria are sufficiently backed by capital buffers.

III. Measurement/Monitoring

Principle 8: Credit Administration

Credit administration ensures that loans are properly documented, monitored, and maintained throughout their life cycle. SBI manages this through its digital Loan Lifecycle Management Systems (LLMS/RLMS), which are connected to CIBIL, CIC, and RBI defaulters' lists. This integration enables continuous tracking of borrower data, compliance, and collateral information, showing a strong system-based control. PNB follows a comprehensive "Credit Risk Mitigation and Collateral Management Policy," which supports documentation, covenants, and collateral management. It also has a framework for handling problem loans, ensuring proper follow-up and risk mitigation. Canara Bank has a well-defined Collateral Management Policy, particularly for commercial real estate (CRE), where Loan-to-

Value ratios are monitored annually, and asset valuations are updated every three years.

Principle 9: Grading, Classifying, and Monitoring

This principle focuses on the timely identification and management of problem exposures.

SBI has a "Dynamic Review of Internal Rating" framework, which helps in early stress detection and triggers mitigation measures promptly. PNB uses a Preventive Monitoring System (PMS) that detects early warning signals. It also conducts quarterly reviews of its loan portfolio based on risk category, ensuring consistent asset quality evaluation. Canara Bank links credit rating deterioration directly to financial consequences. If a borrower's rating declines, the bank increases the rate of interest (0.5%–1.5%) or requires additional collateral (25%).

Principle 10: Internal Risk Rating System

An internal risk rating system supports accurate measurement and management of borrower risk. SBI employs several internal Credit Risk Assessment Models and scorecards, complemented by a dedicated ESG Rating Model, aligning credit risk with sustainability considerations. PNB uses a comprehensive risk rating system for accounts above ₹50 lakh and specialized scoring models for SME and retail advances. It also calculates Probability of Default (PD) for large and mid-corporate borrowers, ensuring quantitative precision. Canara Bank applies the Canara Internal Rating Model (CIRM) for medium exposures and uses Credit Information Reports for retail borrowers, mapping them to internal risk grades.

Principle 11: Information Systems and Measurement

Efficient risk measurement depends on strong information systems and accurate exposure aggregation. SBI provides quarterly dashboards for the top 18 industries and digitizes RAROC (Risk-Adjusted Return on Capital) calculations. It uses LLMS/RLMS as its main IT platform and applies advanced tools to measure PD, LGD, and EAD, offering an integrated data ecosystem(SBI, 2025). PNB focuses on implementing the Internal Ratings-Based (IRB) approach, aligning with Basel standards (PNB, 2024). Its risk rating system consolidates diverse risk indicators into a single measure, supporting exposure aggregation and concentration monitoring. Canara Bank has similar IRB-oriented policies, focusing on calculating PD, LGD, and EAD for advanced measurement. It manages Global Exposure Ceilings using aggregated sectoral data.

ISSN: 2582 - 2594

Principle 12: Market and Macroeconomic Factors / Stress Testing

This principle emphasizes forward-looking risk analysis through stress testing and macroeconomic assessment. SBI conducts stress tests twice a year, updating scenarios as per RBI guidelines and changes in macroeconomic variables. This ensures proactive portfolio management under varying market conditions. PNB applies advanced stress testing for liquidity and credit risk, guided by the CRMC, which refines models based on evolving market scenarios. It also assesses risks under both Pillar 1 and Pillar 2 of Basel norms.

Canara Bank incorporates stress testing mainly within its Basel compliance framework (Pillar 2). It reviews macroeconomic factors regularly and adjusts capital adequacy based on these stress results.

Conclusion

All three banks exhibit strong and compliant credit administration and monitoring systems, though their strategic emphasis varies. SBI leads in technological integration and advanced analytics, using digital platforms (LLMS/ RLMS), ESG-based ratings, and data-driven dashboards to achieve real-time oversight. PNB demonstrates institutional maturity with structured risk policies, early-warning systems, and model-based stress testing aligned with Basel norms. Canara Bank stands out for its disciplined, rule-based approach—linking rating changes directly to financial and collateral measures, ensuring transparency and accountability. Canara Bank Implements a unique penalty system, increasing ROI by 0.5%–1.5% upon rating deterioration. This provides an immediate quantitative correction to risk exposure. In summary, SBI represents innovation and data excellence, PNB shows policy-driven governance and risk coherence, and Canara Bank highlights practical efficiency and operational control. Together, they reflect a strong shift in Indian public sector banks toward modern, technology-enabled, and forward-looking credit risk management practices.

IV. Controls

Principle 13: Independent Assessment

Independent assessment ensures that credit risk evaluation and monitoring are conducted without business-line influence. SBI demonstrates a well-structured and independent governance framework. Its Integrated Risk Governance Structure separates risk measurement, monitoring, and control from business functions. The Risk Management Committee of the Board (RMCB) reviews risk regularly, while the Internal Audit operates independently under the Audit Committee of the Board (ACB). PNB also ensures independence by separating the risk rating and vetting process from credit appraisal. Its Risk Management Group functions independently from business operations, ensuring unbiased assessment of credit risk. Canara Bank maintains independence through its Head Office Risk Management Wing, which verifies and approves credit ratings and pricing decisions independently from sanctioning authorities.

Principle 14: Internal Controls and Compliance

This principle focuses on enforcing internal controls and promptly reporting exceptions to policies and limits. SBI enforces control through its Risk Focused Credit Audit (RFCA) and Early Review of Sanctions (ERS) mechanisms, which specifically monitor credit quality and compliance with regulatory norms. The audit function is mandated to evaluate internal process adherence and control effectiveness. PNB employs structured control systems, including Risk Description Charts (RDCs) and Risk & Control Self-Assessments (RCSAs), to identify inherent and residual risks. The Risk Management Committee (RMC) supervises adherence to the risk appetite and policy limits, ensuring compliance and early corrective actions. Canara Bank enforces internal controls through a policy-driven system of thresholds and penalties. For instance, near-prime or sub-prime exposures are capped by prescribed ceilings, and rating deterioration or collateral shortfall leads to penalty interest. These actions reflect tight control and accountability.

Principle 15: Remedial Action

Remedial action ensures that problem exposures are identified early and corrective steps are implemented promptly. SBI applies its “Dynamic Review of Internal Rating” framework, which enables early stress detection and activates mitigation mechanisms. This continuous review serves as the foundation for its remedial process. PNB uses its Preventive Monitoring System (PMS) to detect early warning signals, minimizing loan losses. Its risk governance framework also includes a dedicated “work-out system” for managing problem credits and recovery. Canara Bank employs a direct and immediate mechanism for remedial action. A downgrade in borrower rating automatically triggers higher interest (additional ROI) or mandatory collateral requirements, ensuring swift corrective response.

Conclusion

All three banks maintain strong independent control systems over credit risk,

ISSN: 2582 - 2594

though their approaches highlight different strategic strengths. SBI stands out for its integrated governance and multiple layers of independence—RMCB oversight, ACB-led internal audits, and risk monitoring embedded within digital systems. PNB emphasizes governance and process integrity, ensuring independence through clear functional separation, systematic risk assessments (RDCs/RCSAs), and robust preventive systems. Canara Bank reflects operational precision through rule-based controls, pre-set ceilings, and instant remedial triggers that ensure discipline and transparency. In summary, SBI represents institutional and structural efficiency, PNB reflects governance and process-driven efficiency, and Canara Bank demonstrates operational and control-based efficiency. Collectively, they illustrate the growing maturity of India's public sector banks in establishing independent, technology-supported, and action-oriented credit risk control frameworks.

V. The Role of Supervisors

Principle 16: Supervisory Oversight

Supervisory oversight ensures that banks maintain sound internal systems, comply with regulatory expectations, and remain transparent to supervisory authorities like the Reserve Bank of India (RBI). SBI fully aligns with RBI's supervisory framework. The bank complies with Basel III Capital Regulations, demonstrating robust capital management and reporting discipline (SBI, 2025). Its internal audit operates on a risk-based approach, consistent with RBI's Risk-Based Supervision (RBS) model. This reflects strong cooperation with regulators and an embedded culture of compliance and accountability. PNB also shows high compliance with supervisory expectations. It actively implements Basel III guidelines, regularly calculating capital charges and managing capital adequacy. The Credit Management and Risk Policy is specifically designed to align with both internal prudential norms and external regulatory mandates issued by the RBI (PNB, 2024). This ensures continuous supervisory alignment. Canara Bank demonstrates compliance through strict adherence to RBI's prudential limits and Internal Ratings-Based (IRB) Guidelines. Its Credit Risk Management (CRM) Policy enforces exposure ceilings, such as the 25% cap of Tier 1 capital for large exposures, which directly reflects supervisory discipline and adherence to regulatory benchmarks.

Conclusion

Under supervisory oversight, all three banks exhibit a mature compliance culture and robust alignment with RBI regulations. SBI leads in supervisory integration through its risk-based internal audits and proactive engagement with Basel III norms, showing operational excellence in regulatory compliance. PNB ensures consistency through a governance-driven policy framework that integrates RBI's expectations into its risk and credit management systems. Canara Bank demonstrates prudential efficiency by embedding RBI's exposure and capital rules into its CRM policy, ensuring sound regulatory discipline. In summary, SBI shows strategic regulatory alignment, PNB reflects policy coherence with supervisory standards, and Canara Bank ensures quantitative prudential efficiency. Together, they highlight the strong convergence of India's public sector banks with international supervisory practices under RBI's Basel III and RBS frameworks.

6. Overall Findings on Compliance and Strategic Divergence

The analysis of the leading Indian public sector banks—State Bank of India (SBI), Punjab National Bank (PNB), and Canara Bank—confirms a substantial degree of adherence to the 16 Principles for the Management of Credit Risk mandated by the Reserve Bank of India (RBI) under the Basel Framework (BCBS, 2000). This compliance reflects the successful efforts by the government and the RBI to stabilize the financial system, evidenced by the significant reduction in the Gross NPA ratio from 9.11% in 2021 to 2.58% in 2025 (Ministry of Finance, 2021). While all three banks meet fundamental regulatory standards, their implementation strategies show a distinct divergence. However, supervisory oversight (Principle 16) remains a relative weakness, with all three banks facing recent RBI penalties for compliance lapses (see Table 2). SBI stands out as the leader in technological integration and advanced analytics, consistently leveraging advanced risk measurement models and digital platforms to link risk directly to profitability and capital allocation (P3, P10, P11). This positions SBI's approach as strategically value-driven, though its supervisory compliance score (3/5) reflects regulatory penalties. In contrast, PNB excels in governance and process efficiency, ensuring robust institutional control through a clearly defined structure, early-warning systems like the Preventive Monitoring System (PMS), and strong policy alignment with supervisory standards (P2, P9). Finally, Canara Bank demonstrates operational precision by implementing stringent, rule-based controls, featuring transparent quantitative exposure limits (P5) and direct, automated remedial actions (P9, P15), thereby ensuring practical procedural effectiveness and prudential efficiency. Collectively, these findings illustrate the growing maturity of India's public sector banks in establishing technology-enabled, forward-looking, and independently controlled credit risk frameworks, while also highlighting the need for sustained supervisory compliance.

ISSN: 2582 - 2594

Table 2: Overall Findings and Comparative Scoring

Component	SBI	PNB	Canara Bank
I. Risk Environment (P1-P3)	4.5/5	4/5	4/5
II. Granting Process (P4-P7)	4/5	4.5/5	4/5
III. Monitoring & Measurement (P8-P12)	5/5	4/5	4.5/5
IV. Controls (P13-P15)	5/5	4/5	4.5/5
V. Supervisory Oversight (P16)	3/5	3.5/5	3.5/5
Overall Compliance Index	86%	80%	82%

7. Recommendations for Enhanced Credit Risk Management

To further optimize their credit risk management systems and drive value maximization, targeted recommendations are proposed based on the comparative analysis. Firstly, both PNB and Canara Bank should adopt leading practices from SBI by explicitly incorporating risk-adjusted performance metrics (such as RAROC) into their core product pricing, portfolio management, and business strategy (P3). This shift would move them beyond compliance and limit-based controls to an integrated approach where risk is an active parameter in maximizing shareholder value. Concurrently, these banks should deepen their digital integration (P11) by implementing advanced digital dashboards for real-time portfolio monitoring and automating the link between early warning signals and the remedial process, thereby improving operational responsiveness. Secondly, for SBI, while its sectoral analysis is robust, it must formalize and explicitly disclose compliance with single and connected counterparty exposure limits (P5) to ensure complete transparency regarding concentration risk. Thirdly, as a collective measure for all three institutions, the integration of stress test results (P12) must be formalized beyond a compliance exercise. The results should directly influence capital allocation decisions, the adjustment of risk appetite, and the setting of exposure limits in the subsequent planning period. Furthermore, all banks should expand the automation of their remedial systems (P15), implementing IT-driven triggers for a wider range of high-value exposures that mandate swift actions such as instant classification updates or required collateral increases upon a defined deterioration in borrower rating. Finally, given the recent RBI penalties imposed on all three banks, strengthening supervisory oversight mechanisms (Principle 16) is paramount. Banks should conduct internal audits specifically targeting areas of past regulatory non-compliance (e.g., customer protection, priority sector lending, and deposit operations) and establish independent compliance review committees with direct reporting to the Board.

References

Basel Committee on Banking Supervision (2000). Principles for the management of credit risk.

Bank for International Settlements. https://www.bis.org/publ/bcbs75.pdf.

Reserve Bank of India (2025). Master circular on Basel III capital regulations.

State Bank of India (2025). Annual Report 2024-25.

Punjab National Bank (2024). Risk Management Policy and Framework 2023-24.

Ministry of Finance, Government of India. (2021). Report on the performance of Public Sector Banks and non-performing assets.

ISSN: 2582 - 2594