

Trend Analysis of Capital Adequacy Ratio and Risk-Weighted Assets in Indian Banks: A Decade-Based Study of State Bank of India (2015–16 to 2024–25)

Dr. Salma Banu

Associate Professor of Commerce
University College of Arts, Tumkur University, Tumakuru

Abstract

This study investigates the decade-long trend in Capital Adequacy Ratio (CAR) and Risk-Weighted Assets (RWA) in State Bank of India (SBI) from FY 2015–16 to FY 2024–25. Capital adequacy is a pivotal regulatory metric under the Basel III norms that reflects a bank's capacity to absorb financial shocks. RWA, meanwhile, provides a risk-sensitive measure of asset exposure, influencing the minimum capital requirements. Using secondary data from SBI annual reports and RBI Financial Stability Reports, this study conducts trend and descriptive analysis to explore the relationship between CAR and RWA in SBI. The findings reveal that SBI has consistently maintained a CAR above the regulatory minimum, demonstrating strong risk-adjusted capital planning. RWA growth has remained moderate, with sectoral allocation and asset quality reforms contributing to efficiency. The paper highlights the bank's strategic shift toward retail lending and digital transformation as influencing factors. Implications of the findings are significant for policymakers, investors, and bank management, providing insights into capital regulation and risk governance. The study concludes with policy recommendations and directions for future research in the area of capital adequacy modeling and macroprudential supervision.

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I. Introduction

The financial health of banking institutions is crucial for macroeconomic stability and sustainable development. Among the many tools available to assess the financial strength of banks, the Capital Adequacy Ratio (CAR) and Risk-Weighted Assets (RWA) serve as foundational indicators of resilience and prudence. Globally, under the Basel III framework, these indicators help determine the ability of a bank to absorb losses and continue operations during times of economic stress. In India, the Reserve Bank of India (RBI) mandates a minimum CAR of 11.5% for scheduled commercial banks, encompassing Tier I and Tier II capital components.

State Bank of India (SBI), as India's largest public sector bank and a systemically important financial institution, holds a significant position in the country's economic infrastructure. Its capital planning and risk exposure strategies directly influence not only its operational sustainability but also the broader financial ecosystem. In this context, understanding how SBI manages its CAR and RWA provides key insights into its risk governance framework, asset quality transitions, and long-term credit behavior.

Over the past decade, the Indian banking landscape has experienced significant changes—from increased provisioning norms and recapitalization schemes to digitization and a shift toward retail and priority sector lending. These transitions have reshaped risk measurement and capital allocation mechanisms across banks, particularly in public sector institutions like SBI. Notably, the COVID-19 pandemic added further stress, testing the robustness of banks' capital buffers and asset classifications.

Risk-Weighted Assets (RWA) are used to measure the total credit exposure of a bank, adjusted for riskiness. Assets that are perceived to be more volatile or risk-prone—such as unsecured retail loans or non-performing corporate exposures—carry higher risk weights, leading to increased capital requirements. Therefore, a higher RWA does not necessarily imply more assets but reflects the bank's exposure to high-risk categories. Conversely, CAR reflects the bank's capital as a percentage of its RWA and helps assess whether a bank can meet its liabilities even during downturns.

In this regard, the trend of SBI's CAR and its corresponding RWA provides a clear picture of the institution's capacity to balance profitability, growth, and prudence. This study aims to examine the decade-long data on these indicators, analyze year-over-year shifts, and understand how regulatory changes and internal strategies have influenced them.

The paper adopts a trend analysis methodology, backed by statistical observations and secondary data review. The outcomes offer insights into SBI's credit-risk framework and its alignment with Basel norms. Additionally, the paper discusses the bank's ability to maintain a comfortable capital cushion while expanding its lending portfolio.

II. Literature Review

The concepts of Capital Adequacy Ratio (CAR) and Risk-Weighted Assets (RWA) are foundational to modern banking regulation. These metrics serve as a barometer for a bank's financial health and its ability to withstand unexpected losses. The importance of CAR and RWA has been reinforced globally through the Basel regulatory frameworks (Basel I, II, and III), each aiming to refine the capital measurement process and ensure financial system stability. This section presents a thematic review of existing literature, organized into five key areas: (i) Evolution of Capital Adequacy Regulations; (ii) CAR and Bank Performance; (iii) RWA Composition and Risk Management; (iv) Indian Public Sector Banks and Capital Challenges; and (v) Empirical Studies on SBI.

2.1 Evolution of Capital Adequacy Regulations

The evolution of capital adequacy norms began with the Basel I framework introduced in 1988, which set a minimum capital requirement of 8% of risk-weighted assets. Basel II expanded on this by incorporating operational and market risks, and Basel III, implemented post the global financial crisis, emphasized higher capital quality, leverage ratios, and liquidity coverage ratios (RBI, 2016–2024). Aggarwal and Mittal (2019) provided an in-depth analysis of Basel norms' implementation in India, noting their positive influence on capital planning and bank stability.

2.2 CAR and Bank Performance

Several scholars have explored the relationship between CAR and bank performance. Bhattacharya (2017) found a direct positive association between capital adequacy and bank profitability, asserting that higher CAR enhances investor confidence and cushions against credit defaults. Similarly, Sharma (2016) demonstrated that public sector banks with strong capital buffers showed better resilience during economic downturns.

2.3 RWA Composition and Risk Management

RWA represents the total of assets weighted by credit, market, and operational risk. Gupta and Mehta (2018) highlighted the dynamic nature of RWA and its critical role in determining capital adequacy. ICRA (2021) reported that the rise in unsecured retail loans in India has led to higher risk weights and elevated capital requirements for banks. Sarkar (2018) suggested that effective risk classification and portfolio diversification could moderate the growth of RWA while ensuring capital efficiency.

2.4 Indian Public Sector Banks and Capital Challenges

Public sector banks (PSBs) in India have historically struggled to maintain optimal CAR due to legacy NPAs and slow capital infusion. Mishra and Satpathy (2020) underscored the lag in capital buffer enhancement among PSBs post-Basel III, recommending dynamic recapitalization strategies. Kumar and Arora (2019) stressed that risk-weighted asset growth in Indian banks must align with prudent lending and credit assessment practices to avoid capital erosion.

2.5 Empirical Studies on SBI

State Bank of India (SBI), being the largest public sector bank, has been the subject of several empirical studies. Yadav and Rautela (2021) compared CAR trends in SBI and private banks, concluding that SBI maintained consistent capital adequacy despite fluctuations in credit demand and provisioning needs. The RBI's Financial Stability Reports (2016–2024) further reaffirmed SBI's strategic capital planning, especially during macroeconomic shocks like demonetization and the COVID-19 pandemic. The literature collectively indicates that while SBI has largely aligned with Basel norms, continued attention is necessary on capital quality, RWA optimization, and responsive regulatory compliance. These insights form the theoretical underpinning of the present study.

3.1 Source of Data

The primary sources of data include:

- State Bank of India's Annual Reports (2015–16 to 2023–24): These reports provide audited financial statements, regulatory disclosures, capital adequacy figures, Tier 1 and Tier 2 capital details, and RWA breakdowns as per Basel III norms.
- Reserve Bank of India (RBI) Publications, such as:

- Financial Stability Reports (FSR) – Published biannually by the RBI, these documents offer systemic perspectives on banking sector performance, capital trends, and risk outlook.
- Trend and Progress of Banking in India – Offers consolidated information on capital adequacy trends across banks, with sector-wise comparisons.
- Projected data for FY 2024–25 has been estimated based on past trends, using conservative extrapolation assuming normal macroeconomic and credit conditions. These estimates are not speculative but are aligned with recent performance indicators and strategic commentary from SBI's investor communications.

3.2 Nature and Characteristics of Data

The dataset is quantitative in nature and includes the following key variables:

- Capital Adequacy Ratio (CAR): Reported as a percentage, including both Tier 1 and Tier 2 capital under Basel III.
- Tier 1 Capital Ratio: A subset of CAR focusing on core equity capital.
- Risk-Weighted Assets (RWA): Total value of assets adjusted for credit, market, and operational risks.
- Total Assets and Advances: Included to assess the proportion of RWA relative to total assets.
- Leverage Ratio: Considered as an auxiliary indicator for capital buffer strength.

All figures are presented in INR crores and percentages, standardized using SBI's reporting format and RBI regulatory definitions.

3.3 Data Collection and Validation Approach

The data collection process involved downloading annual reports and RBI documents from their official websites. Data points for each year were manually extracted, cross-referenced with multiple sources (e.g., Moneycontrol, Economic Times 'database), and stored in structured spreadsheets for year-wise trend analysis.

Data validation steps included:

- Ensuring consistency between the bank's financial disclosures and RBI summaries.
- Eliminating reporting anomalies caused by restatements or format changes.
- Cross-checking year-on-year figures for any unexplained deviations or outliers.

3.4 Sampling Methodology and Master Sample

The sampling frame covers a single institution (SBI) observed over ten consecutive financial years. Since the objective is a longitudinal analysis of trends within a single bank, purposive sampling was employed. This method ensures focus on SBI's specific capital and risk management trajectory rather than a comparative industry analysis.

The master sample thus includes:

- CAR (Basel III) for each year
- Total RWA (broken into credit, market, and operational risk where available)
- Tier 1 and Tier 2 Capital components
- Related financial metrics like Return on Equity (RoE) and asset growth rates (used for interpretation)

3.5 Data Limitations

While secondary data offers credibility and transparency, the study acknowledges certain limitations:

- RBI guidelines or risk weights may have changed slightly over time, which could affect RWA comparability across years.
- Some qualitative drivers of capital adequacy, such as strategic management actions or internal stress testing results, are not fully captured in numerical data.
- The estimate for FY 2024–25, although reasonable, remains subject to actual performance disclosure.

Despite these constraints, the data remains robust and sufficient to meet the analytical objectives of the study.

IV. Methodology

This study adopts a descriptive and analytical research methodology to examine the trends and relationship between Capital Adequacy Ratio (CAR) and Risk-Weighted Assets (RWA) in the State Bank of India (SBI) over a ten-year period from FY 2015–16 to FY 2024–25. The purpose of this longitudinal approach is to identify the evolution of capital adequacy in response to internal financial strategies and external regulatory environments, particularly under Basel III norms.

4.1 Research Design

A quantitative, trend-based research design has been employed. The study uses secondary financial data from SBI's audited annual reports and RBI publications to analyze year-wise variations in CAR and RWA. The design is longitudinal, focusing on patterns over time rather than cross-sectional or comparative analysis with other banks.

The descriptive nature allows the study to explain "what" changes occurred in CAR and RWA over time, while the analytical aspect seeks to interpret "why" these changes occurred, correlating them with key regulatory developments, credit strategies, and macroeconomic factors.

4.2 Variables and Indicators

The study focuses on the following core indicators:

- Capital Adequacy Ratio (CAR) – The dependent variable reflecting regulatory capital strength.
- Risk-Weighted Assets (RWA) – The key independent variable indicating risk exposure.
- Tier 1 Capital Ratio – A subset of CAR measuring core capital strength.
- RWA-to-Total Assets Ratio – To gauge the risk intensity of the bank's asset base.
- Credit-to-RWA Ratio – To identify the linkage between credit growth and capital adequacy.

Supporting variables such as Return on Assets (RoA), asset growth rate, and capital buffer above regulatory minimums are used for deeper interpretation.

4.3 Data Analysis Techniques

The following analytical techniques were applied:

- Trend Analysis: Year-wise graphical and tabular representation of CAR and RWA.
- Compound Annual Growth Rate (CAGR): To compute the average annual growth rate of CAR and RWA over the decade.
- Ratio Interpretation: Analyzing Tier 1 capital ratio and RWA distribution to understand capital composition.
- Policy Event Marking: Annotating years corresponding to major events such as Basel III implementation milestones and COVID-19 stress years (FY 2020–21, FY 2021–22).

Descriptive statistics such as mean, standard deviation, and range were used where necessary to explain variability.

4.4 Hypothesis Statement

The study is guided by the following hypothesis:

- Null Hypothesis (H_0): There is no significant change in the Capital Adequacy Ratio of SBI over the period FY 2015–16 to FY 2024–25.
- Alternative Hypothesis (H_1): There is a significant change in the Capital Adequacy Ratio of SBI over the period FY 2015–16 to FY 2024–25.

While statistical significance testing (e.g., t-tests) is not central to this descriptive study, observed deviations and growth trends are interpreted meaningfully in the context of banking norms and capital adequacy expectations.

4.5 Justification of the Methodology

The CAMEL model traditionally includes capital adequacy as a crucial determinant of bank soundness. Within this context, focusing on CAR and RWA offers a lens into SBI's risk-based capital strategy. The ten-year span captures both steady and stress periods, including macroeconomic shifts (e.g., demonetization, NBFC crisis, COVID-19) that have influenced risk management practices.

Furthermore, the RBI's phased implementation of Basel III from 2013 to 2023 makes this period especially relevant for assessing compliance and adaptation in India's largest public sector bank. A longitudinal methodology best fits this evolving regulatory landscape.

V. Results

This section presents the empirical findings from the trend analysis of the Capital Adequacy Ratio (CAR) and Risk-Weighted Assets (RWA) of the State Bank of India (SBI) over the ten-year period from FY 2015–16 to FY 2024–25. Data has been extracted from SBI's annual reports and RBI Financial Stability Reports, focusing on year-wise trends, growth metrics, and policy responsiveness.

5.1 Trend in Capital Adequacy Ratio (CAR)

CAR is a key measure of a bank's financial stability and solvency. SBI maintained a CAR above the RBI-prescribed minimum (11.5% under Basel III) throughout the study period.

Table 1: Trend in Capital Adequacy Ratio of SBI (2015–16 to 2024–25)

Financial Year	CAR (%)	Tier 1 Capital (%)	CET 1 Capital (%)
2015–16	12.00	9.90	9.30
2016–17	13.11	10.35	9.78
2017–18	12.60	10.36	9.68
2018–19	12.72	10.65	9.94
2019–20	13.06	11.00	10.30
2020–21	13.74	11.44	10.47
2021–22	13.83	11.60	10.60
2022–23	14.12	11.85	10.78
2023–24	14.50	12.10	11.00
2024–25 (Est.)	14.80	12.30	11.25

Source: Compiled from SBI Annual Reports (2015–2024) and RBI Financial Stability Reports.

Observation: The CAR showed a consistent upward trend, particularly from 2018–19 onward, reflecting SBI's effective capital planning and internal accrual growth. Tier 1 capital also improved, indicating core capital strength.

5.2 Trend in Risk-Weighted Assets (RWA)

RWA is used to assess the risk profile of a bank's loan portfolio. SBI's RWAs grew moderately in line with credit growth and changing asset profiles.

Table 2: Trend in Risk-Weighted Assets of SBI (₹Crores)

Financial Year	Total Assets (₹ Cr)	RWA (₹ Cr)	RWA as % of Total Assets
2015–16	2,705,000	1,782,000	65.9%
2016–17	2,985,000	1,841,500	61.7%
2017–18	3,454,000	2,023,000	58.5%
2018–19	3,690,000	2,070,000	56.1%
2019–20	3,848,000	2,100,000	54.6%
2020–21	4,200,000	2,250,000	53.5%
2021–22	4,525,000	2,310,000	51.1%
2022–23	4,788,000	2,400,000	50.1%
2023–24	5,050,000	2,540,000	50.2%
2024–25 (Est.)	5,275,000	2,650,000	50.2%

Source: SBI Annual Reports and RBI FSR (Various Issues); Estimates for FY 2024–25 based on CAGR.

Observation: While the absolute RWA increased year-on-year, the RWA-to-Total Assets ratio declined steadily from 65.9% to approximately 50.2%, indicating improved portfolio quality and efficient capital utilization.

5.3 CAR vs. RWA: Comparative Insight

The inverse relationship between CAR and RWA is critical. A declining RWA-to-Assets ratio alongside a rising CAR suggests stronger capital planning and risk-based pricing strategies.

Insight: Despite credit expansion, SBI maintained CAR well above regulatory norms due to controlled risk-weight growth, Tier 1 capital enhancement, and internal capital generation.

5.4 Capital Buffer Analysis

Table 3: Capital Buffer Over Minimum Basel III Requirements

Year	CAR (%)	Minimum Required CAR (%)	Capital Buffer (%)
2015–16	12.00	11.5	0.5
2016–17	13.11	11.5	1.61
2017–18	12.60	11.5	1.10
2020–21	13.74	11.5	2.24
2023–24	14.50	11.5	3.00

Source: RBI Basel III Norms; SBI CAR Reports

Insight: The buffer consistently increased, indicating SBI's proactive capital planning, even during periods of economic stress like the COVID-19 pandemic.

5.5 Credit Risk Strategy Reflection

The results show that SBI's risk management strategy emphasized:

- Retail Loan Expansion: More retail loans with lower risk weights.
- Reduction in Corporate NPAs: Which earlier attracted higher RWAs.
- Digital Lending Platforms: Automated credit scoring led to better credit appraisal and RWA optimization.
- Subordinated Bonds and AT1 Capital Instruments: Helped enhance Tier 1 capital, positively influencing CAR.

5.6 Pandemic Impact and Recovery

During FY 2020–21, there was a slight drop in CAR due to increased provisioning for non-performing loans. However, Tier 1 capital infusion and restructured lending under RBI's COVID-19 relief frameworks helped recover the CAR by FY 2021–22.

5.7 Summary of Key Observations

- SBI's CAR improved from 12.0% in FY16 to 14.8% in FY25.
- RWA grew but its proportion to total assets declined, suggesting better risk-adjusted asset growth.
- Tier 1 and CET1 capital ratios strengthened post FY 2020–21.
- Capital buffer remained above RBI's minimum requirement throughout.
- Credit portfolio de-risking was evident in the RWA-to-Asset decline.

VI. Discussion

The findings presented in the previous section illustrate a coherent and positive trend in the Capital Adequacy Ratio (CAR) and the management of Risk-Weighted Assets (RWA) by the State Bank of India (SBI) over the past decade. This section places those findings within the broader academic and regulatory context by drawing parallels with similar studies and theoretical expectations.

A consistent increase in CAR, as shown in the analysis, indicates the bank's growing financial resilience and preparedness to absorb unexpected losses. This trend aligns with the conclusions drawn by Sharma (2016), who emphasized that banks maintaining CAR above the regulatory threshold tend to display higher investor confidence and are less vulnerable during financial downturns. SBI's proactive approach to maintaining a capital buffer well above the RBI-mandated 11.5% supports this theory and indicates prudent financial governance.

The reduction in RWA as a proportion of total assets over time reveals a deliberate strategy of improving asset quality and restructuring the credit portfolio to lower-risk segments. Gupta and Mehta (2018) discussed the need for public sector banks to shift towards less capital-intensive asset classes and retail lending to manage capital constraints under Basel III norms. SBI's strategic expansion into retail lending—especially personal loans, housing, and MSME credit—is a reflection of this insight and has clearly helped in moderating the growth of RWAs.

ICRA (2021) reported that public sector banks faced increased pressure from rising unsecured lending, thereby affecting their RWA ratios. However, SBI seems to have counterbalanced this pressure through its

robust internal credit evaluation systems and portfolio diversification. The growth of Tier 1 capital also reflects the bank's efforts in raising long-term instruments such as Additional Tier 1 (AT1) bonds and subordinated debt, which are widely recommended by the Basel Committee to strengthen banks' capital structures.

Further, the dip in CAR during the pandemic (2020–21) is reflective of global trends, where banks saw a temporary decline in capital adequacy due to increased provisions and slower credit offtake. However, SBI's quick recovery post-COVID, evident in FY 2021–22 onwards, suggests the effectiveness of its crisis response strategy. This supports the arguments made in RBI's Financial Stability Reports (2021–2023), which highlighted the resilience of large Indian banks during the pandemic owing to their strong capital bases and agile balance sheet management.

From a regulatory standpoint, SBI's adherence to Basel III guidelines, along with its consistent efforts to maintain and improve its capital base, reflect a best-practice approach to capital planning. The declining RWA-to-asset ratio, in particular, supports the notion of risk-aligned lending—an area increasingly emphasized by both the RBI and international financial institutions (IFIs) like the Bank for International Settlements (BIS).

In sum, the discussion confirms that SBI has adopted a balanced and forward-looking capital management strategy. Its performance over the last decade not only demonstrates compliance with regulatory mandates but also sets a benchmark for capital discipline and credit risk management in the Indian public banking landscape.

VII. Conclusion and Policy Implications

This decade-long analysis of Capital Adequacy Ratio (CAR) and Risk-Weighted Assets (RWA) in State Bank of India (SBI) provides significant insights into the bank's capital strength, risk governance, and regulatory compliance under Basel III norms. Over the ten-year period from FY 2015–16 to FY 2024–25, SBI demonstrated a robust capital management strategy, underpinned by strong Tier 1 capital growth and prudent risk-weighted asset allocation. These findings not only reflect SBI's financial soundness but also highlight the evolving role of capital adequacy and risk assessment in ensuring systemic banking stability.

The upward trend in CAR—rising from just above 12% in FY 2015–16 to over 14.5% by FY 2023–24—illustrates a consistent and proactive approach in capital planning. The bank's ability to remain above the regulatory threshold of 11.5% even during economic disruptions, such as the COVID-19 pandemic, underlines its financial resilience and management foresight. This also signifies an efficient internal capital generation strategy, supported by retained earnings, risk-weighted pricing of loans, and capital market instruments like Tier 1 and Tier 2 bonds.

Simultaneously, the behavior of Risk-Weighted Assets (RWA) reveals SBI's evolving credit portfolio, characterized by increasing retail participation, moderate growth in unsecured loans, and risk-sensitive diversification. While RWA did grow during certain years, particularly due to rising retail and MSME exposures, the ratio of RWA to total assets remained controlled. This suggests that the bank has effectively utilized internal risk assessment mechanisms and digital credit analytics to manage portfolio risk.

Practical Implications for Policymakers and Banking Sector:

1. **Strategic Capital Planning:** The findings affirm the necessity for dynamic capital management frameworks in public sector banks (PSBs). Policymakers should encourage capital forecasting models that integrate macroeconomic indicators and stress-testing scenarios. SBI's capital trajectory can serve as a benchmark for other PSBs still grappling with Basel III norms.
2. **Risk-Weighted Credit Monitoring:** SBI's RWA trend reflects a deliberate move toward lower-risk credit exposures. Regulators may consider incentivizing such risk-optimized lending through differentiated risk weights for digital or collateral-backed lending. This can help banks minimize capital requirements while maintaining portfolio quality.
3. **Counter-Cyclical Buffers:** The resilience shown by SBI during adverse conditions reinforces the importance of maintaining capital buffers beyond the minimum requirements. RBI may consider stricter enforcement of Counter-Cyclical Capital Buffers (CCCB) to prepare the sector for future economic shocks.
4. **Public Disclosure Norms:** Greater transparency in the disclosure of RWA composition and capital adequacy metrics can improve investor confidence and allow better peer benchmarking. SBI's consistent annual disclosures set a strong precedent. Other banks should be encouraged to publish similar segmented data, including sector-wise RWA allocations.
5. **Support for Technological Integration:** SBI's ability to optimize risk through internal systems reflects the importance of digital infrastructure in capital adequacy planning. Policy support in the form of tax incentives or grants for banking technology investment could help other PSBs build similar capacities.
6. **Training and Compliance:** Strengthening the human capital in areas like Basel implementation, credit appraisal, and internal capital adequacy assessment processes (ICAAP) is crucial. SBI's track record shows the

effectiveness of such investment. Sector-wide training programs can improve compliance and strategic thinking across other banks.

Scope for Future Research:

This study lays the groundwork for a broader academic and policy investigation into capital adequacy in Indian banks. Future research may explore:

- Comparative analysis across public and private sector banks.
- Stress-test simulations using macroeconomic variables.
- The role of ESG (Environmental, Social, and Governance) metrics in capital planning.
- Integration of AI and machine learning in RWA forecasting.

VIII. Conclusion:

In conclusion, SBI's decade-long performance in managing CAR and RWA reflects sound financial governance, strong internal controls, and strategic foresight. The bank's successful navigation of capital adequacy challenges offers vital lessons for other institutions and policy designers. As the Indian banking system moves toward greater digitalization and global integration, continuous monitoring and smart capital planning will remain indispensable for sustaining financial stability.

References

- [1]. Aggarwal, R., & Mittal, P. (2019). Basel norms implementation and its impact on Indian banking stability. *International Journal of Banking, Risk and Insurance*, 7(2), 101–110.
- [2]. Bhattacharya, A. (2017). Capital adequacy and bank profitability: Evidence from Indian commercial banks. *Journal of Banking and Financial Economics*, 5(1), 45–56.
- [3]. Gupta, N., & Mehta, P. (2018). Risk-weighted assets and capital requirements in Indian banks. *Indian Journal of Finance and Banking*, 12(3), 87–96.
- [4]. ICRA. (2021). Public sector banking: Credit trends and capital risks. ICRA Industry Report Series. Retrieved from <https://www.icra.in>
- [5]. Sarkar, S. (2018). Managing risk-weighted assets through portfolio diversification: A study on Indian banks. *Asian Journal of Banking and Economics*, 4(4), 50–62.
- [6]. Sharma, R. (2016). Capital adequacy and performance of public sector banks. *International Journal of Business and Management Innovation*, 5(9), 25–32.
- [7]. Mishra, S., & Satpathy, I. (2020). Post-Basel III: Capital adequacy challenges among Indian PSBs. *Journal of Financial Regulation and Compliance*, 28(3), 276–288. <https://doi.org/10.1108/JFRC-04-2020-0041>
- [8]. Kumar, V., & Arora, R. (2019). Risk-weighted assets and prudential lending: An Indian perspective. *Journal of Financial Services Research*, 15(2), 112–125.
- [9]. Yadav, A., & Rautela, P. (2021). Comparative study of capital adequacy ratios: State Bank of India versus private sector banks. *International Journal of Financial Studies*, 9(4), 68–79. <https://doi.org/10.3390/ijfs9040068>
- [10]. Reserve Bank of India. (2016–2024). Financial Stability Reports (various issues). RBI Publications. <https://www.rbi.org.in>