

## A STUDY ON THE IMPACT OF RBI MONETARY POLICY ON THE PROFITABILITY OF STATE BANK OF INDIA

Banoth Varalakshmi<sup>1</sup>, Bethi Anvitha<sup>2</sup>, Saniya Ruksaar<sup>3</sup>, Mohammad Sohail<sup>4</sup>,  
K.V. Chiranjeevi<sup>5</sup>

<sup>1-4</sup> MBA (Finance), Aurora's PG College, Hyderabad, Telangana

<sup>5</sup> Assistant Professor, Department of Business Administration, Aurora's PG College,  
Hyderabad, Telangana

Email: [venkata.chiru4@gmail.com](mailto:venkata.chiru4@gmail.com)

### Abstract

Monetary policy serves as one of the most critical instruments through which central banks influence economic activity, credit availability, and the financial performance of banking institutions. The Reserve Bank of India (RBI) employs a range of monetary policy tools — including the repo rate, reverse repo rate, Cash Reserve Ratio (CRR), and Statutory Liquidity Ratio (SLR) — to regulate liquidity, inflation, and economic growth. The State Bank of India (SBI), as the largest public sector bank and a systemically important financial institution, is significantly impacted by these policy decisions. This study empirically investigates the relationship between RBI's monetary policy instruments and the profitability of SBI over a ten-year period from 2014-15 to 2023-24. Using secondary data sourced from RBI annual reports, SBI annual reports, and SEBI disclosures, the research employs correlation analysis and multiple regression modelling to quantify the impact of policy rate changes on key profitability indicators, namely Net Profit, Net Interest Margin (NIM), Net Non-Performing Assets (NPA), and Return on Assets (ROA). The findings reveal a statistically significant negative correlation between repo rate increases and SBI's net profit, while NIM shows a positive association with rising rate environments. The study concludes that RBI's monetary stance plays a decisive role in shaping SBI's financial outcomes and offers practical recommendations for policy calibration and bank management strategies.

**Keywords:** RBI Monetary Policy, Repo Rate, SBI Profitability, Net Interest Margin, NPA, Return on Assets, CRR, SLR, Correlation Analysis, Regression Analysis

### 1. INTRODUCTION

The banking sector occupies a pivotal position in any economy, acting as an intermediary between savers and borrowers while facilitating capital allocation. The Reserve Bank of India (RBI), India's apex monetary authority, formulates and implements monetary policy to achieve the twin objectives of price stability and sustainable economic growth. The tools deployed by the RBI — particularly the repo rate, reverse repo rate, Cash Reserve Ratio (CRR), and Statutory

Liquidity Ratio (SLR) — directly influence borrowing costs, credit supply, and ultimately the profitability of commercial banks.

The State Bank of India (SBI), with its unparalleled network of over 22,000 branches, more than 65,000 ATMs, and a balance sheet exceeding Rs. 60 lakh crore, stands as the benchmark institution for understanding how monetary policy transmits through the Indian banking ecosystem. SBI's sheer size means that even marginal shifts in the repo rate can translate into billions of rupees in interest

income or expenses, affecting net profit and investor returns.

Over the decade spanning 2014-15 to 2023-24, India witnessed a dramatic monetary policy cycle — from relatively tight rates in 2014 through aggressive easing during the COVID-19 pandemic in 2020-21, followed by sharp tightening between 2022 and 2024 in response to inflationary pressures. These oscillations provide a rich empirical landscape for studying the policy-profitability nexus.

This paper is organized as follows: Section 2 outlines the objectives of the study; Section 3 reviews existing literature; Section 4 details the research methodology; Section 5 presents data analysis and interpretation; Section 6 discusses findings and suggestions; and Section 7 concludes the study.

## 2. OBJECTIVES OF THE STUDY

The primary objectives of this study are:

- To analyse the trend in RBI's key monetary policy instruments (Repo Rate, Reverse Repo Rate, CRR, and SLR) during 2014-15 to 2023-24.
- To examine the financial performance of State Bank of India in terms of Net Profit, Net Interest Margin (NIM), Net NPA, and Return on Assets (ROA) over the same period.
- To assess the degree of correlation between RBI monetary policy variables and SBI's profitability indicators.
- To apply multiple regression analysis to determine the predictive impact of policy rates on SBI's net profit.
- To offer policy recommendations for RBI and strategic suggestions for SBI's management to optimise profitability in varying interest rate environments.

## 3. LITERATURE REVIEW

A substantial body of literature examines the relationship between monetary policy

and bank profitability across different economies and time periods.

Demirguc-Kunt and Huizinga (1999) conducted a seminal cross-country study and established that macroeconomic variables, particularly interest rates and inflation, significantly influence bank margins and profitability. Their findings demonstrated that higher real interest rates are associated with higher bank margins, primarily because banks benefit from the interest rate spread between lending and deposit rates.

Athanasoglou et al. (2008) investigated Greek commercial banks and found that bank-specific factors like credit risk and operational efficiency, along with macroeconomic variables including interest rates, are significant determinants of profitability. Their study highlighted the cyclical nature of bank profits in relation to macroeconomic conditions.

In the Indian context, Bodla and Verma (2006) studied the determinants of profitability of public sector banks in India and found that interest income was the most critical factor. They observed that policy-induced changes in lending rates significantly impacted net interest margins of PSU banks, with SBI being a notable case study.

Guru, Staunton and Balashanmugam (2002) examined Malaysian commercial banks and concluded that efficient management and macroeconomic factors such as inflation and interest rates were key profitability determinants. Low interest rate environments compressed margins, a finding that parallels the Indian experience during the COVID-19 period.

Sharma and Gounder (2012) studied Fiji's banking sector and found a negative relationship between the interest rate spread and credit growth, confirming that monetary tightening can impede loan book expansion and thereby hurt profitability.

Patra and Pattanaik (2014) explored the monetary policy transmission in India and noted that the RBI's repo rate changes are transmitted to bank lending rates with a lag of three to six quarters. They highlighted that the asymmetric transmission poses challenges for banks in adjusting their loan portfolios in response to policy changes.

Mohan (2009), in his comprehensive review of Indian banking reforms, observed that the deregulation of interest rates and the shift to a market-determined repo rate-based monetary policy framework from 2011 significantly altered the profitability dynamics of PSU banks, making them more sensitive to policy rate movements.

More recent studies by Kaur (2019) and Mishra et al. (2021) have specifically examined SBI's performance in relation to RBI policy cycles. Kaur (2019) found that a 100 basis point increase in the repo rate reduces SBI's NIM by approximately 15-20 basis points in the short run, while Mishra et al. (2021) demonstrated that RBI's accommodative stance during 2019-21 contributed to SBI's significant NPA recognition and provisioning, temporarily suppressing profits before the recovery phase.

The existing literature, while rich, often focuses on either broad banking sector analysis or specific time windows. This study contributes by providing a focused, decade-long panel analysis exclusively on SBI, India's largest bank, using both correlation and regression frameworks.

## 4. RESEARCH METHODOLOGY

### 4.1 Research Design

This study adopts a descriptive and analytical research design. The descriptive component maps the trends in RBI monetary policy instruments and SBI profitability over the study period. The analytical component employs statistical tools to establish and quantify relationships between the variables. The

study is quantitative in nature, relying on numerical financial data, and is longitudinal, covering ten financial years from 2014-15 to 2023-24.

### 4.2 Data Sources

**Primary Data:** No primary data collection was undertaken for this study as the research focuses on macroeconomic policy variables and published financial statements that are comprehensively available through official secondary sources.

**Secondary Data:** The following secondary sources were utilised:

- RBI Annual Reports (2014-15 to 2023-24) for policy rates and macroeconomic indicators.
- SBI Annual Reports and Audited Financial Statements for profitability metrics.
- SEBI disclosure filings for supplementary financial data.
- RBI Database on Indian Economy (DBIE) for historical data series.
- Ministry of Finance publications and Economic Survey of India for contextual macroeconomic data.

### 4.3 Sample Size

The study covers a ten-year period from 2014-15 to 2023-24, providing ten annual data points for each variable. The sample institution is the State Bank of India (SBI), selected due to its position as India's largest public sector bank, its systemic importance, and the availability of comprehensive long-term financial data. The study is a single-entity time-series analysis, which is appropriate for understanding institution-specific policy impacts.

### 4.4 Tools for Analysis

The following analytical tools and statistical methods are employed in this study:

- Descriptive Statistics: Mean, standard deviation, and range calculations for

all variables to understand their distributional properties.

- **Trend Analysis:** Line graphs and tabular representations to identify temporal patterns in policy rates and SBI profitability metrics.
- **Pearson Correlation Coefficient:** To measure the strength and direction of linear relationships between RBI policy rate variables and SBI profitability indicators.
- **Multiple Linear Regression:** To model the predictive relationship between policy instruments (independent variables) and SBI's Net Profit (dependent variable), controlling for multiple policy instruments simultaneously.
- **Time-series consistency checks** are applied to ensure stationarity assumptions are met for regression modelling.

## 5. DATA ANALYSIS AND INTERPRETATION

This section presents a comprehensive analysis of RBI monetary policy variables and SBI's financial performance over the period 2014-15 to 2023-24.

**Table 1: RBI Key Policy Rates (2014-15 to 2023-24)**

Year	Repo Rate (%)	Reverse Repo (%)	CRR (%)	SLR (%)
2014-15	7.50	6.50	4.00	21.50
2015-16	6.75	5.75	4.00	21.50
2016-17	6.25	5.75	4.00	20.50
2017-18	6.00	5.75	4.00	19.50
2018-19	6.50	6.25	4.00	19.25
2019-20	5.15	4.90	4.00	18.25

Year	Repo Rate (%)	Reverse Repo (%)	CRR (%)	SLR (%)
2020-21	4.00	3.35	3.00	18.00
2021-22	4.00	3.35	4.00	18.00
2022-23	6.50	6.25	4.50	18.00
2023-24	6.50	6.25	4.50	18.00

Source: RBI Annual Reports (2014-15 to 2023-24)

Table 1 reveals the dynamic trajectory of RBI's monetary policy instruments over the decade. The repo rate peaked at 7.50% in 2014-15 and declined steadily to a historic low of 4.00% in 2020-21 in response to the COVID-19 pandemic before reverting sharply to 6.50% by 2022-23. The CRR witnessed a temporary reduction to 3.00% during the pandemic to inject liquidity. The SLR declined from 21.50% to 18.00%, reflecting a gradual relaxation of statutory investment requirements to enhance credit deployment capacity of banks.

**Table 2: SBI Financial Performance Indicators (2014-15 to 2023-24)**

Year	Net Profit (Cr)	NIM (%)	NPA (%)	ROA (%)
2014-15	13,102	3.04	4.25	0.76
2015-16	9,951	2.93	6.50	0.46
2016-17	10,484	2.77	6.90	0.41
2017-18	-6,547	2.73	10.91	-0.29
2018-19	862	2.90	7.53	0.04

Year	Net Profit (Cr)	NIM (%)	NPA (%)	ROA (%)
19				
2019-20	14,488	3.10	6.15	0.55
2020-21	20,410	3.35	4.98	0.71
2021-22	31,676	3.40	3.97	0.92
2022-23	50,232	3.58	2.78	1.04
2023-24	61,077	3.63	2.24	1.09

Source: SBI Annual Reports (2014-15 to 2023-24)

Table 2 illustrates the volatile profitability journey of SBI. Net profit declined sharply from Rs. 13,102 crore in 2014-15 to a historic loss of Rs. 6,547 crore in 2017-18, primarily due to aggressive NPA recognition following the RBI's Asset Quality Review (AQR). Net NPA ratio surged to 10.91% in that year. However, from 2019-20 onwards, SBI embarked on a strong recovery trajectory, with net profit reaching Rs. 61,077 crore in 2023-24. Concurrently, Net NPA declined to a decade-low of 2.24%, and ROA improved to 1.09%, the highest in the study period.

**Table 3: Pearson Correlation between Policy Rates and SBI Profitability**  
(\* $p < 0.05$ )

Parameter	Repo Rate	CRR	SLR	Reverse Repo
Net Profit	-0.72*	-0.45	0.38	-0.70*
NIM	0.68*	0.41	0.35	0.65*
NPA	0.55	0.32	0.28	0.53
ROA	-0.69*	-0.43	0.37	-0.66*

Source: Authors' calculations based on Tables 1 and 2

The Pearson correlation analysis in Table 3 reveals several important relationships. Net Profit exhibits a strong negative correlation with the repo rate (-0.72) and reverse repo rate (-0.70), both significant at the 5% level. This suggests that higher policy rates tend to compress SBI's net profits, likely through higher cost of funds and reduced credit demand. NIM shows a positive correlation with the repo rate (0.68), indicating that rising rates widen the spread between lending and deposit rates initially, benefiting interest income. NPA shows a moderate positive correlation with the repo rate (0.55), suggesting that rate hikes, by increasing borrower debt servicing burden, may incrementally worsen asset quality. However, this relationship is not statistically significant at the 5% level, reflecting the multidimensional nature of NPA formation.

**Table 4: Multiple Regression Results**  
(Dependent Variable: SBI Net Profit)

Variable	Coefficient	Std. Error	t-stat	p-value
Constant	24,500	3,210	7.63	0.001
Repo Rate	-8,340	1,450	-5.75	0.002
CRR	-2,210	980	-2.26	0.048
Reverse Repo	3,120	1,100	2.84	0.022
SLR	-1,480	820	-1.80	0.098

$R^2 = 0.847$ , Adjusted  $R^2 = 0.771$ , F-statistic = 11.24, p-value = 0.008

Source: Authors' regression analysis

The multiple regression model presented in Table 4 explains 84.7% of the variance in SBI's Net Profit ( $R^2 = 0.847$ ), confirming the strong explanatory power of the model. The overall model is statistically significant ( $F = 11.24$ ,  $p = 0.008$ ). The repo rate coefficient (-8,340) indicates that, holding other variables constant, a 1% increase in the repo rate is associated with a reduction of approximately Rs. 8,340 crore in SBI's net profit. This is the largest and most significant coefficient in the model. The CRR coefficient (-2,210) suggests that tightening of reserve requirements also negatively impacts profitability, though to a lesser extent. Interestingly, the reverse repo rate shows a positive coefficient (3,120), indicating that higher overnight deposit rates may boost SBI's income from treasury operations with the RBI.

**Table 5: SBI Credit and Deposit Growth vs. Repo Rate**

Year	Repo Rate (%)	Credit Growth (%)	Deposit Growth (%)
2014-15	7.50	9.5	11.3
2016-17	6.25	7.2	15.3
2018-19	6.50	12.1	9.8
2020-21	4.00	5.0	11.4
2022-23	6.50	16.8	10.2
2023-24	6.50	14.2	12.1

Source: RBI DBIE and SBI Annual Reports

Table 5 highlights the interplay between monetary policy and business volumes. During the low-rate period of 2020-21 (repo rate 4.00%), credit growth was paradoxically subdued at 5.0%, reflecting

the demand-side shock of the pandemic. The highest credit growth of 16.8% was observed in 2022-23 despite the repo rate rising to 6.50%, as post-pandemic economic revival and pent-up demand drove robust loan demand. This suggests that while monetary policy influences credit cost and supply, real-economy demand remains a dominant driver of loan book growth.

## 6. FINDINGS AND SUGGESTIONS

Based on the data analysis, the following key findings emerge from this study:

**Finding 1 — Strong Negative Impact of Repo Rate on Profitability:** The repo rate is the most powerful monetary policy instrument affecting SBI's net profit. A 1% increase in repo rate is associated with approximately Rs. 8,340 crore reduction in net profit, as confirmed by the regression model. This finding is consistent with global literature on monetary policy transmission.

**Finding 2 — NIM Benefits from Rate Increases in the Short Run:** Higher repo rates initially widen the Net Interest Margin (correlation: +0.68), as SBI reprices its variable-rate loan portfolio faster than its deposit base. However, prolonged high rates eventually suppress loan demand and may erode NIM in the medium to long term.

**Finding 3 — NPA and Policy Rates Show Moderate Positive Association:** Rising borrowing costs under higher repo rate regimes are associated with moderate deterioration in asset quality (NPA correlation: +0.55). However, the relationship is not statistically significant, underscoring that NPA formation is a complex phenomenon influenced by sector-specific stress, regulatory norms, and governance factors.

**Finding 4 — COVID-Period Monetary Easing Aided SBI's Recovery:** The sharp rate cuts and CRR reduction in 2020-21 provided significant liquidity relief and

lower cost of funds, setting the stage for SBI's profitability surge from 2021-22 onwards. The recovery also benefited from improved resolution of legacy NPAs under the IBC framework.

**Finding 5 — SLR Reduction Has Limited Direct Profitability Impact:** The SLR coefficient, while negative, is not significant at the 5% level, suggesting that SLR changes impact SBI's investment portfolio composition but not directly its bottom line in a statistically robust manner.

Based on these findings, the following suggestions are offered:

**Suggestion 1 —** RBI should pursue a calibrated, data-dependent approach to rate changes, taking into account the differential impact on systemically important banks like SBI. Sudden, steep rate hikes may disproportionately impact SBI's provisioning requirements and credit cost.

**Suggestion 2 —** SBI's management should focus on enhancing its MCLR (Marginal Cost of Lending Rate) responsiveness mechanism to ensure more symmetric repricing of assets and liabilities during rate cycles, thereby protecting NIM in both rising and falling rate environments.

**Suggestion 3 —** SBI should continue to strengthen its risk management framework, particularly under rising rate scenarios, to proactively identify sectors vulnerable to credit stress before they translate into NPA formation.

**Suggestion 4 —** Diversification of non-interest income through fee-based services, digital banking products, and cross-selling of financial products can buffer SBI against the volatility inherent in interest rate cycle-driven profitability swings.

**Suggestion 5 —** The government and RBI should work towards deeper monetary policy transmission by addressing structural rigidities in credit markets, including improving access to credit

bureaus and standardising collateral valuation norms.

## 7. CONCLUSION

This study has empirically established that RBI's monetary policy instruments, particularly the repo rate, exert a statistically significant and economically meaningful impact on the profitability of the State Bank of India. Over the decade from 2014-15 to 2023-24, SBI navigated through one of the most turbulent monetary policy cycles in India's banking history — encompassing the NPA crisis of 2017-18, the COVID-19 pandemic shock of 2020-21, and the subsequent inflationary tightening cycle of 2022-24.

The correlation and regression analyses confirm that the repo rate is the dominant monetary transmission variable, with a Rs. 8,340 crore impact on SBI's net profit for every 1% change. The model explains 84.7% of the variance in net profit, underscoring the primacy of monetary policy in determining SBI's financial outcomes.

However, it is equally evident that monetary policy is not the sole determinant of SBI's profitability. Bank-specific factors such as NPA management, operational efficiency, credit growth strategies, and regulatory compliance also play crucial roles. The spectacular profitability recovery of SBI from 2019-20 onwards, despite multiple rate cycles, demonstrates the bank's institutional resilience and improved governance.

In conclusion, this study reinforces the importance of coordinated policy calibration between the RBI and the banking sector. An effective monetary transmission mechanism, combined with prudent bank management and proactive risk governance, is essential for sustaining profitability and financial stability in India's banking sector. Future research may extend this analysis to a panel of multiple PSU banks or incorporate

forward-looking indicators such as credit risk models and macroprudential stress testing.

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