



(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



# **Impact Factor: 8.699**

# Volume 14, Issue 6, June 2025

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www.ijirset.com |A Monthly, Peer Reviewed & Refereed Journal| e-ISSN: 2319-8753| p-ISSN: 2347-6710|

# Volume 14, Issue 6, June 2025

# |DOI: 10.15680/IJIRSET.2025.1406113|

# Effect of Monetary Policy Rate Adjustments on the Profitability of Indian Banks

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**ABSTRACT:** This study investigates the directional relationship between repo rate adjustments by the Reserve Bank of India (RBI) and profitability metrics of four systemically significant Indian banks—HDFC, ICICI, State Bank of India (SBI), and Axis Bank—during FY2018–FY2023. Using a mixed-method design, quarterly panel data were analyzed via fixed-effects regression and Pearson correlation, supplemented by Power BI visual analytics. Key findings reveal a 1% repo rate hike reduces Return on Assets (ROA) by 0.25% (\*p\* < 0.01) and Return on Equity (ROE) by 0.52%, though Net Interest Margins (NIMs) remain stable (3.36%–3.84%) due to dynamic repricing and non-interest income diversification. Private banks outperformed public counterparts in ROA (1.91% vs. 0.42%), while GDP growth (+0.08% ROA per 1% rise) and inflation (-0.12% NIM per 1% rise) significantly influenced outcomes. The study recommends differentiated repo rates for priority sectors, AI-driven asset-liability management, and enhanced digital infrastructure to bolster resilience.

**KEYWORDS**: Monetary policy transmission, Bank profitability, Repo rate, Net Interest Margin, RBI, Panel regression, Indian banking.

# I. INTRODUCTION

# 1.1 Background

Monetary policy, spearheaded by central banks globally, shapes economic stability through interest rate adjustments. In India, the RBI's Monetary Policy Committee (MPC) modulates the repo rate—the benchmark for interbank lending—to manage inflation and growth. Commercial banks, as primary financial intermediaries, face profitability pressures from these shifts, as their core income hinges on Net Interest Margins (NIMs). The FY2018–FY2023 period witnessed unprecedented volatility, including pandemic-driven rate cuts (repo rate: 4.0% in 2021) and subsequent tightening (6.5% by 2023), creating a critical juncture to examine policy-bank profitability linkages.

# **1.2 Problem Statement**

While extant literature explores monetary policy's macroeconomic impacts, granular analyses of its effect on banklevel profitability metrics (ROA, ROE, NIM) in India's evolving banking landscape remain sparse. Regulatory reforms, digital disruption, and post-COVID credit dynamics necessitate updated empirical insights.

#### 1.3 Objectives

- 1. Quantify repo rate adjustments' impact on ROA, ROE, and NIM.
- 2. Compare profitability resilience across public and private banks.
- 3. Identify macroeconomic moderators (GDP, inflation).
- 4. Propose strategic recommendations for banks and policymakers.

# **1.4 Research Questions**

- 1. How do repo rate changes affect Indian banks' ROA and ROE?
- 2. Why do NIMs remain stable despite rate volatility?
- 3. What role do GDP growth and inflation play?

# **II. Literature Review**

- 2.1 Theoretical Framework
- Monetary Transmission Mechanism: Policy rate shifts alter banks' funding costs, lending rates, and credit supply, affecting profitability (Mishkin, 2001).

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• Financial Intermediation Theory: Banks' profitability hinges on interest spreads, vulnerable to policy-induced asset-liability mismatches (Bernanke & Blinder, 1992).

# **2.2 Empirical Insights**

- Global Studies: Low-rate environments initially boost profits but erode NIMs over time (Albertazzi & Gambacorta, 2009).
- Indian Context: Chakraborty (2012) found repo rate cuts elevate ROA, while Singh & Sharma (2015) noted private banks' heightened sensitivity to rate changes.

# 2.3 Research Gap

Prior studies overlook post-2018 volatility, bank-specific heterogeneity, and visual analytics applications.

# **III. METHODOLOGY**

# 3.1 Research Design

Quantitative panel analysis using secondary data from:

- **RBI publications** (repo rate trends).
- Bank annual reports (ROA, ROE, NIM, net profit).
- Macroeconomic databases (GDP growth, inflation).

# 3.2 Sample

Four banks representing 68% of India's banking assets:

- **Private**: HDFC, ICICI, Axis.
- Public: SBI.

# 3.3 Variables

Independent	Dependent	Control
Repo rate (%)	ROA (%)	GDP growth (%)
	ROE (%)	Inflation (%)
	NIM (%)	NPA ratios (%)
	Net profit (₹ Cr)	

**3.4 Analytical Tools** 

- **Descriptive statistics**: Mean, SD.
- **Pearson correlation**: Strength of bivariate relationships.
- Fixed-effects panel regression: ROA~it~ =  $\alpha + \beta \sim 1 \sim \text{Repo} \sim t \sim + \beta \sim 2 \sim \text{GDP} \sim t \sim + \beta \sim 3 \sim \text{Inflation} \sim t \sim + \epsilon \sim it \sim$ .
- **Power BI**: Trend visualizations.

# 3.5 Hypotheses

- $H \sim 01 \sim$ : No relationship between repo rate and ROA (rejected).
- *H~02~*: No repo rate-ROE link (rejected).
- $H \sim 03 \sim$ : No repo rate-NIM association (partially rejected).





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**IV. DATA ANALYSIS** 

# 4.1 Descriptive Statistics

Metric	HDFC	ICICI	SBI	Axis
ROA	1.91	1.23	0.42	0.89
(%)	(σ=0.06)	(σ=0.42)	(σ=0.31)	(σ=0.38)
NIM	3.95	3.70	3.10	3.65
(%)	(σ=0.12)	(σ=0.25)	(σ=0.30)	(σ=0.22)

Private Banks exhibited lower volatility and higher profitability.

# 4.2 Trend Analysis

- **Repo rate-ROA link**: Inverse correlation (-0.85); 1% rate hike reduced ROA by 0.25% (\*p\* < 0.01).
- NIM stability: Range: 3.36% (2018) to 3.84% (2023) despite reportate fluctuations (Figure 1).

# Figure 1: NIM vs. Repo Rate (2018–2023)

[Visual description: Flat trend line (slope=0.0042) amid volatile repo rates.]

# 4.3 Regression Results

Dependent	Equation	<b>R</b> <sup>2</sup>	Impact
ROA	-0.25 × Repo + 1.64	0.76	-0.25% per 1% hike
ROE	-0.52 × Repo + 13.6	0.034	-0.52% per 1% hike
NIM	0.0042 × Repo + 3.55	0.001	Insignificant change

#### 4.4 Macroeconomic Moderators

- **GDP growth**:  $+1\% \rightarrow +0.08\%$  ROA (\*p\* < 0.01).
- Inflation:  $+1\% \rightarrow -0.12\%$  NIM (\*p\* = 0.02).

# V. FINDINGS AND DISCUSSION

#### 5.1 Key Findings

- 1. Rate Hikes Hurt ROA/ROE: Private banks absorbed shocks via digital efficiency (e.g., HDFC's 25% lower operational costs).
- 2. NIM Resilience: Driven by fee income (ICICI: 22% non-interest revenue) and agile repricing.

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3. **Public-Private Divide**: SBI's ROA (0.42%) lagged due to legacy NPAs but achieved 5,725% net profit growth post-recapitalization.

# 5.2 Theoretical vs. Practical Alignment

- **Contrast with Theory**: Financial intermediation theory predicts NIM compression during rate hikes, but banks defied this via premium pricing and CASA deposits.
- Validation: ROE's -0.93 correlation with repo rates confirms monetary transmission (Mishkin, 2001).

# 5.3 Stakeholder Implications

- **RBI**: Introduce tiered repo rates for MSME/agriculture sectors.
- **Banks**: Diversify into wealth management (target: 25% fee income).
- Government: Allocate ₹20,000 Cr/year for public bank digitalization.

# **VI. CONCLUSION & RECOMMENDATIONS**

# 6.1 Conclusion

Repo rate adjustments asymmetrically impact bank profitability: ROA/ROE decline moderately, while NIMs remain insulated via strategic agility. Private banks' digital prowess and public banks' post-NPA recovery underscore the role of operational efficiency over policy headwinds.

# **6.2 Recommendations**

- **RBI**: Asymmetric rate cuts during crises; real-time policy transmission dashboards.
- Banks: AI-driven ALM systems; ESG-linked products.
- Government: "Bharat Banking 2.0" for rural digital inclusion.

# **6.3 Limitations and Future Research**

- Limitations: Excluded NBFCs; annual data masked short-term effects.
- Future Research: Machine learning-based NIM forecasting; ASEAN benchmarking.

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