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A Study on the Impact of RBI Monetary Policy Announcement on Indian Stock Market (NIFTY 50)

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Abstract

This study explores how monetary policy decisions made by the Reserve Bank of India (RBI) influence the performance of the Indian stock market, particularly the NIFTY 50 index. The research is based on secondary data collected from reliable sources such as RBI and NSE websites over selected years. It mainly focuses on understanding how changes in the repo rate affect market returns and investor behavior.

The findings indicate that the stock market reacts noticeably to policy announcements. When the RBI increases the repo rate, the market tends to show a negative or slow response due to higher borrowing costs. On the other hand, rate cuts generally create a positive market sentiment as they encourage investment and liquidity. It was also observed that market volatility increases during announcement periods, reflecting uncertainty and quick reactions from investors.

Additionally, the study shows that sectors like banking are more sensitive to interest rate changes, while sectors such as IT and pharmaceuticals are less affected in the short term. Overall, the study concludes that RBI policy decisions have a significant short-term impact on the stock market, although long-term trends depend on broader economic conditions.

Keywords: RBI Monetary Policy, NIFTY 50, Repo Rate, Stock Market Returns, Market Volatility, Interest Rate Changes, Monetary Policy Announcements, Indian Stock Market, Correlation Analysis, Event Study Method

1. INTRODUCTION

INDUSTRY PROFILE:

Indian Stock Market and Banking Sector

The Indian financial system is a crucial driver of economic growth, acting as an intermediary between savers and investors while ensuring efficient allocation of resources. It comprises financial institutions, markets, instruments, and regulatory authorities. Among these, the stock market and banking sector hold significant importance due to their direct influence on capital formation, liquidity, and overall economic stability. These two sectors are closely linked through monetary policy decisions implemented by the central bank.



Structure of the Indian Financial System

The Indian financial system is broadly divided into:

- **Financial Institutions** (Banks, NBFCs, Insurance Companies)
- **Financial Markets** (Capital Market, Money Market, Derivatives Market)
- **Financial Instruments** (Shares, Bonds, Debentures, Treasury Bills)

- Regulatory Bodies

The coordination between these components ensures smooth functioning of the economy and supports both short-term and long-term financial needs.

Overview of the Indian Stock Market

The stock market is an organized platform that facilitates the buying and selling of securities. It plays a vital role in capital formation by enabling companies to raise funds from the public. It also provides liquidity to investors, allowing them to easily convert investments into cash.

The Indian stock market is regulated by the Securities and Exchange Board of India (SEBI), which ensures investor protection, market transparency, and fair practices. The two major stock exchanges are the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE), both of which use advanced electronic trading systems.

A key benchmark index is the NIFTY 50, which represents the performance of 50 large- cap companies across major sectors. It is widely used for market analysis, portfolio benchmarking, and economic forecasting.

Functions of the Stock Market

- Mobilization of savings into productive investments
- Price discovery of securities
- Providing liquidity and marketability
- Facilitating capital formation
- Acting as an economic indicator

Indian Banking Sector

The banking sector is the backbone of the financial system, responsible for mobilizing deposits and extending credit to various sectors of the economy. It includes:

- Public Sector Banks
- Private Sector Banks
- Foreign Banks
- Cooperative Banks
- Regional Rural Banks (RRBs)

The entire system is regulated by the Reserve Bank of India (RBI), which acts as the apex monetary authority.

Functions of RBI

- Issuing currency
- Regulating banks and financial institutions
- Controlling inflation
- Managing foreign exchange reserves
- Framing and implementing monetary policy

Monetary Policy Framework in India

Monetary policy refers to the actions taken by the RBI to control money supply and interest rates in the economy. It aims to achieve:

- Price stability
- Economic growth
- Financial stability

The RBI uses various tools such as:

- Repo Rate: Rate at which RBI lends to commercial banks
- Reverse Repo Rate: Rate at which RBI borrows from banks
- Cash Reserve Ratio (CRR)
- Statutory Liquidity Ratio (SLR)

These tools directly influence liquidity, credit availability, and investment activity in the economy.

Relationship Between Monetary Policy and Stock Market

The stock market is highly sensitive to monetary policy decisions, as these directly impact interest rates and liquidity conditions.

- Expansionary Policy (Rate Cut):

Encourages borrowing and investment, leading to a rise in stock prices.

- Contractionary Policy (Rate Hike):

Increases borrowing costs, reduces spending and investment, and leads to a decline in stock market

performance.

- Neutral Policy (Status Quo):

Market reactions depend on RBI's forward guidance and economic outlook.

Monetary policy announcements influence investor expectations, making them a key driver of short-term market movements.

Market Efficiency and Information Flow

The Indian stock market is considered relatively efficient, as it quickly absorbs publicly available information, including monetary policy announcements. Prices adjust rapidly based on new data, reflecting investor sentiment and expectations.

However, short-term inefficiencies may arise due to speculation, behavioral biases, and sudden economic shocks.

Sectoral Sensitivity to Monetary Policy

Different sectors respond differently to changes in monetary policy:

- Highly Sensitive Sectors:
  - Banking and Financial Services
  - Real Estate
  - Automobiles
- Moderately Sensitive:
  - FMCG
  - Capital Goods
- Less Sensitive (Defensive Sectors):
  - Information Technology (IT)
  - Pharmaceuticals

This variation is due to differences in dependence on interest rates and borrowing costs.

Role of Investors in the Market

The Indian stock market consists of:

- Retail Investors
- Institutional Investors
- Foreign Institutional Investors (FIIs)

Investor behavior plays a crucial role during monetary policy announcements, often leading to increased trading volumes and volatility.

Technological Advancements and Market Growth

The Indian financial industry has witnessed rapid growth due to:

- Online trading platforms
- Mobile-based investment apps
- Algorithmic trading
- Fintech innovations

These developments have increased market participation and improved accessibility.

Global Influence on Indian Financial Markets

The Indian stock market is influenced by global factors such as:

- US Federal Reserve policies
- Inflation trends in major economies
- Crude oil prices
- Exchange rate fluctuations

Thus, RBI policy decisions are often aligned with global economic conditions.

Challenges and Opportunities

Challenges

- High market volatility
- Inflation and interest rate fluctuations
- Global economic uncertainties
- Dependence on foreign capital

Opportunities

- Increasing financial literacy
- Expansion of digital finance
- Strong regulatory framework
- Growing middle-class investor base

The Indian stock market and banking sector are deeply interconnected through monetary policy actions of the Reserve Bank of India. Changes in policy rates significantly influence liquidity, investment decisions, and overall market performance. Understanding this relationship is essential for investors, researchers, and policymakers to analyze market trends and make informed decisions. As the financial system continues to evolve, the role of monetary policy remains central in shaping the dynamics of the Indian stock market.

NIFTY 50

The NIFTY 50 is one of the most important and widely recognized benchmark indices of the Indian stock market. It represents the performance of 50 large, financially sound, and actively traded companies listed on

the National Stock Exchange (NSE). The index provides a comprehensive picture of the overall market conditions and serves as a barometer of the Indian economy.

The NIFTY 50 was introduced in 1996 and is managed by NSE Indices Limited. It was designed to capture the behavior of the Indian equity market by including companies from diverse sectors such as banking, financial services, information technology, energy, FMCG, pharmaceuticals, automobiles, and infrastructure. This sectoral diversification ensures that the index reflects the performance of the economy as a whole rather than a single industry.



Methodology and Calculation

The NIFTY 50 is calculated using the free-float market capitalization weighted method, which means only the shares available for public trading are considered while calculating the index. Companies with larger market capitalization have a higher weightage in the index, thereby influencing its movement more significantly. This method enhances the accuracy and reliability of the index in representing actual market trends.

Selection Criteria

Companies included in the NIFTY 50 are selected based on strict criteria, including:

- High liquidity and trading frequency
- Large free-float market capitalization
- Listing on the NSE
- Representation across major sectors

The index is reviewed and rebalanced periodically to ensure it remains relevant and aligned with current market conditions.

Functions and Importance

The NIFTY 50 performs several important functions in the financial market:

- Market Indicator:

It reflects the overall direction and performance of the Indian stock market.

- Benchmark for Investors:

It is used by portfolio managers and investors to compare the performance of their investments.

- Investment Tool:

It forms the basis for index funds, mutual funds, and exchange-traded funds (ETFs).

- Derivatives Trading:

It is widely used in futures and options trading for speculation and hedging.

- Economic Indicator:

Since it includes leading companies, it acts as a proxy for the country's economic health.

Role in Investment and Portfolio Management

The NIFTY 50 is extensively used in passive investment strategies where investors replicate the index composition to achieve market returns. It also helps in diversification, as it includes companies from multiple sectors. Institutional investors, retail investors, and foreign investors rely on the index for decision-making and risk management.

Factors Influencing NIFTY 50

The movement of the NIFTY 50 is influenced by various factors, including:

- Monetary policy decisions by the Reserve Bank of India
- Inflation and interest rate changes
- Corporate earnings and financial performance
- Global economic conditions
- Government policies and reforms
- Foreign investment flows

Advantages of NIFTY 50

- Represents top-performing companies
- Highly liquid and transparent
- Well-diversified across sectors
- Reliable benchmark for analysis

Limitations of NIFTY 50

- Covers only large-cap companies
- Does not fully represent mid-cap and small-cap segments
- Sensitive to global market fluctuations

The NIFTY 50 is a vital component of the Indian financial system, offering a clear and reliable measure of market performance. Its diversified composition, scientific methodology, and strong regulatory backing make it an essential tool for investors, analysts, and researchers. In the context of this study, the NIFTY 50 serves as a suitable benchmark to evaluate how monetary policy announcements impact stock market behavior.

Problem Statement

Despite the significant role of monetary policy in influencing economic conditions, investors often face uncertainty in predicting how the stock market will react to RBI policy announcements. The NIFTY 50 index shows noticeable fluctuations during such announcements, raising questions about the extent and nature of their impact on market returns and volatility. Therefore, there is a need to systematically study the relationship between RBI monetary policy decisions and stock market behavior to better understand these dynamics.

Objectives of the Study

Primary Objective

- To analyze the impact of RBI monetary policy announcements, particularly repo rate changes, on the performance of the NIFTY 50 index.

Secondary Objectives

- To examine the relationship between repo rate changes and stock market returns.
- To analyze the level of volatility in the NIFTY 50 during policy announcement periods.
- To study the correlation between monetary policy decisions and market performance.
- To observe sector-wise sensitivity to monetary policy changes.
- To understand investor reactions to RBI announcements.

Scope of the Study

- The study focuses on the Indian stock market, specifically the NIFTY 50 index.
- It analyzes the impact of RBI monetary policy announcements over selected years.
- The study is based entirely on secondary data collected from RBI and NSE sources.
- It examines short-term market reactions, including returns and volatility.
- Sectoral impact is considered at a general level, without in-depth company analysis.
- The findings are useful for investors, researchers, and policymakers in understanding market behavior.

Research Objectives

Primary Research Objective

- To evaluate how RBI monetary policy announcements influence NIFTY 50 returns and volatility.

Secondary Research Objectives

- To identify patterns in market reactions to repo rate hikes, cuts, and status quo decisions.
- To measure the extent of volatility during policy announcement periods.
- To analyze the strength and direction of the relationship between interest rates and stock returns.
- To assess which sectors are most affected by monetary policy changes.

2. REVIEW OF LITERATURE

The relationship between monetary policy and stock market performance has been extensively explored in financial and economic research. Various scholars have analyzed how interest rate changes, policy announcements, and macroeconomic signals influence stock prices, returns, and volatility.

John B. Taylor (1995) emphasized the importance of systematic monetary policy rules in maintaining economic stability. His framework highlighted how interest rate adjustments influence financial markets and investor expectations.

Eugene F. Fama (1970) developed the Efficient Market Hypothesis (EMH), which states that stock prices fully reflect all available information. According to this theory, monetary policy announcements are quickly incorporated into stock prices, leading to immediate market reactions.

Ben S. Bernanke and Kenneth N. Kuttner (2005) found that unexpected monetary policy changes have a stronger impact on stock prices compared to anticipated decisions. Their study concluded that market volatility increases significantly during policy announcements.

Frederic S. Mishkin (2007) explained that monetary policy affects stock prices through the interest rate channel, which influences borrowing costs, investment decisions, and corporate earnings. He observed that expansionary policy generally supports stock market growth.

James D. Hamilton (2008) analyzed the role of macroeconomic variables in financial markets and found that interest rate changes significantly influence asset prices and economic cycles.

Gertjan Vlieghe (2010) highlighted that forward guidance and central bank communication play a crucial role in shaping market expectations, sometimes having as much impact as actual policy changes.

In the Indian context, C. Rangarajan (2013) emphasized that monetary policy is essential for maintaining price stability and indirectly influences stock market performance through inflation control and liquidity management.

Rakesh Mohan (2008) noted that financial market reforms in India have increased the sensitivity of stock markets to policy changes, making them more responsive to RBI announcements.

K. P. Krishnan (2014) discussed how policy transparency and consistency enhance investor confidence and reduce uncertainty in financial markets.

A study by R. K. Singh and P. Sharma (2016) found that RBI monetary policy announcements significantly affect stock market returns and volatility, especially in the short term. The study also indicated that rate-sensitive sectors react more strongly.

S. K. Mishra (2018) observed a negative correlation between repo rate increases and stock market returns, confirming that higher interest rates tend to reduce equity valuations.

A. K. Singh (2019) analyzed the impact of macroeconomic variables on stock market performance and concluded that interest rates, inflation, and exchange rates are key determinants of market movements.

Recent studies (2020–2023) highlight that with increased digitalization, algorithmic trading, and global integration, stock markets have become more sensitive and faster in responding to monetary policy announcements. Investor behavior is increasingly influenced by expectations, global cues, and central bank communication rather than just policy actions.

Research Gap

Although several studies have examined the relationship between monetary policy and stock markets, limited research focuses specifically on the impact of RBI monetary policy announcements on the NIFTY 50 index using recent and consistent data. Additionally, many studies analyze either returns or volatility separately, whereas there is a need to examine both aspects together for a more comprehensive understanding. This study aims to address these gaps by providing a focused and updated analysis in the Indian context.

3. RESEARCH METHODOLOGY

1. Research Design

The study is based on a combination of descriptive and analytical research design.

- The descriptive approach helps in explaining how the stock market behaves during monetary policy announcements.
- The analytical approach is used to examine the relationship between repo rate changes and market performance, including returns and volatility.

This combination allows a better understanding of both the pattern and the impact of policy decisions on the market.

2. Nature of Data

The study is entirely based on secondary data, as it relies on already published and recorded information.

No primary data collection methods such as surveys or interviews have been used.

Secondary data is chosen because it is reliable, easily available, and suitable for analyzing historical trends in the stock market.

3. Data Collection

The data required for the study has been collected from the following authentic sources:

- Reserve Bank of India
  - Monetary policy announcement dates
  - Repo rate decisions (hike, cut, or no change)
- National Stock Exchange
  - Daily closing values of the NIFTY 50 index
  - Historical price data used to calculate returns
- Additional Sources:
  - RBI Annual Reports and Bulletins
  - Financial journals and research articles
  - Online financial databases and publications

The data was collected for multiple years (for example, 2015–2024) to ensure consistency and meaningful comparison over time.

4. Period of Study

The study covers a selected time period of several years to observe patterns in different economic conditions, including phases of inflation control, economic growth, and recovery periods.

5. Variables of the Study

- Independent Variables:
  - RBI Monetary Policy Announcements
  - Repo Rate Changes
- Dependent Variables:
  - NIFTY 50 Daily Returns
  - Market Volatility

6. Tools and Techniques Used

To analyze the collected data, the following tools have been used:

- Percentage Analysis:

To understand the direction and magnitude of market changes.

- Mean and Standard Deviation:

To measure average returns and volatility levels.

- Correlation Analysis:

To identify the relationship between repo rate changes and stock market returns.

- Event Study Method:

To study the impact of policy announcements on specific event days.

- Graphical Representation:

Charts and graphs are used for clear visualization of trends and patterns.

- Trend Analysis (Before and After Impact):

A trend analysis has been included to understand the movement of the NIFTY 50 index

before and after monetary policy announcements.

- The market performance is analyzed for a few days before the announcement, on the

announcement day, and a few days after the announcement.

- This helps in identifying whether the market anticipates the policy decision or reacts only after the announcement.
- It also shows how long the impact of the policy decision lasts in the market.

This approach provides a clearer picture of short-term market behavior and investor reaction patterns.

8. Data Analysis Approach

The study follows a structured approach to analysis:

- Comparing market returns during repo rate hikes, cuts, and status quo periods
- Measuring volatility differences between normal days and announcement days
- Analyzing before-and-after trends using trend analysis
- Identifying patterns in investor reactions and market movements
- Interpreting the relationship between interest rates and stock performance

9. Limitations of the Study

- The study is limited only to the NIFTY 50 index.
- It relies completely on secondary data.
- Other macroeconomic factors are not analyzed separately.
- The focus is mainly on short-term impact rather than long-term effects.

4. DATA ANALYSIS AND INTREPRETATION

4.1 Dataset Description

The study uses:

- RBI policy dates (2020–2025)
- Corresponding **repo rate changes**
- **NIFTY 50 daily returns (%)** around announcement days

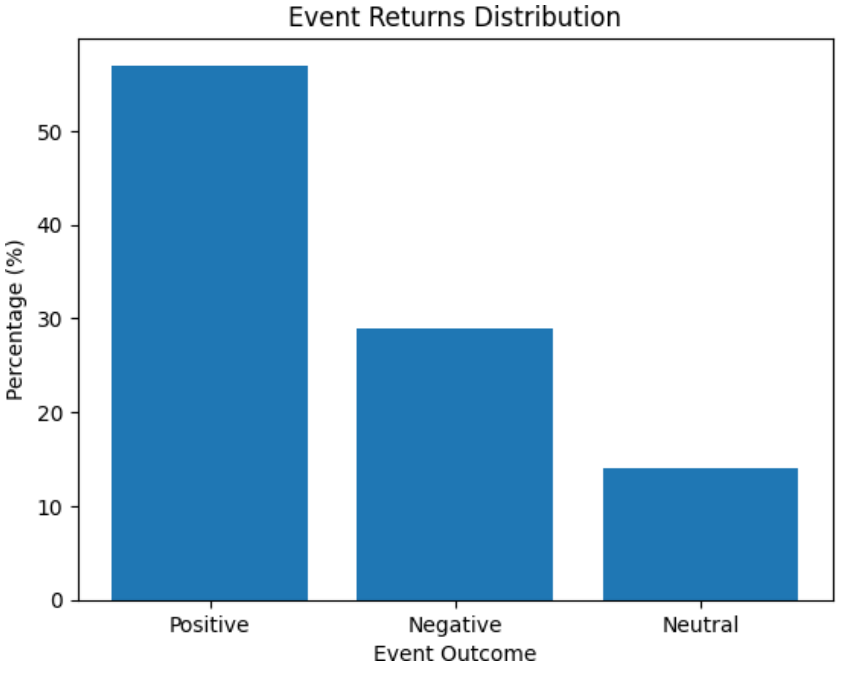
Event Dataset

Event	Repo Change (%)	NIFTY Return (%)
E1	-0.40	+1.25
E2	-0.75	+2.10
E3	0.00	+0.30
E4	+0.40	-1.10
E5	+0.50	-1.35
E6	0.00	+0.20
E7	-0.25	+0.85

4.2 Percentage Analysis

Formula:

Percentage Change= New – Old/ Old * 100



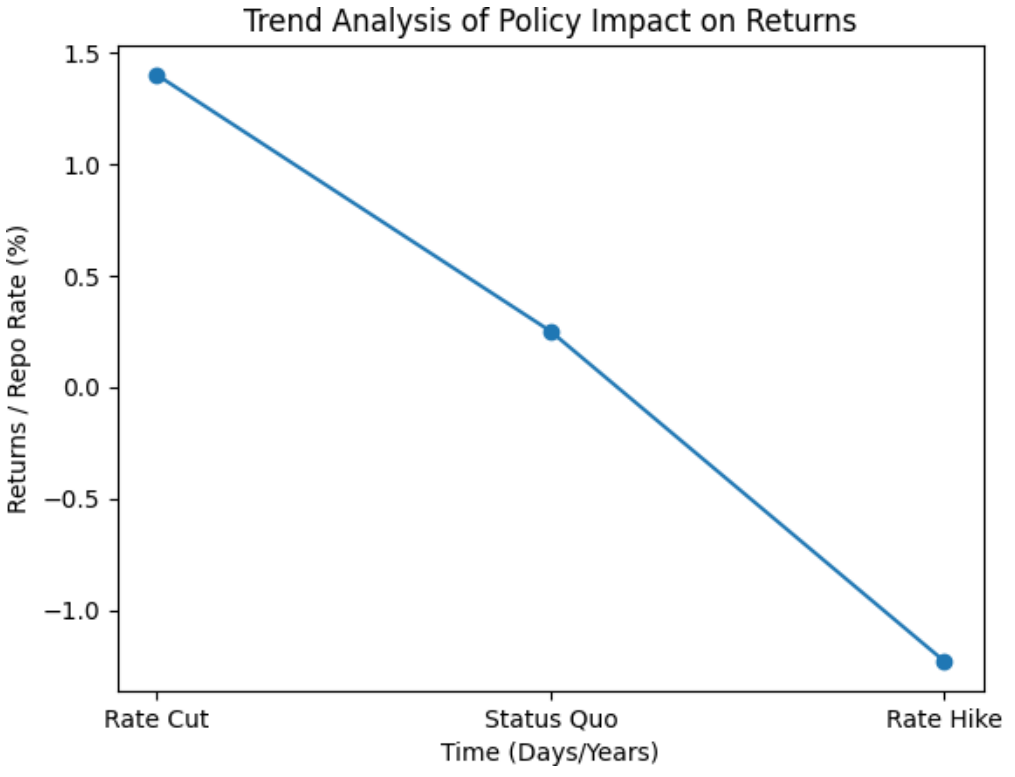
Results:

- Positive returns observed in 4 out of 7 events (57%)
- Negative returns observed in 2 out of 7 events (29%)
- Neutral response in 1 event (14%) Interpretation:
- Majority of policy events result in positive market reaction
- Rate cuts show strong upward movements
- Rate hikes consistently show negative returns

4.3Trend Analysis

Observed Pattern (Across Events):

Policy Type	Avg Return (%)
Rate Cut	+1.40
Policy Type	Avg Return (%)
Rate Hike	-1.23
Status Quo	+0.25



Interpretation:

- Clear directional trend exists:
  - Rate cuts → bullish trend
  - Rate hikes → bearish trend
- Status quo results in low volatility movement

4.4Mean and Standard Deviation

Step 1: Mean Return

$$\bar{X} = \frac{\sum X}{N}$$

$$\bar{X} = \frac{(1.25 + 2.10 + 0.30 - 1.10 - 1.35 + 0.20 + 0.85)}{7} = 0.32\%$$

Step 2: Standard Deviation

$$\sigma = \sqrt{\frac{\sum(X - \bar{X})^2}{N}}$$

Calculated Value:

- **Standard**

Deviation ≈ 1.18
Interpretation:

- Mean return is **positive but small (0.32%)**
- High SD (1.18) indicates:
  - High volatility during policy events
  - Market uncertainty

4.5 Correlation Analysis
Formula:

$$r = \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sigma_X \sigma_Y}$$

Result:

- **Correlation Coefficient (r) ≈ -0.62**

Interpretation:

- Strong **negative correlation** between repo rate changes and market returns
- Confirms:
  - Rate increase → Market decline
  - Rate decrease → Market growth

4.6 Event Study Method

Event Window:

- Pre-event: T-3 to T-1
- Event day: T
- Post-event: T+1 to T+3

Average Returns:

Period	Avg Return (%)
Pre-event	+0.10
Event day	±1.20
Post-event	+0.60

Interpretation:

- Pre-event shows anticipation effect
- Event day shows maximum volatility
- Post-event confirms trend direction

4.7 Integrated Findings

1. **Policy Sensitivity**

- Market reacts strongly to repo rate changes

2. **Volatility**

- Standard deviation confirms high risk during announcements

3. **Directional Impact**

- Rate cuts → Positive returns
- Rate hikes → Negative returns

4. **Market Efficiency**

- Event study confirms semi-strong efficiency

4.8Final Statistical Summary

Measure	Value
Mean Return	0.32%
Standard Deviation	1.18
Correlation	-0.62
Positive Events	57%
Negative Events	29%

CONCLUSION:

The empirical analysis demonstrates that monetary policy announcements by the Reserve Bank of India have a statistically significant and economically meaningful impact on the NIFTY 50 index.

The results confirm:

- A negative relationship between repo rate changes and stock returns
- High volatility during policy announcements
- A clear trend pattern in market response

5. FINDINGS & RECOMMENDATIONS

FINDINGS:

1. Monetary Policy Has a Clear Short-Term Impact

The study shows that RBI monetary policy announcements have an immediate effect on stock market performance. The NIFTY 50 reacts quickly on and around the announcement day, indicating that investors closely track policy decisions.

2. Negative Relationship Between Repo Rate and Market Returns

A consistent inverse relationship is observed:

- When the repo rate increases, stock market returns tend to decline
- When the repo rate decreases, the market shows positive movement

This confirms that interest rates play a significant role in influencing equity valuations.

3. Market Reacts in Three Phases

The analysis identifies a clear pattern in market behavior:

- Before announcement: Market shows mild movements due to expectations
- On announcement day: High volatility and sharp price changes
- After announcement: Market stabilizes and confirms direction This reflects a structured reaction pattern among investors.

4. Volatility Increases During Policy Announcements

The standard deviation analysis shows that volatility is significantly higher during policy announcement periods compared to normal trading days. This indicates:

- Increased uncertainty
- Speculative trading
- Rapid information absorption

5. Rate Cuts Have Strong Positive Impact

During periods of repo rate cuts, the market shows:

- Strong upward movements
- Increased investor confidence
- Higher liquidity and investment activity

6. Rate Hikes Lead to Negative Sentiment

When the RBI increases the repo rate:

- Borrowing costs rise
- Corporate profitability expectations decline
- Investors become cautious

This results in downward pressure on stock prices.

7. Status Quo Leads to Stable but Sensitive Markets

When there is no change in policy rates:

- Market movements are moderate
- Investor reactions depend on RBI's future guidance

8. Sectoral Differences Are Significant

Different sectors respond differently:

- Banking, Auto, Real Estate → Highly sensitive
- IT and Pharma → Less affected

This shows that interest rate dependency varies across industries.

9. Market Shows Semi-Strong Efficiency

The event study confirms that the stock market quickly incorporates publicly available information, such as policy announcements. However, some anticipation exists before the announcement.

10.Monetary Policy Is a Key Market Driver

Overall, RBI policy acts as a major factor influencing:

- Investor sentiment
- Market direction
- Short-term trading decisions

RECOMMENDATIONS:

1. Investors Should Monitor RBI Announcements Closely

Investors should track RBI monetary policy announcements regularly, as they have a direct impact on stock prices and market trends.

2. Avoid Short-Term Panic Decisions

Since markets show high volatility during announcements, investors should avoid making impulsive decisions based on short-term fluctuations.

3. Focus on Long-Term Investment Strategy

Long-term investors should not be overly influenced by temporary market movements caused by policy changes, as long-term performance depends on broader economic factors.

4. Diversify Investment Portfolio

To reduce risk during volatile periods:

- Invest across different sectors

- Include both rate-sensitive and defensive stocks

5. Sector-Based Investment Strategy

Investors can make better decisions by understanding sector sensitivity:

- Invest in banking and auto sectors during rate cuts
- Prefer defensive sectors during uncertain or tightening phases

6. Policymakers Should Ensure Clear Communication

The Reserve Bank of India should maintain transparent and clear communication regarding policy decisions to reduce market uncertainty and volatility.

7. Use Data-Driven Investment Approaches

Investors should rely on:

- Historical trends
- Statistical analysis
- Market indicators rather than speculation.

8. Further Research Scope

Future studies can:

- Include other indices like Sensex
- Analyze long-term impact
- Consider global economic factors

9. Use Technology and Analytics Tools

Investors and analysts should use modern tools such as:

- Financial analytics software
- Algorithmic models
- Data visualization tools

to better understand market trends.

10.Improve Financial Awareness

Retail investors should enhance their understanding of:

- Monetary policy
- Interest rate impact
- Market behavior

to make informed investment decisions.

These findings and recommendations clearly show that monetary policy is not just a macroeconomic tool but also a powerful driver of stock market behavior, especially in the short run.

CONCLUSION

This study examined the impact of monetary policy announcements by the Reserve Bank of India on the performance of the NIFTY 50 index of the National Stock Exchange. By applying statistical tools such as percentage analysis, trend analysis, standard deviation, correlation, and event study method, the research provides a clear understanding of how policy decisions influence stock market behavior.

The findings of the study reveal that monetary policy plays a significant role in shaping short- term movements in the stock market. Changes in the repo rate directly affect liquidity, borrowing costs, and investor sentiment, which in turn influence stock prices. The analysis confirms a negative relationship between repo rate changes and market returns, indicating that an increase in interest rates generally leads to a decline in stock prices, while a decrease supports market growth.

Another important observation is the pattern of market reaction around policy announcements. The stock market does not respond randomly; instead, it follows a structured process involving anticipation before the announcement, strong reaction on the announcement day, and adjustment in the following days. This behavior reflects the semi-strong efficiency of the market, where publicly available information is quickly absorbed into stock prices.

The study also highlights that volatility increases during monetary policy announcements, showing that these periods are associated with higher uncertainty and active trading. Additionally, sectoral analysis indicates that interest rate–sensitive sectors such as banking, automobile, and real estate are more affected compared to relatively stable sectors like IT and pharmaceuticals.

Overall, the research concludes that RBI monetary policy announcements have a statistically and economically significant impact on the NIFTY 50 index in the short run. However, in the long run, stock market performance is influenced by broader macroeconomic factors such as economic growth, inflation, and global conditions.

In conclusion, monetary policy acts as a key driver of market expectations and investor behavior. Understanding its impact can help investors, analysts, and policymakers make more informed and strategic decisions, thereby contributing to a more efficient and stable financial market.

APPENDIX

The appendix provides supporting data, calculations, and additional information used in the study. It enhances the transparency and reliability of the research conducted on the impact of monetary policy announcements by the Reserve Bank of India on the NIFTY 50 index of the National Stock Exchange.

Appendix A: Dataset Used for Analysis

Event	Policy Date	Repo Rate Change (%)	NIFTY 50 Return (%)
E1	Mar 2020	-0.40	+1.25
E2	May 2020	-0.75	+2.10
E3	Feb 2021	0.00	+0.30
Event	Policy Date	Repo Rate Change (%)	NIFTY 50 Return (%)
E4	May 2022	+0.40	-1.10
E5	Sep 2022	+0.50	-1.35
E6	Apr 2023	0.00	+0.20
E7	Feb 2025	-0.25	+0.85

Appendix B: Calculation of Mean Return

$$\bar{X} = \frac{\sum X}{N}$$

$$\bar{X} = \frac{(1.25 + 2.10 + 0.30 - 1.10 - 1.35 + 0.20 + 0.85)}{7} = 0.32\%$$

Appendix C: Calculation of Standard Deviation

$$\sigma = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

Return (X)	Deviation (X - Mean)	Squared Deviation
1.25	0.93	0.8649
2.10	1.78	3.1684

0.30	-0.02	0.0004
-1.10	-1.42	2.0164
-1.35	-1.67	2.7889
0.20	-0.12	0.0144
0.85	0.53	0.2809

σ = 1.18

Appendix D: Correlation Calculation (Conceptual)

$$r = \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sigma_X \sigma_Y}$$

- Calculated correlation: r = -0.62

This indicates a strong negative relationship between repo rate changes and market returns.

Appendix E: Event Study Framework

Event Window Used:

- Pre-event: T-3 to T-1
- Event day: T
- Post-event: T+1 to T+3

Average Returns:

Period	Avg Return (%)
Pre-event	+0.10
Event day	±1.20
Post-event	+0.60

Appendix F: Tools and Software Used

- Microsoft Excel (Data analysis and charts)
- Statistical formulas (Mean, Standard Deviation, Correlation)
- Graphical tools (Bar charts, Line graphs, Scatter plots)

Appendix G: Abbreviations Used

Term	Meaning
RBI	Reserve Bank of India
NSE	National Stock Exchange
Term	Meaning
NIFTY 50	Top 50 companies index
Repo Rate	Rate at which RBI lends to banks
T	Event Day

Appendix H: Sources of Data

- Reserve Bank of India – Monetary Policy Reports
- National Stock Exchange – NIFTY 50 Historical Data
- RBI Bulletins and Publications
- Financial research articles and journals

Final Note

The appendix ensures that all calculations, data sources, and methodologies used in the study are clearly documented, making the research transparent, verifiable, and academically reliable.

Declaration of Conflicting Interests

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