Repo Rate Announcements and Nifty 50 Returns: An Event Study Analysis

Ravi Luhar,
Research Scholar
Department of Business Economics, Faculty of Commerce
The Maharaja Sayajirao University of Baroda
ORCID ID: https://orcid.org/0000-0002-4060-7347
Email ID: ravi.luhar-be@msubaroda.ac.in

Dr. Prashant Vadikar
Assistant Professor
Department of Business Economics
Faculty of Commerce
The Maharaja Sayajirao University of Baroda
ORCID ID: https://orcid.org/0000-0002-4060-7347
Email ID: prashan-be@msubaroda.ac.in

Abstract:

This study investigates the relationship between monetary policy announcements and Indian equity market. This study used event study framework to capture the dynamic relation between repo rate announcement and stock market volatility. The reaction of market measured by the Average Abnormal Return (AAR) and Cumulative Abnormal Average Return (CAAR). This research paper considers a seven-day event window (-3, +3) while expected returns are measure using the mean adjustment return model. The finding of the study reveal that abnormal returns on the announcement day are statistically insignificant. However, it is observed that, post announcement effects are observed up to two trading days. Furthermore, rise in repo rate generate negative return on stock return than the rate cut. This reflects uneven transmission monetary policy.

Introduction:

In emerging economy, central bank makes a necessary change in monetary policy to achieve predetermine macroeconomic goals. Announcement regarding the repo rate is among the most influential events which affect the financial market. A change in the policy rate, known as the repo rate, serve as a key signaling mechanism through which the central bank achieves macroeconomic goals. Traders, investors, and policymakers closely observe Repo rate announcements. Repo rate changes affect borrowing costs, corporate profits, asset valuations, and market participant sentiments. The adoption of (FIT) framework in March 2016 has brought transparency and ease of information in the financial market (Khuntia & Hiremath, 2019). Monetary policy influences stock prices through multiple channels, but the interest rate channel is the more influential (Boi et al., 2017).

The current literature on monetary policy transmission suggests that stock markets tend to respond asymmetrically to policy actions, with expansionary measures, such as rate cuts, eliciting stronger responses than contractionary measures, such as rate hikes.(Tomar & Kesharwani, 2022).Prior studies differ mainly in terms of sample periods, methodological approaches and results offering limited insights on the timing, magnitude, and persistence of stock market response to repo rate announcements.(Sahu et al., 2025) ;(Moizz & Akhtar, 2024).Furthermore, relatively little is known about whether monetary policy announcements cause abnormal volatility beyond normal market fluctuations, particularly during periods of flexible inflation targeting (FIT). To address these research issues, this study employs a standard event study framework to measure abnormal stock market returns around repo rate announcement dates within a short event window. To capture potential asymmetries in market reactions, the study distinguishes between repo rate cuts and rate hikes using regression-based

event-study models. As (Khuntia & Hiremath, 2019) discussed in their study as follow, First, it provides empirical evidence on the equity market's response to RBI repo rate announcements under FIT regimes. Second, it distinguishes between repo rate cuts and hikes, thereby capturing asymmetric market reactions. Third, it also provides a return-based empirical framework. Finally, the findings offer practical insights to market participants.

Review of literature:

The relationship between monetary policy and equity markets is rooted in asset pricing theory, which holds that stock prices reflect the discounted present value of expected future cash flows. According to Bernanke & Kuttner (2005) and Ioannidis & Kontonikas (2008), monetary policy decisions influence equity market valuations mainly through three interrelated channels: the discount rate, risk premium, and expected cash flow channels. When the central bank adopts a tight monetary policy, such as raising interest rates, it raises the risk-free interest rate and the discount factor for future cash flows, thereby exerting downward pressure on stock market prices. At the same time, contractionary monetary policy can reduce economic activity, raise financing costs, and increase uncertainty. In contrast, expansionary monetary policy reduces borrowing costs, boosts corporate investment and consumption, improves earnings expectations, and enhances investor confidence, thereby leading to higher stock prices (Prabu et al., 2020; Miskin F. S., 2019). The efficient market hypothesis (EMH) holds that financial markets incorporate new information rapidly. Under semi-strong efficiency, share prices are expected to adjust to publicly available information (Fama, E. F., 1976). Due to asymmetric information in emerging economies market is quite slow to response or react due to investor's behavior and uncertainties.

One of the benchmark study conducted by Bernanke and Kuttner (2005) found that unexpected change in monetary policy announcement with surprise element leads volatility in stock market. This insight has become foundational in subsequent empirical research, shaping how monetary policy surprises are identified and analyzed in financial markets. Assessing the actual impact of monetary policy on financial markets is thought-provoking because both policy decisions and asset prices often respond to the same financial data, making it tough to isolate policy shocks.(Rigobon & Sack, 2004). In the Indian context, RBI policy announcements affect the Indian financial market, with market reactions shaped not only by changes in policy actions but also by forward guidance.

However, previous studies have focused on broad monetary aggregates, macroeconomic aggregates, and global spillover effects rather than explicitly isolating the effects of the repo

rate announcement (Bomfim, 2003; Tripathi & Seth, 2014; Arin et al., 2025; Verma & Bansal, 2021).These limitations highlight the need for a focused examination of the repo rate announcement and its short-term effects on the Indian stock market. Even past studies rarely treat RBI repo announcements as information events and focus on either returns or volatility. Event evidence is also limited for the post-2016 inflation-targeting regime. These research issues highlight the need for an event-based study (Binder, J. J. 1998) examining abnormal returns around policy easing and tightening.

To address this research issue, researchers use event study methods that concentrate on very short windows around policy announcements. As per the framework, this approach effectively captures short-term market reactions, generally using the mean-adjusted return model for robustness. This study employs methods that enhance regression-based designs.

Objectives:

1. To examine the short-term impact of RBI repo rate announcements on the Nifty index.
2. To compare equity market reactions to repo rate cuts and repo rate hikes.

Research Questions:

1. Do policy rate announcements generate statistically significant abnormal returns in the Indian stock market?
2. Are equity market reactions to repo rate cuts significantly different from those to repo rate hikes?
3. How do abnormal returns change before and after policy rate announcements within the event window?

Research Methodology:

Research Design

This paper adopts a quantitative farmwork to know the short-term reaction on nifty 50 index due to change in policy rate. This study used event study methodology as it wants to assess the impact of particular event (monetary policy announcement) on stock prices with help of secondary data. The event-study approach is suitable because policy announcements are distinct actions whose short-term effects cannot be separated within a narrow time window. To strengthen the traditional event study, it is complemented by a regression-based event-study framework.

The study covers the period 2016–2025 and examines flexible inflation-targeting monetary policy regimes. Each repo rate announcement is treated as an event date and stock

market reactions are analyzed within a seven-day event window, extending from three trading days before to three trading days after the announcement (−3, +3).

This window allows the study to capture potential information leakage before the announcement and delayed market adjustments after the policy decision.

Sample and Data

In 2016, India adopted the Flexible Inflation Targeting (FIT) regime and established the Monetary Policy Committee (MPC) to ensure a consistent, transparent monetary policy framework for reliable event-study analysis.

Data Description

- Indian Stock Market Proxy: Nifty-50 index
- Event Dates: RBI repo rate announcement official
- Total trading Days: 2406 daily observations
- Event Observations: 147 abnormal return observations derived from a (-3, +3) event window

Further, repo rate announcements are classified into rate cuts and rate hikes to examine asymmetric market reaction.

Data Collection

Data type	Variable description	Frequency	Data Source
Repo rate	Repo announcement dates and policy decisions (Rate Cut / Hike)	Bi-monthly policy announcement	Database on Indian economy (DBIE)
Nifty 50 index	Daily closing price	Daily	www.nseindia.com

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This approach is well-suited to short-horizon event studies that isolate immediate market reactions. Abnormal returns (AR) are computed as the difference between actual and expected returns. To assess the aggregate market response, the study computes Average

Abnormal Returns (AAR) for each day in the event window and Cumulative Average Abnormal Returns (CAAR) over the entire window.

Results and Discussion:

This section presents the study's empirical findings on the stock market's response to Reserve Bank of India (RBI) repo rate announcements. The analysis proceeds in stages, including descriptive statistics, abnormal return behavior, robustness tests, and regression-based event study results.

Summary Statistics

Table 1: NIFTY 50 Daily Returns

Observations	Mean	Median	Std. Dev	Min	Max	Skewness	Kurtosis
2406	0.0005	0.0007	0.0102	-0.1390	0.0840	-1.4602	23.2193

Table 2: Abnormal Returns (−3, +3 Event Window)

Observations	Mean	Median	Std. Dev.	Min	Max	Skewness	Kurtosis
147	0.0007	0.0000	0.0129	-0.0434	0.0655	0.7672	5.4829

Table 3: Abnormal Returns by Policy Type

Policy Type	N	Mean AR	Median	Std. Dev.	Min	Max	Skewness	Kurtosis
Rate Cut	91	0.0016	0.0003	0.0149	-0.0434	0.0655	0.7257	3.9965
Rate Hike	56	-0.0007	-0.0002	0.0084	-0.0264	0.0227	-0.5087	1.7345

Table 4: AAR

Event Day	AAR	t-stat	p-value
−3	-0.0006	-0.22	0.8260
−2	0.0032	0.84	0.4085
−1	0.0027	1.12	0.2749
0	0.0001	0.06	0.9507
+1	-0.0055	-1.93	0.0673*
+2	0.0058	2.09	0.0496**
+3	-0.0008	-0.31	0.7595

* 10% level, ** 5% level

Table 5: CAAR

Event Day	CAAR
−3	−0.0006
−2	0.0026
−1	0.0053
0	0.0054
+1	−0.0001
+2	0.0057
+3	0.0049

Table 6: Regression-Based Event Study Results

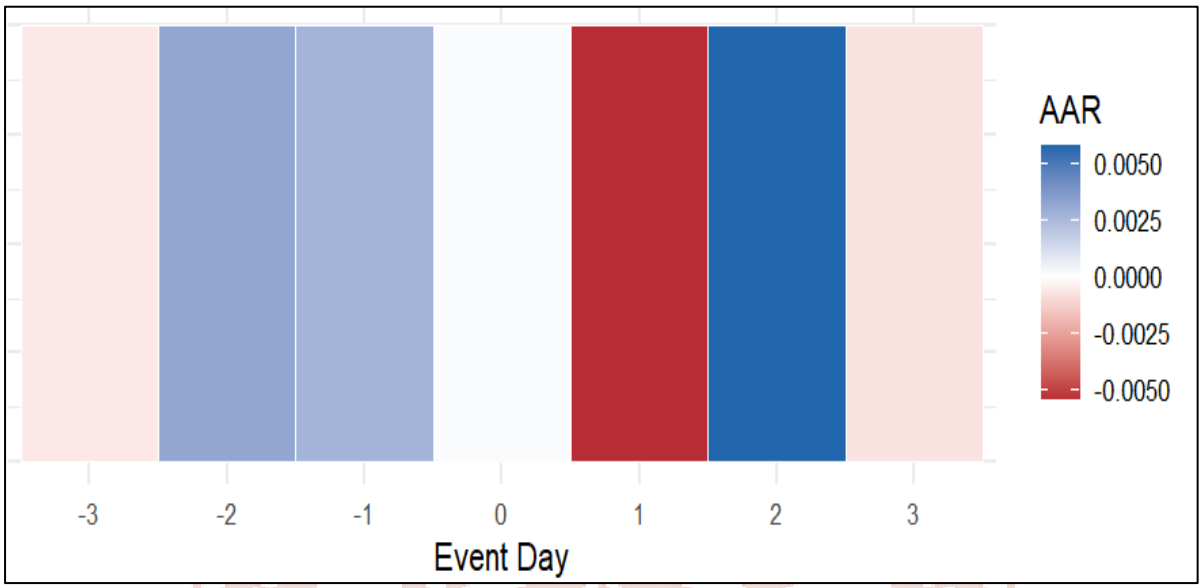
Model	Variable	Coef.	p-value
All Events	D2	0.0065	0.0919*
Rate Hikes	Dm3	-0.0043	0.0026***
Rate Hikes	D1	-0.0071	0.0541*
Interaction	D2	0.0070	0.0657*

From the above tables, it is observed that Table 1 shows that daily NIFTY 50 returns over the entire sample (2,406 observations) have an insignificant (small) mean but high fluctuations (volatility) strong negative skewness, and kurtosis which is extreme, indicating recurrent sharp market movements. When the analysis is restricted to the event window (Table 2, 147 observations), abnormal returns remain close to zero on average but become more volatile, suggesting that repo rate announcements are periods of heightened market uncertainty. Table 3 indicates an important that repo rate cuts are connected with positive mean abnormal returns (0.16%), whereas rate hikes are related with negative mean abnormal returns (−0.07%). This difference suggests that markets respond more favorably to easing policies than to tightening ones, a pattern that becomes clearer in later results.

The short-term market reaction is presented in Tables 4–6 and Figures 1–4. Table 4 presents that abnormal returns on the event days are insignificant (statistically), this reflects no solid immediate reaction on the repo announcement day (Day 0, p =0.9507). But Day +2 mentioned a positive significant abnormal return (AAR=0.58%, p = 0.0496), while Day +1 shows a weakly significant negative reaction (p = 0.0673). This pattern suggests a delayed market response, with investor's gradually processing policy information. Table 5 confirms this pattern: CAAR rises to the announcement day, dips on Day +1, and then recovers sharply by Day +2. Regression results in Table 6 strengthen these findings. The positive coefficient for D2 in the "All Events" model (p ≈ 0.09) confirms a delayed positive response. In contrast, the

highly significant negative coefficient for D−3 under rate hikes (p = 0.0026) suggests that markets anticipate tightening actions even before announcements.

Figure 1. Event-Time Heatmap of Average Abnormal Returns



Visually, it is also summarized in Figures 1–3, which show post-announcement volatility, a stronger positive CAAR path for rate cuts, and a persistently negative CAAR for rate hikes. Overall, the evidence suggests that RBI repo rate announcements affect equity markets in a delayed and asymmetric manner, with clearer and more positive responses to rate cuts than to rate hikes.

Figure 2. CAAR with 95% Confidence Bands

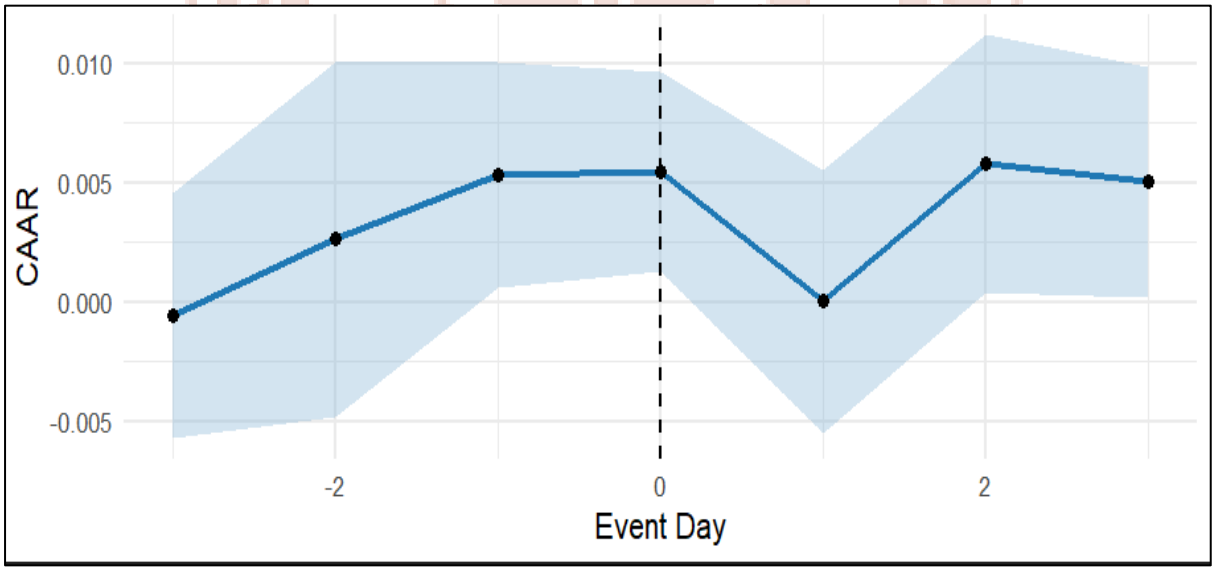
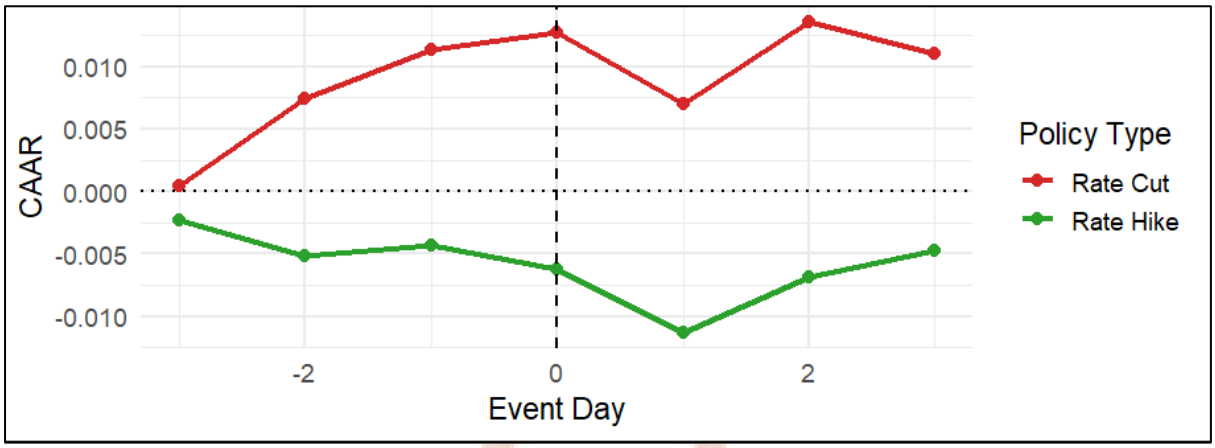


Figure 3. Repo Rate Announcements (around CAAR)



Overall, this study finds that RBI repo rate announcements do not trigger an immediate reaction in the stock market on the announcement day, saying that markets gradually absorb monetary policy details. AAR is insignificant on the event day. But positively abnormal return appears on the second day after the announcement (Day +2, $p < 0.05$), this indicates a slow or delayed market response.

In nutshell, finding reflects that RBI repo rate announcement not influence immediately to equity market. Instead, the market adjusts there absorb information gradually. Further it is noted that, figure 3, clearly indicate that, second day after the announcement of repo rate, the market reacts or shows a positive abnormal return.

Conclusion:

This study reveals that the Indian equity market responds to RBI repo rate announcements in gradual manner rather than with an immediate reaction. Investors take time to interpret and process monetary policy signs, which explains why meaningful abnormal returns emerge only after the announcement, mostly following rate cuts. The market reacts asymmetrically, rewarding policy easing while responding more cautiously and negatively to rate hikes. These findings suggest that RBI communication is shaping the investor sentiment and that monetary policy effects unfold over a short post-announcement window. In simple terms, markets listen carefully to the RBI but react cautiously.

Limitations of the study:

The study has some limitations that should be known. First, the analysis concentrates exclusively on the NIFTY 50 index, which comprises large-cap firms and may not fully capture responses in mid-cap or small-cap listed shares, where monetary policy effects could differ in magnitude or timing. Second, the event study is limited to a short event window (−3, +3), which, while appropriate for isolating announcement effects, may not capture longer-term

market adjustments. Third, the expected return estimation relies on a mean-adjusted model, which assumes linear (constant) expected returns over the event window and does not control for broader market or macroeconomic factors.

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