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DO MONETARY POLICY ANNOUNCEMENTS AFFECT STOCK MARKET PERFORMANCE: EVIDENCE FROM EMERGING ECONOMY

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Abstract *This study aims to examine the effect of monetary policy announcements on returns in the Indian stock market. An event study methodology is employed to evaluate the influence of such announcements. The research utilises daily time series data from broad market indices like the Nifty 50, Nifty 100, Nifty 200, and Nifty 500 to represent the Indian stock market, alongside sectoral indices including Nifty Auto, Nifty Bank, Nifty Financial Services, Nifty FMCG, Nifty IT, Nifty Media, Nifty Metal, Nifty Pharma, Nifty Private Bank, Nifty PSU Bank, and Nifty Realty. The results reveal that a reduction in the repo rate announcement leads to a negative effect on broad market indices on the announcement day. Similarly, an announcement of an unchanged repo rate also causes a negative impact, while an increase in the repo rate initially has a positive effect, although this impact diminishes as the stock composition of the indices grows. Overall, the study suggests that stock market returns are largely unaffected by changes in monetary policy rates or reserve requirements.*

Keywords: *Monetary Policy, NSE, Broad Market and Sectoral Indices, Repo Rate*

JEL Classification: *E4, E5, G1, G2, G4*

INTRODUCTION

Investors are always seeking to maximise their wealth in the stock market by trading shares at the right value, price, and time. To achieve this, they typically engage in a range of activities, such as analysing market trends, studying company financials, and monitoring news and events that may impact their investments. Factors like demand and supply, interest rates, dividend decisions, economic conditions, political climate, government policies, global incidents and market trends can affect the decisions of investors regarding the buying and selling of their investments (Singh & Balasubramanian, 2022; Pathak & Kumar, 2024).

Modern financial theories suggest that share prices can fluctuate due to the introduction of new information into the market (Rahman & Mohsin, 2011). This information can include financial news, corporate news, market announcements, monetary policy announcements, analysts' forecasts, and the expectations and opinions of investors (Strycharz et al., 2018).

Market participants' expectations significantly influence how stock returns react to monetary policy announcements (Smales & Lucey, 2019). According to modern financial theories, such as the efficient market hypothesis, asset prices fully reflect all available information, including expectations about future events and market conditions (Raines & Leathers, 1996; Ayushman et al., 2023). Consequently, both anticipated and unforeseen news regarding monetary policy announcements and macroeconomic factors can significantly affect asset returns. Such news can alter investors' expectations regarding future cash flows and dividend distributions (Khuntia & Hiremath, 2019; Islam & Habib, 2016).

Although extensive research has been conducted on the connection between monetary policy announcements and stock market performance, several areas remain unexplored, indicating the need for further investigation. Firstly, much of the research on the topic has focused on the United States and other developed economies (Bomfim, 2003; Bernanke & Kuttner, 2005; Gertler & Karadi, 2015). The relationship

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between monetary policy and stock market performance may vary in emerging economies compared to other regions globally. Additionally, studies focused on countries like India are narrow in scope Research by Prabu et al. (2020) and Khuntia and Hiremath (2019) has examined the effects of monetary policy announcements on broad market indices like the S&P CNX Nifty 50 and BSE Sensex, but has not investigated their influence on sector-specific indicators. However, sectoral indicators are important as they provide a more detailed perspective of the market, revealing the performance of specific sectors like banking, technology, or energy. In this context, the present research seeks to examine the effects of monetary policy announcements on the Indian stock market—a topic of considerable debate among investors and scholars. Key monetary policy decisions, such as adjustments to interest rates and reserve requirements, play a crucial role in driving economic activity and can significantly influence stock prices (Deng et al., 2022). Therefore, it is necessary to explore the relationship between monetary policy announcements and the stock market's response to design profitable trading strategies (Woo et al., 2020).

This study aims to examine the market's response to changes in monetary policy rates and reserve requirements, whether they remain unchanged, are tightened, or eased to regulate the flow of money in the economy. It explores the connection between the Reserve Bank of India's (RBI) monetary policy rates and reserve requirements and the performance of the Indian stock market. Specifically, the study considers four proxy indices of the stock market (Nifty 50, Nifty 100, Nifty 200, and Nifty 500) and selected sectoral indices. The study covers 11 years, from 01 April 2009 to 30 April 2020, which includes the tenures of four RBI governors and a shift in governance from the United Progressive Alliance (UPA) to the National Democratic Alliance (NDA). The study also covers significant events during this period, such as demonetisation, the biggest reformation of the Indian tax system post-independence, and the ongoing pandemic crisis.

THEORETICAL BACKGROUND AND REVIEW OF LITERATURE

Monetary policy is a vital instrument employed by central banks to shape economic activity through the adjustment of interest rates, inflation control, and liquidity management in the financial system. The connection between monetary policy and stock market performance has been the focus of considerable academic research over time. According to traditional economic theory, stock markets react to shifts in monetary policy, as these policies can affect corporate earnings, investor expectations, and discount rates, all of which are crucial factors influencing stock prices (Benchimol et al., 2023). The link between monetary policy announcements and stock market returns has been extensively examined using various methodologies. Most studies have employed either a VAR model or an event-study approach to explore this relationship. Studies such as Jensen et al. (1996) and Jensen and Mercer (2002) concluded that monetary easing has a significant positive impact on stock market returns through the VAR framework. This argument is also supported by the studies of Chen (2007) and Agarwal (2007), as their studies also found a statistically significant impact of monetary policy announcements on stock prices. On the contrary, Bhattacharyya and Sensarma (2008) concluded that there is no impact of monetary policy on stock prices. Researchers such as Prabu et al. (2020) and Ibrahim (2005) carried out sectoral analyses and concluded that the banking and financial services sector is significantly impacted by monetary policy announcements while there is an insignificant impact on the media, metal, pharma, IT, FMCG, energy, and utilities sectors.

Durham (2005) investigated whether the relationship between monetary policy and stock market performance had evolved over time. The study utilised data from 16 countries on a quarterly and monthly basis, covering 45 years from 1956 to 2000. Key variables included the real federal funds rate for the U.S. and the real discount rate for other countries. Beyond analysing the impact of monetary policy changes on the stock market, the study also assessed the economic drivers behind these reactions. The findings revealed that sectors such as energy and utilities were minimally affected by monetary policy shifts, whereas the high-tech and telecommunications sectors experienced significant impacts.

Lakdawala (2021) examines how U.S. monetary policy decisions influence Indian financial markets. By utilising high-frequency financial data and a time-varying parameter approach, the study demonstrates that U.S. monetary policy had a significant influence on Indian stock markets, even prior to the implementation of unconventional tools such as quantitative easing. The effects have intensified over time, with U.S. monetary shocks being transmitted through both surprise changes in policy rates and an uncertainty channel.

This relationship becomes even more intriguing when studied within the context of emerging economies, where financial markets are less efficient and the impact of monetary policy is often more pronounced due to the greater sensitivity of financial systems to external shocks and internal policy changes.

Emerging economies present unique dynamics due to their evolving financial markets, higher volatility, and vulnerability to both domestic and global economic changes. These economies are often more susceptible to policy announcements because of the importance of maintaining

investor confidence in a market with lower liquidity and greater exposure to political and economic risks. Therefore, the impact of monetary policy announcements in these economies may differ significantly from that in developed markets. Key studies have focused on the interaction between monetary policy announcements and stock market performance, focusing on emerging economies.

Agarwal (2007) presents evidence that stock prices are affected by monetary policy announcements that carry important informational content. An event study approach was conducted on 50 diversified stocks representing 25 sectors of the Indian economy. Bhattacharyya and Sensarma (2008) also examined how changes in monetary policy instruments, such as the cash reserve ratio, bank rate, and reverse repo rate, affect four sectors of the Indian financial markets, which comprise the money market, foreign exchange market, government securities market, and the stock market.

Sasidharan (2010) examined stock market behaviour in response to an announcement of a change in monetary policy stance using exploratory data analysis on the days preceding and succeeding the announcement. The Paper focused on three major monetary policy tools: the CRR, the Bank Rate, and the repo rate. A study by Prabu et al. (2016) investigated the effects of Indian monetary policy announcements on stock indices, including the NSE Nifty, the BSE Sensex, and the Bankex, employing both the Identification through Heteroscedasticity approach and the Event Study approach. Meanwhile, Suhaibu et al. (2017) assessed the influence of monetary policies on stock market performance in Ghana, Namibia, Zambia, Nigeria, Kenya, Egypt, South Africa, Morocco, Mauritius, Botswana, Ivory Coast, and Zimbabwe, using indicators such as the inflation rate, GDP growth, real interest rate, S&P Global Equity Indices, and money and quasi-money growth (M2). The findings indicated that the relationship between the stock market and monetary policies is bidirectional.

Vithessonthi and Techarongrojwong (2013) examined the effects of monetary policy announcements on stock prices in Thailand. Utilising an event study methodology, the research analysed how the stock market responded to policy announcements made by the Bank of Thailand. The results indicate that monetary policy announcements significantly influence stock prices, with both the direction and magnitude of the impact varying based on the specifics of the announcement.

A study by Khuntia and Hiremath (2019) examined the Indian stock market's response to monetary policy announcements. The Study found that the market reacts to both scheduled and unscheduled announcements, with unscheduled announcements having a more pronounced effect. The study also highlighted that the banking, financial services, and auto sectors are particularly sensitive to these announcements.

DATA AND VARIABLES

The present Research uses the event study methodology, which is a commonly used approach in finance and economics to examine the effects of an event on stock returns. In this case, the event of interest is the announcement of Monetary Policy by the government or central bank. The study covers a period of 11 years, from 01 April 2009 to 30 April 2020.

Stock Market Variables

In this study, we collected secondary data about Stock market variables and Monetary policy variables. For a stock market proxy the study uses a comprehensive set of indices to capture the performance of the Indian stock market and different sectors within it. The broad market indices such as the Nifty 50, Nifty 100, Nifty 200, and Nifty 500 are selected as proxies for overall stock market performance, while the sectoral indices, such as the Nifty Auto, Nifty Bank, Nifty Financial Services, Nifty FMCG, Nifty IT, Nifty Media, Nifty Metal, Nifty Pharma, Nifty Private Bank, Nifty PSU Bank, and Nifty Realty are selected as proxies for the performance of individual sectors. The study consists of daily time series data collected from the official NSE website, spanning the period from 1st April 2009 to 30th April 2020. It is important to note that although the Nifty Metal Index and Nifty Financial Services Index were introduced on 12th July 2011 and 7th September 2011, respectively are also considered in the study. Taking this into consideration, the observations for each of the broad market indices and sectoral indices are 2744, except in the case of Nifty Metal returns, which has 2,176 observations, and the Nifty Financial Services which has 2,138 observations. The returns of all the Nifty indices have been computed by transforming the daily closing prices into logarithmic returns for normality purposes. This is a common practice in financial research as logarithmic returns generally normally distributed than simple returns, which can be skewed and have fat tails.

Monetary Policy Variables

The study collected data on all the major monetary policy rates, including the Liquidity Adjustment Facility (LAF) (Repo Rate and Reverse Repo Rate, Bank Rate, Marginal Standing Facility (MSF) rate, and reserve requirements such as Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR). By collecting data on all monetary policy rates,

the study aims to provide a comprehensive analysis of the impact of monetary policy on the Indian stock market. The data on monetary policy rates and reserve requirements were collected from the official RBI website, which is a good indicator of the study's reliability. It is also worth noting that the study considers the introduction of the MSF rate, which was based on the Repo rate, in May 2011.

The study examines the day-effect, pre-effect, and post-effect by formulating dummies represented by D1, D2, and D3, respectively. A window period of 5 days before the event and 5 days post-event has been accounted for by considering the day of the announcement considered as the event day. More precisely following hypotheses are formulated and tested.

The following hypotheses are formulated and tested using regression analysis:

H01: Announcement of unchanged monetary policy rates and reserve requirements does not have a significant impact on stock market returns:

H01a: Announcement of unchanged Repo rate does not have a significant impact on stock market returns.

H01b: Announcement of unchanged Reverse Repo rate does not have a significant impact on stock market returns.

H01c: Announcement of unchanged Marginal Standing Facility (MSF) rate does not have a significant impact on stock market returns.

H01d: Announcement of unchanged Bank rate does not have a significant impact on stock market returns.

H01e: Announcement of unchanged Cash Reserve Ratio (CRR) does not have a significant impact on stock market returns.

H01f: Announcement of unchanged Statutory Liquidity Ratio (SLR) does not have a significant impact on stock market returns.

H02: Announcement of increased monetary policy rates and reserve requirements does not have a significant impact on stock market returns:

H02a: Announcement of an increase in the Repo rate does not have a significant impact on stock market returns.

H02b: Announcement of an increase in Reverse Repo rate does not have a significant impact on stock market returns.

H02c: Announcement of increase in Marginal Standing Facility (MSF) rate does not have a significant impact on stock market returns.

H02d: Announcement of an increase in Bank rate does not have a significant impact on stock market returns.

H02e: Announcement of an increase in Cash Reserve Ratio (CRR) does not have a significant impact on stock market returns.

H02f: Announcement of increase in Statutory Liquidity ratio (SLR) does not have a significant impact on stock market returns.

H03: Announcement of decreased monetary policy rates and reserve requirements does not have a significant impact on stock market returns:

H03a: Announcement of a decrease in the Repo rate does not have a significant impact on stock market returns.

H03b: Announcement of a decrease in the Reverse Repo rate does not have a significant impact on stock market returns.

H03c: Announcement of decrease in the Marginal Standing Facility (MSF) rate does not have a significant impact on stock market returns.

H03d: Announcement of a decrease in the Bank rate does not have a significant impact on stock market returns.

H03e: Announcement of a decrease in the Cash Reserve Ratio (CRR) does not have a significant impact on stock market returns.

H03f: Announcement of a decrease in the Statutory Liquidity Ratio (SLR) does not have a significant impact on stock market returns.

Research Method

To analyse the properties of the selected variables in terms of mean, median, standard deviation, skewness, and kurtosis, the Jarque-Bera test for normality was used. We also report the number of observations for each variable.

One of the prerequisites for constructing a successful model for time series analysis is ensuring the stationarity of data, which enhances its accuracy and reliability. One of the most frequently used tests for stationarity of data is the Unit Root Test. This paper employs the Augmented Dickey-Fuller (ADF) test to check for data stationarity.

To find the impact of monetary policy rate and reserve requirement announcements on the stock market returns, the Least Squares Regression has been applied. The window period consists of 5 days before the announcement and 5 days post-announcement for which the dummy variable assumes the value of unity as well as on the day of the announcement. The dummy variable included takes the value 0 for the rest of the day. By including the dummy variable, all kinds of changes are allowed which occurred within the window period and are considered in the model

(Asteriou et al., 2013). This suggests that there is an impact of the announcement on the stock market returns and vice-versa. The least square regression model applied is presented in Equation 1.

$$LNIR = \alpha 1 + \beta 1\ LNIRD1 + \lambda 1\ LNIRD2 + \gamma 1\ LNIRD3$$

Equation 1

Where

- LNIR (Equation 1) represents the Log of a particular Index Returns.
- α1 represents the intercept term.
- β1 is the slope coefficient representing the effect on the date of the event.
- λ1 is the slope coefficient representing the effect before the event.
- γ1 is the slope coefficient representing the effect after the event.
- The log of a particular index accompanied by a subscript 1 (i.e., LNIRD1) represents a dummy variable for the effect on the date of the event.
- The log of a particular index accompanied by a subscript 2 (i.e., LNIRD2) represents dummy variables for the effect before the event.
- The log of a particular index accompanied by a subscript 3 (i.e., LNIRD3) represents a dummy variable for the effect after the event.
- ε1 symbolises the disturbance term of the model.

RESULTS AND DISCUSSION

Before we proceed to design the statistical model, it is important to perform a prior analysis to understand the properties of the variables under study. Table 1 provides a summary of the returns of the selected variables. The Mean and Median are used as measurements of performance; a higher measurement is always favourable.

The Standard deviation is a metric that reflects the dispersion of return relative to the mean. A lower dispersion signifies that the returns are closely aligned with the mean, while a higher standard deviation indicates a wider spread of returns. The return of Nifty Realty and Nifty PSU Bank exhibit a higher standard deviation in comparison to other indices. Skewness, on the other hand, assesses the relationship among the mean, median, and mode. It determines the extent to which a distribution differs from the normal distribution. As can be seen from the above table Nifty50 return, Nifty100 returns, Nifty Auto return and Nifty PSU Bank return are positively skewed; whereas Nifty200 return, Nifty500 returns, Nifty Bank return, Nifty Financial Services returns, Nifty FMCG return, Nifty IT returns, Nifty Media return, Nifty Metal return, Nifty Pharma returns, Nifty Private Bank return and Nifty Realty return are negatively skewed.

Jarque-Bera is a test statistic performed to check the normality of returns. Since the p-values for all the indices are less than 0.01, therefore it can be concluded that the data is not normally distributed.

The number of observations is 2744 for all indices except for Nifty Financial Services Returns and Nifty Metal Returns which were launched on 7th September 2011 and 12th July 2017. This paper employs the ADF test to check for the stationarity of data. The results are tabulated by formulating the hypothesis as under: The ADF test results depicted in Table 2, clearly imply that the null hypothesis is rejected as the p-values are less than 0.01 at a 1% level of significance. Thus, we conclude that the data does not have a Unit Root, implying that the data is stationary at level in the case of all the indices.

The impact of monetary policy announcements on stock market return is analysed in three phases. First, when there is an announcement of no change in monetary policy rates and reserve requirements; second, when there is an announcement of an increase in monetary policy rates and reserve requirements; and third, when there is an announcement of a decrease in monetary policy rates and reserve requirements. Under each of these, the impact of each monetary policy rate and reserve requirement has been analysed across both the broad market-based indices as well as sectoral indices for each monetary policy rate and reserve requirement. The results of the analysis are presented in Tables 3, 4, and 5.

Table 3 highlights the regression coefficients for an announcement of unchanged monetary policy rates and reserve requirements across the broad market and sectoral indices. In the case of the repo rate, Nifty Auto returns have a significant positive impact on the post-announcement day (rejects H01a at a 10% level of significance). H01b is rejected at a 10% level of significance indicating that Nifty 500, Nifty Auto, Nifty Metal and Nifty Pharma have a positive impact on stock returns as well as Nifty FMCG (H01b is rejected at a 5% significance level) when there is an announcement of unchanged reverse repo rate on the post-announcement day. Nifty FMCG and Nifty Metal have a positive impact due to an unchanged MSF (H01c is rejected at the 10% and 5% significance levels, respectively). The impact of announcement of an unchanged bank rate has a positive impact only on the Nifty Pharma sector post-announcement day (H01d is rejected at 10% level of significance). An announcement of unchanged CRR has a negative impact on Nifty PSU Banks on the day of the

announcement (rejection of H01e at 10% significance level). The unchanged SLR announcement led to Nifty 50, Nifty 100, Nifty200, Nifty PSU Bank (rejection of H01f at the 10% level of significance) reacting negatively to the news announcement as well as Nifty Bank and Nifty Private Bank (rejection of H01f at 5% level of significance) on the day such an announcement was made.

Table 4 gives an overview of the regression results when there is an announcement of an increase in monetary policy rates and reserve requirements (or tightening of monetary policies). An increase in the repo rate, Bank rate, and CRR does not have any impact on broad and sectoral indices (fails to reject H02a, Ho2d, and H02f at the 1%, 5%, and 10% levels of significance). On the day of the announcement of an increase in reverse repo rate, Nifty Bank and Nifty Private Bank are both negatively impacted (rejection of H02b at 10% significance level). The announcement of an increase in the MSF has a negative impact on Nifty Realty returns post the day of the announcement (rejection of H02c at 10% significance level). Nifty 50, Nifty 100 and Nifty FMCG (H02f is rejected at 5% significance level) are positively impacted as well as Nifty PSU Banks (H02f is rejected at 5% significance level), so also Nifty Bank and Nifty Private Banks (H02f is rejected at 1% significance level). Since the introduction of Nifty Financial Services and Nifty Metal, there has been no increase in CRR and SL.

Table 1: Summary Statistics of Broad Market and Sectoral Indices of NSE

Index	Mean	Median	Standard Deviation	Skewness	Kurtosis	Jarque-Bera	Observations
Nifty50 Returns	0.04311	0.05025	1.19013	0.20987	26.60305	63715.68***	2744
Nifty100 Returns	0.04598	0.06977	1.17888	0.11806	25.58865	58344.62***	2744
Nifty200 Returns	0.04491	0.09072	1.16826	-0.02628	24.89000	54785.64***	2744
Nifty500 Returns	0.04557	0.10210	1.15146	-0.14274	24.54423	53077.58***	2744
Nifty Auto Returns	0.05398	0.07038	1.41863	0.05246	14.36808	14776.93***	2744
Nifty Bank Returns	0.06015	0.07362	1.60989	-0.05760	16.97392	22327.44***	2744
Nifty Financial Services Returns	0.04533	0.06256	1.44738	-0.90355	17.21790	18299.00***	2138
Nifty FMCG Returns	0.06268	0.08000	1.15028	-0.13599	11.43620	8145.507***	2744
Nifty IT Returns	0.06581	0.06791	1.40176	-0.32440	13.76637	13301.04***	2744
Nifty Media Returns	0.01585	0.03835	1.59852	-0.57110	12.97511	11525.65***	2744
Nifty Metal Returns	-0.03279	-0.01317	1.76028	-0.21376	6.16075	922.3605***	2176
Nifty Pharma Returns	0.05264	0.06108	1.21660	-0.03037	10.99786	7313.843***	2744
Nifty Private Bank Returns	0.07613	0.06865	1.63516	-0.13431	18.57311	27736.59***	2744
Nifty PSU Bank Returns	-0.00606	0.01872	2.09154	0.76842	15.21578	17331.46***	2744
Nifty Realty Returns	-0.00239	0.10797	2.30499	-0.06294	8.18605	3076.814***	2744

Source: Author's compilation.

(Note *** denotes a 1% level of significance.

Table 2: Results of the ADF Test

Index	t-Statistic	p-Value
Nifty50 Returns	-19.02851	0.0000***
Nifty100 Returns	-18.92748	0.0000***
Nifty200 Returns	-18.68794	0.0000***
Nifty500 Returns	-18.47361	0.0000***
Nifty Auto Returns	-48.74477	0.0001***
Nifty Bank Returns	-48.03330	0.0001***
Nifty Financial Services Returns	-44.17850	0.0001***

Index	t-Statistic	p-Value
Nifty FMCG Returns	-53.48039	0.0001***
Nifty IT Returns	-52.85952	0.0001***
Nifty Media Returns	-50.69952	0.0001***
Nifty Metal Returns	-45.92880	0.0001***
Nifty Pharma Returns	-49.99157	0.0001***
Nifty Private Bank Returns	-48.04292	0.0001***
Nifty PSU Bank Returns	-49.01057	0.0001***
Nifty Realty Returns	-47.75238	0.0001***

Source: Author's compilation (Note: *** denotes 1% level of significance).

Table 3: Regression Results of Unchanged Monetary Policy Rates and Reserve Requirements

Rate	Indices	Nifty 50	Nifty 100	Nifty 200	Nifty 500	Nifty Auto	Nifty Bank	Nifty F.S	Nifty FMCG	Nifty IT	Nifty Media	Nifty Metal	Nifty Pharma	Nifty Private Bank	Nifty PSU Bank	Nifty Realty
Repo	**Pre**	0.01	0.02	0.01	0.02	0.03	0.07	-0.02	-0.08	0.11	0.01	-0.01	-0.07	0.08	0.08	0.17
	Day	0.04	0.06	0.05	0.06	0.21	0.00	-0.10	-0.03	0.23	0.12	0.06	0.03	0.06	-0.17	0.31
	Post	0.12	0.13	0.13	0.13	0.18*	0.12	0.10	0.12	0.11	0.07	0.20	0.12	0.11	0.09	0.14
Reverse Repo	**Pre**	0.02	0.02	0.01	0.01	0.01	0.01	-0.04	-0.04	0.16	-0.04	-0.06	-0.08	0.02	-0.03	0.09
	Day	0.03	0.05	0.03	0.05	0.14	0.03	-0.11	-0.04	0.25	-0.08	0.15	0.09	0.08	-0.09	0.24
	Post	0.14	0.14	0.14	0.14*	0.18*	0.08	0.06	0.18**	0.14	0.09	0.25*	0.19*	0.07	0.02	0.13
MSF	**Pre**	-0.05	-0.05	-0.05	-0.05	-0.04	-0.04	-0.02	-0.07	0.00	-0.02	0.00	-0.14	-0.03	-0.03	0.03
	Day	-0.06	-0.04	-0.03	-0.02	0.06	-0.08	-0.04	-0.10	-0.01	-0.24	0.07	0.22	-0.05	-0.21	0.49
	Post	0.14	0.14	0.15	0.15	0.17	0.13	0.14	0.18*	0.10	0.16	0.30**	0.06	0.11	0.11	0.19
Bank Rate	**Pre**	-0.01	-0.01	-0.01	-0.01	-0.02	0.01	-0.09	-0.04	0.08	-0.07	-0.12	-0.06	0.02	-0.04	0.01
	Day	-0.11	-0.09	-0.10	-0.09	-0.06	-0.19	-0.08	-0.15	0.00	-0.10	0.12	0.02	-0.15	-0.22	0.07
	Post	0.06	0.06	0.05	0.05	0.07	0.08	0.02	0.12	0.03	0.04	0.21	0.14*	0.08	0.04	-0.12
CRR	**Pre**	-0.01	-0.01	-0.02	-0.01	-0.03	0.01	-0.03	0.01	0.04	-0.12	-0.13	-0.06	0.02	-0.03	-0.07
	Day	-0.17	-0.16	-0.15	-0.14	-0.11	-0.41	-0.20	-0.15	-0.05	-0.02	0.02	0.02	-0.38I	-0.49*	0.00
	Post	0.02	0.02	0.01	0.01	0.04	0.00	-0.02	0.02	0.02	0.08	0.09	0.04	0.00	-0.04	-0.17
SLR	**Pre**	0.05	0.05	0.04	0.03	0.06	0.11	0.08	0.01	0.07	-0.05	-0.10	-0.06	0.11	0.15	0.00
	Day	-0.27*	-0.26*	-0.26*	-0.24	-0.24	-0.48**	-0.29	-0.18	-0.22	-0.15	-0.19	0.00	-0.43**	-0.53*	-0.15
	Post	0.01	0.01	0.01	0.00	0.04	-0.01	-0.07	0.11	0.00	0.09	0.06	0.07	-0.01	0.00	-0.12

Source: Author's compilation.

(Note: ** denotes a 5% level of significance, * denotes a 10% level of significance).

Table 4: Regression Results for Increasing Monetary Policy Rates and Reserve Requirements

	Indices	Nifty 50	Nifty 100	Nifty 200	Nifty 500	Nifty Auto	Nifty Bank	Nifty F.S	Nifty FMCG	Nifty IT	Nifty Media	Nifty Metal	Nifty Pharma	Nifty Private Bank	Nifty PSU Bank	Nifty Realty
Repo	**Pre**	-0.03	-0.05	-0.07	-0.07	-0.15	0.02	0.03	-0.05	-0.05	-0.23	-0.16	-0.08	0.03	0.01	-0.31
	Day	-0.29	-0.26	-0.24	-0.22	-0.15	-0.49	0.15	-0.30	-0.41	0.07	0.70	0.02	-0.55	-0.10	-0.46
	Post	-0.08	-0.07	-0.08	-0.08	-0.11	0.01	-0.25	0.00	-0.14	0.15	-0.20	0.07	-0.02	0.28	-0.38
Reverse Repo	**Pre**	0.00	-0.02	-0.03	-0.03	-0.09	0.07	0.08	-0.02	-0.05	-0.16	-0.01	-0.07	0.08	0.11	-0.14
	Day	-0.37	-0.33	-0.32	-0.30	-0.29	-0.61*	-0.17	-0.39	-0.41	-0.05	0.32	-0.07	-0.66*	-0.40	-0.52
	Post	-0.07	-0.06	-0.07	-0.07	-0.09	0.01	-0.18	0.00	-0.18	0.14	-0.19	0.08	-0.01	0.27	-0.30
MSF	**Pre**	-0.12	-0.15	-0.17	-0.18	-0.28	-0.25	-0.13	0.01	0.06	-0.38	-0.18	0.04	-0.22	-0.31	-0.55
	Day	-0.30	-0.28	-0.25	-0.24	-0.25	-0.83	0.19	-0.13	-0.20	0.18	0.67	0.14	-0.79	-0.39	0.03
	Post	-0.20	-0.19	-0.20	-0.19	-0.23	-0.30	-0.32	0.08	-0.13	0.04	-0.40	0.02	-0.31	-0.06	-0.60*
Bank Rate	**Pre**	0.05	0.04	0.01	-0.01	-0.23	0.10	0.08	0.01	0.25	-0.27	0.10	-0.08	0.06	0.28	-0.32
	Day	0.19	0.23	0.27	0.28	0.43	0.02	0.06	0.50	-0.10	0.31	0.90	0.39	-0.04	0.78	1.05
	Post	0.14	0.15	0.15	0.16	0.17	-0.06	-0.03	0.25	0.30	0.27	-0.14	0.30	-0.13	0.40	0.23
CRR	**Pre**	0.27	0.26	0.21	0.20	0.43	0.56		-0.11	0.09	-0.01		0.06	0.48	0.75	0.54
	Day	0.54	0.54	0.35	0.37	1.11	0.51		0.54	0.67	0.44		0.05	0.99	0.28	-0.66
	Post	0.00	0.02	-0.04	-0.03	0.07	0.17		0.15	-0.01	-0.13		0.22	0.17	0.26	-0.44
SLR	Pre	0.15	0.26	0.30	0.30	0.82	0.66		-0.35	-0.15	0.61		0.41	0.93	0.35	0.95
	Day	2.07*	2.15*	1.91	1.87	1.35	4.58***		1.98*	0.76	1.80		1.16	4.77***	4.59**	1.80
	Post	0.60	0.56	0.64	0.62	1.10*	0.22		0.02	0.93	0.31		0.36	0.20	0.14	-0.30

Source: Author's compilation.

(Note: ** denotes a 5% level of significance, * denotes a 10% level of significance).

Table 5: Regression Results of Decrease in Monetary Policy Rates and Reserve Requirements

Rates	Indices	Nifty 50	Nifty 100	Nifty 200	Nifty 500	Nifty Auto	Nifty Bank	Nifty F.S	Nifty FMCG	Nifty IT	Nifty Media	Nifty Metal	Nifty Pharma	Nifty Private Bank	Nifty PSU Bank	Nifty Realty
Repo	Pre	0.14	0.14	0.14	0.13	0.21	0.13	0.12	0.22*	0.13	-0.08	-0.21	0.00	0.13	0.09	0.03
	Day	-0.47*	-0.49*	-0.49*	-0.48*	-0.76**	-0.94**	-0.57	-0.15	-0.32	-0.43	-0.68	-0.01	-0.83	-1.45***	-0.26
	Post	-0.04	-0.03	-0.05	-0.06	0.01	-0.20	-0.17	0.09	-0.03	-0.01	0.21	0.09	-0.19	-0.45	-0.35
Reverse Repo	Pre	0.11	0.11	0.13	0.12	0.24	0.21	0.15	0.15	0.02	-0.06	-0.22	0.04	0.22	0.26	0.04
	Day	-0.36	-0.38	-0.37	-0.37	-0.45	-0.86**	-0.41	0.00	-0.35	0.01	-0.61	0.08	-0.73*	-1.30**	0.00
	Post	-0.10	-0.10	-0.12	-0.13	-0.04	-0.19	-0.16	-0.04	-0.02	-0.04	0.09	-0.15	-0.17	-0.46*	-0.48*
MSF	Pre	0.16	0.15	0.14	0.13	0.19	0.13	0.18	0.16	0.10	-0.08	-0.14	-0.04	0.15	0.10	0.04
	Day	-0.38	-0.38	-0.39	-0.38	-0.48	-0.73**	-0.50	-0.27	-0.14	-0.27	-0.45	0.00	-0.67*	-1.20*	-0.57
	Post	-0.04	-0.03	-0.03	-0.03	0.04	-0.19	-0.15	0.06	-0.08	0.11	0.14	0.09	-0.20	-0.30	-0.17
Bank Rate	Pre	0.14	0.14	-0.02	0.14	0.24	0.22	0.22	0.11	0.01	-0.03	-0.09	-0.02	0.25	0.28	0.11
	Day	-0.37	-0.36	-0.15	-0.36	-0.33	-0.76**	-0.46	-0.23	-0.19	-0.04	-0.47	0.02	-0.70*	-1.25***	-0.54
	Post	-0.07	-0.06	0.01	-0.06	0.03	-0.17	-0.12	-0.06	-0.08	0.13	0.07	-0.08	-0.16	-0.25	-0.18
CRR	Pre	0.34	0.33	-0.02	0.27	0.37	0.36	0.47*	-0.05	0.48*	0.27	0.09	-0.06	0.36	0.43	0.25
	Day	-0.36	-0.34	-0.15	-0.32	-0.59	0.14	-0.22	-0.22	-0.42	-0.70	-0.30	0.19	0.09	-0.11	-0.11
	Post	0.14	0.18	0.01	0.19	0.23	-0.07	-0.07	0.79***	0.08	0.07	0.23	0.61***	-0.08	0.00	0.27
SLR	Pre	-0.02	-0.03	-0.03	-0.03	-0.11	-0.11	-0.13	0.02	0.10	-0.20	-0.08	-0.07	-0.09	-0.23	-0.02
	Day	0.13	0.14	0.14	0.14	0.34	-0.08	0.09	-0.04	0.50	0.16	0.53	0.10	-0.04	-0.31	0.33
	Post	0.08	0.08	0.07	0.08	0.07	0.05	0.06	0.00	0.01	0.03	0.33	0.17	0.03	-0.04	-0.08

Source: Author's compilation.

(Note:*** denotes 1% level of significance ** denotes 5% level of significance, * denotes 10% level of significance).

Table 5 depicts the regression coefficients of an announcement of a decrease in monetary policy rates and reserve requirements. The Nifty FMCG has a positive impact before the announcement (with the rejection of H03a at 10% level of significance). While the Nifty 50, Nifty 100 and Nifty 200 have a negative impact on the day of the announcement (as H03a is rejected at a 10% significance level). Also, Nifty Auto and Nifty Bank (with the rejection of h03a at 5% significance level) and Nifty PSU Bank returns (H03a is rejected at 1% significance level) are negatively impacted by a decrease in the Repo rate on the day of such an announcement. H03b is rejected at a 5% level of significance on the announcement day, in the case of Nifty Bank, Nifty PSU Bank and at a 10% significance level in the case of Nifty Private Bank, all of which are negatively impacted. While Nifty PSU Bank and Nifty Realty are negatively impacted after the day of the announcement (rejection of H03b at 10% significance level).

On the day of the announcement of a decrease in the MSF, the Nifty Bank (with the rejection of H03c at 5% significance level), Nifty Private Bank and Nifty PSU Bank (rejection of H03c at 10% significance level) are negatively impacted on the announcement day. H03d is rejected at the 1%, 5%, and 10% for Nifty PSU Bank, Nifty Bank and Nifty Private Banks respectively indicating a negative impact on their returns. In the case of the announcement of a decrease in the CRR, Nifty Financial Services and Nifty IT (with the rejection of H03e at 10% level of significance) have a positive impact before such an announcement. So also, sectors like FMCG and Pharma (rejection of H03e at 1% level of significance) are positively impacted post the day of the announcement, while there is no impact on the day of the announcement. Lastly, there is no impact on the broad market and sectoral returns due to an announcement of a decrease in the SLR.

CONCLUSION, IMPLICATION AND LIMITATIONS

The study attempts to examine the response of the broad market and sectoral indices to the announcements of monetary policy rates and reserve requirements. An announcement in the monetary policy instruments: repo rate, reverse repo rate, MSF, bank rate, CRR, and SLR; whether unchanged or changed were recorded and their impact was analysed on the returns and volatility of the Indian stock market across the indices of the NSE.

The regression model produced insignificant estimates for the majority of the regressions in each case. The broad-based indices showed similarity in behaviour with regard to their response to announcements of monetary policies. While SLR remained unchanged, the broad indices reacted negatively and when SLR increased, their reaction was positive to such a news announcement. However, this impact faded off as there was an increase in the composition of stocks to the index.

It can be concluded that for Nifty Bank returns, Nifty Private Bank returns and Nifty PSU Bank returns; an announcement of expansionary monetary policy rates caused these sectors to react negatively while an announcement of unchanged monetary policy reserve requirements had a positive impact on them. Also, an increase in SLR ensures the solvency of banks thus having a positive impact on the same. Our results are in line with that of (Prabu et al., 2020) who found a significant impact of monetary policies on the banking sector. However, our results are contradictory to the same study which finds a significant positive impact on Nifty Financial Services during the period from 2004 to 2016. The present study covers a wider span of 9 years since the introduction of the Nifty Financial Services index in 2011, which could be the reason for such contradictory results.

The impact on Nifty FMCG, Nifty IT, Nifty Metal and Nifty Pharma returns reacted positively to monetary policy announcements while Nifty Realty returns reacted negatively to such news announcements. Nifty Media returns remained the only sectoral index of NSE that had no significant impact from any such announcement. It is not fair to conclude that the impact on all the indices was equal in magnitude or that all the monetary policy instruments had an impact on every sector as results vary from instrument to instrument and sector to sector. Amongst the policy instruments, an increase in SLR had a positive impact on the Auto, FMCG and Banking sectors. It is important to note that during the entire study period, SLR increased by 100 bps in 2009 after which there was a drop that continues to the present day. An increase in SLR ensures the solvency of banks, probably which could lead to a positive impact on the stock returns of the banking sector. Again, in 2009, the auto sector faced a major crisis due to fuel prices in India and globally, leading to a fall in production.

The implications of the findings of this study are far-reaching and affect various stakeholders within the financial ecosystem. For investors and portfolio managers, the findings offer valuable insights into how different sectors of the Indian stock market react to monetary policy announcements. Knowing that broad market indices may respond negatively to a decrease or unchanged repo rate, while sectoral indices may show varying responses, investors can adjust their portfolios more strategically to either capitalise on potential gains or hedge against risks. Sector-specific insights will enable portfolio managers to employ sector rotation strategies and allocate funds to sectors that are likely to outperform during certain

monetary policy regimes. For corporate managers and CFOs, understanding the relationship between monetary policy announcements and stock market performance allows them to better time capital market activities such as issuing debt or equity. Additionally, companies in interest-sensitive sectors like banking or real estate may need to adjust their financial strategies more quickly in response to rate changes. Policymakers can also benefit from the findings, as they shed light on how the market interprets and reacts to policy announcements. The fact that market reactions are sometimes counterintuitive (e.g., a negative response to a rate cut) underscores the importance of clear communication in monetary policy. The RBI may consider refining its forward guidance to better manage market expectations and reduce unnecessary volatility. Sector-specific effects observed in the study could guide policymakers in crafting more targeted interventions during times of monetary easing or tightening, ensuring that specific sectors, such as banking or manufacturing, receive the necessary support.

This study, while providing meaningful insights into the impact of monetary policy announcements on the Indian stock market, has a few limitations. First, the research is limited to the Indian market, making it difficult to generalise the findings to other emerging or developed economies with differing economic structures, monetary policies, and investor behaviours. Second, the study spans the period from April 2009 to April 2020, which includes significant one-off events such as demonetisation and the onset of the COVID-19 pandemic. These events could have skewed stock market reactions, making it harder to isolate the effects of monetary policy announcements. As a result, some findings might reflect the impact of these events rather than just monetary policy changes. Additionally, the analysis is based on broad and sectoral indices, which offer a high-level view of market behaviour but might mask the diverse reactions of individual stocks or smaller market segments. A deeper exploration of specific industries or companies could provide a more nuanced understanding of monetary policy effects. Finally, the study uses daily data, which might not fully capture the longer-term effects of monetary policy decisions, as market reactions could evolve over weeks or months. Future research could address these limitations by expanding the study to include other economies, using a longer time frame, or exploring individual stock responses to monetary policy announcements.

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