

An Investigation of Monetary Policy Rates and its Impact on Bank's NIFTY Index

Belavadi Nikhil*

Research Scholar, Department of Commerce, School of Business Studies, Central University of Karnataka, Kalaburagi, Karnataka.

Dr Shivakumar Deene

Assistant Professor, Department of Commerce, School of Business Studies Central University of Karnataka, Kalaburagi, Karnataka. e-mail: drdeene@rediffmail.com

Dr.Mallikarjun Naik

Assistant Professor, Dept. of Commerce Karnataka University Post Graduate CenterGadag.

Abstract

Relevance: The stock price inclines to fluctuate when the monetary policy is declared. The monetary policy may have a favourable or adversarial impact on the stock market, and how market players analyse it regarding their expectations.

Purpose: Monetary policy rates will change frequently based on the economic situations. Banks will adopt those changes which can impact the performance of the banks. To know the effectiveness, this study is selected for analysis.

Method: The study uses various data analytical tools like descriptive analysis and statistical tools by which the effectiveness can be analysed between the monetary policy rates and the stock market prices of selected banks in the study.

Result: The findings state the existence of effective of change in policy rates on the stock market price of selected banks. The selected rates except CRR have a significant influence on the price movements of the selected banks.

Conclusion: The Monetary Policy Committee should exercise caution when modifying monetary policy rates, since this can have an impact on the price movements of banks, the nifty index, and other financial institution performance in one way or another.

Keywords: Reserve Bank of India, Monetary Policy Rates, Commercial Banks, Banks Nifty Index, Stock prices.

I. Introduction

The stock market is the accumulation of sellers and buyers of stocks, which are highly vulnerable to change and respond to economic conditions and hence is considered a "Barometer of Indian Economy". The crucial interest rates of the Reserve Bank of India and the stock market volatility will be governed by the monetary policy rates. Banks NIFTY covers 12 commercial banks out of the scheduled commercial banks. Banks NIFTY volatility is influenced by the Reserve Bank of India's monetary policy rates. The 12 banks cover more than 50% of the entire scheduled commercial banks based on capital structure and market coverage. The stock price inclines to fluctuate before and after the monetary policy is declared. The monetary policy may have a favourable or adversarial impact on the stock market, i.e., Banks NIFTY is considered an index reliant on how market players analyse it regarding their expectations. Monetary policy helpsto achieve economic growth by (i) minimising fluctuations in the prices and business activities and (ii) providing an economic environment conducive in achieving high levels of savings and investments.

The primary link between monetary policy and the economy in the market is balanced with the help of monetary policies decided by the central bank. The financial institutions (mainly banks) maintain reserve with the central bank (Reserve Bank of India), which trades on this balance at an interest rate called bank rate and repo rates. The thrust is to offer the market mechanism a

more prominent role in the economy and deliver the banks more operating flexibility and bring the proper efficiency in the economy. The changes in the monetary policy in recent years have also affected the stock market prices to a greater extent, especially banks' stock prices. The stock prices of commercial banks are getting affected by various measures of monetary policy, the important among them are changes in the monetary policy rates, i.e., BR, RR, RRR, CRR, SLR etc. which affects the supply of money directly in the market with the immediate outcome without creating any biases or distortions in the economy. These are the reason, which is perceived to be most suitable by the monetary authorities in establishing the trend in the stock market. Hence, efforts are being made to make the econometric study of the impact of changes in the monetary policy rates decided by the monetary authorities in making trends in the stock prices of commercial banks.

II. Review of Literature

Monetary policy always remains a vital instrument to fulfil the required objectives. In recent years, observing the developments states that, it is possible to maintain the pressures of inflation on the economy by maintaining a balanced improvement in growth. The moderation in the inflation rate is not a matter of accident. It is evident that the policies have been pursued. The policy seeks to regulate money supply growth consistent with expected real growth. Sometimes it is true that there can be some degree of substitution between two sources of finance, seeing the interest rate conditions in the market. Yet, from a long-term point of view, bank credit should not be considered a substitute for equity capital because both sources have diverse roles in financing corporate investment.

Indian economy additionally went through critical stages during the year 2008. India was impacted less by outer world miseries as it depended more on inward utilization, saving and import replacements. After 1991, India opened up its economy to worldwide players, a portion of commodities, the two labour and products, in a Gross domestic product developed altogether. This paper endeavours to dissect the factors answerable for India's new development, the effect of the world downturn on these factors and their importance. It needs to approve whether India's economy has moved away from utilization and saved to outside area reliance (J.K. Sachdeva). The factors like investment inflows by FII, the macroeconomic policy of the Reserve Bank of India, and interest rates in the domestic market affect the market's sentiments. However, the markets sentiments turned bullish, and the stock market started to increase after the euro crisis. The RBI, from time to time, took measures to curb inflation and the after-effects of economic crises on the Indian stock market and the economy as a whole (Saha, 2017). The effect of changes in the approach pace of revenue on interest for bank credit is inspected for seven developing business sector economies, including India, from 2002 to 2010. Board information procedures are utilized after precluding the presence of unit roots. The outcomes show that when different determinants, similar to homegrown interest pressure, trade interest and the effect of securities exchange signals are controlled for, change in the approach pace of revenue is a significant determinant of firms' interest for bank credit. The outcomes affirm that money related arrangement is an effective countercyclical device for establishing the rhythm of financial action (B L Pandit, 2011). The monetary policy and stock markets proceed hand in hand or in reverse directions and which sector is vastly influenced by the monetary policy. In this study, they generalized that the volatility of monetary policy has affected the Nifty 50 and sectoral

indices in the long term but has no significant impact in the short term (Mrityunjaya B Chavannavar, 2016).

The stock return instability is vulnerable to financial strategy shocks in the US, while money related arrangement shocks in the Eurozone matter for safety bring unpredictability back. These discoveries are hearty for other Eurozone securities exchanges, yet not critical for other Eurozone security markets (Konrad, 2009). The monetary policy shifts significantly affect the stock returns, thus supporting the concept of monetary policy transmission via the stock market. The study finally has considered the increasing co-movement among international stock markets, and the sensitivity analysis indicates that the results remain essentially unchanged (Christos Ioannidis, 2008). In a descriptive survey of the NSE-listed commercial banks in Kenya it is stated that monetary instruments have various degrees of correlation with the financial performance of commercial banks listed on the NSE. It also claims that OMO rates are positively connected with the commercial bank's list, but CBR and CRR rates are negatively correlated (Kerongo Maatwa Meshack, 2016).

III. Objectives and Hypothesis

III.A. Research question

1. Is there any correlation between monetary policy rates and Banks Nifty Index?
2. Does a change in monetary policy rate have any significant impact on the Banks Nifty Index price?

III.B. Objective of the study

This study will focus on the impact of change in monetary policy rates on the stock prices of listed commercial banks in India (Banks Nifty Index of NSE). Therefore the objectives of the study are

1. To study the correlation between monetary policy rates and Banks Nifty Index.
2. Whether individually the monetary policy rates (i.e. BR, RR, RRR, CRR, MSF and SLR) will significantly influence the stock price of listed banks in NSE.

III.C. Hypothesis of the study

H_{A1}: There is no correlation between the monetary policy rates and Banks Nifty Index prices in India.

H_{A2}: There is no significant relationship between the individual monetary policy rates and Banks Nifty Index in India.

IV. Research Methodology

IV.A. Scope of the study

The study covers the problem which is generally faced by all the banks in India and also among the world. The study highlights the relationship between the monetary policy rates and the dependent variable, i.e., Banks Nifty Index in India, which represents the stock performance of the banks and how the stock performance of the banks are getting affected will be discussed in the study, covering the period from 2016-2021. In this period, how the monetary policy rate fluctuations have impacted the stock position, i.e., Banks Nifty Index in India, are studied.

IV.B. Statement of the Problem

Banks play a significant role in the economic development of the nation. Commercial banks have reached every corner of the country. The Reserve bank of India regulates all the banks in India. The RBI will control the money supply and inflation in the economy by using monetary policy tools. The tools are to be implied on banks. Banks are also essential players in the stock market. Various public and private sector banks are listed in the stock markets in India. Due to a change in policy rates, there may be a variation in the performance of commercial banks, which can also affect the stock prices of listed commercial banks in India. Therefore, this concentrates on how changes in policy rates impact the stock prices of commercial banks in India. This study is beneficial for both the apex bank(monetary policy committee) incautiously fixing the policy rates and the investors in the stock market.

IV.C. Significance of the study

The study highlights the impact of the monetary policy rates (i.e. Bank Rate, Repo Rate, Reverse Repo Rate, Cash Reserve Ratio, Marginal Standing Facility and Statutory Liquidity Ratio) on the stock performance of commercial banks listed in the National Stock Exchange (NSE), i.e. Banks Nifty Index. This study helps the commercial banks to adjust themselves to the change in policy rates made by the central bank and also to maintain their position in the stock market. Even investors can become alert and invest wisely in the banking sector. Hence, the study concentrates on how monetary policy rates impact the stock prices of banks Nifty Index.

IV.D. Operational definition of terms

Monetary Policy Rates: Monetary policy is the macroeconomic policy laid down by the central bank. It involves the management of money supply and interest rate. It is the demand side economic policy used by the government of a country to achieve macroeconomic objectives like inflation, consumption, growth and liquidity.

Banks Nifty Index: It is an index comprised of the most liquid and large capitalized Indian banking stocks. It provides investors with a benchmark that captures the capital market performance of Indian bank stocks. The index has twelve stocks from the banking sector. The index was launched in 2003.

IV.E. Regression equation:

In this study, regression equations are formed through which the impact of change in monetary policy rates on the performance of stock prices of Banks Nifty Index (BNI). The regression equations are as under:

$$BNI = \beta_0 + \beta_1 BR + se$$

$$BNI = \beta_0 + \beta_2 RR + se$$

$$BNI = \beta_0 + \beta_3 RRR + se$$

$$BNI = \beta_0 + \beta_4 MSF + se$$

$$BNI = \beta_0 + \beta_5 SLR + se$$

Where:

BNI indicates Banks Nifty Index, β indicates Beta and se means standard error.

V. Analysis and Interpretation

Table-1: Correlations among the variables

		Correlations						
		NiftyBank Index	BR	RR	RRR	CRR	MSF	SLR
NiftyBank Index	Pearson Correlation	1	-0.764**	-0.683**	-0.406**	. ^b	-0.764**	-0.939**
	Sig. (2-tailed)		0.000	0.000	0.001	.	0.000	0.000
	N	63	63	63	63	63	63	63
BR	Pearson Correlation	-0.764**	1	0.982**	0.805**	. ^b	1.000**	.897**
	Sig. (2-tailed)	0.000		0.000	0.000	.	0.000	0.000
	N	63	63	63	63	63	63	63
RR	Pearson Correlation	-0.683**	0.982**	1	0.903**	. ^b	0.982**	0.841**
	Sig. (2-tailed)	0.000	0.000		0.000	.	0.000	0.000
	N	63	63	63	63	63	63	63
RRR	Pearson Correlation	-0.406**	0.805**	0.903**	1	. ^b	0.805**	0.601**
	Sig. (2-tailed)	0.001	0.000	0.000		.	0.000	0.000
	N	63	63	63	63	63	63	63
CRR	Pearson Correlation	. ^b	. ^b	. ^b	. ^b	. ^b	. ^b	. ^b
	Sig. (2-tailed)
	N	63	63	63	63	63	63	63
MSF	Pearson Correlation	-0.764**	1.000**	0.982**	0.805**	. ^b	1	0.897**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	.		0.000
	N	63	63	63	63	63	63	63
SLR	Pearson Correlation	-0.939**	0.897**	0.841**	0.601**	. ^b	0.897**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	.	0.000	
	N	63	63	63	63	63	63	63

** . Correlation is significant at the 0.01 level (2-tailed).

b. Cannot be computed because at least one of the variables is constant.

From the table above, it can be seen that the correlation between Repo Rate and Banks Nifty Index is -0.764 indicating both are negatively correlated, i.e., increase in Bank Rate causes decrease in Banks Nifty prices and vice-versa. Similarly, the correlation among Repo Rate, Reverse Repo Rate, Marginal Standing Facility and Statutory Liquidity Ratio with Banks Nifty Index are -0.683, -0.406, -0.764 and -0.939, respectively, which says that rates have a negative correlation with Banks Nifty Index, i.e., if there is an increase in Repo Rate, Reverse Repo Rate, Marginal Standing Facility and Statutory Liquidity Ratio leads to a decrease in Banks Nifty Index prices and vice-versa. In the case of Cash Reserve Ratio, as the rates are constant for a long time and it has been changed only a few times hence, it cannot be computed to get correlation with Banks Nifty Index. Since all the probability values are less than 0.05, thus it is said that there is a correlation among all the independent variables (BR, RR, RRR, MSF and SLR) and the dependent variable (Banks Nifty Index) except CRR as it is almost constant among the selected years.

Table-2: Model summary of Bank Rate

Model Summary ^b										
Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.764 _a	0.584	0.578	.0601379	0.584	85.787	1	61	0.000	0.166
a. Predictors: (Constant), BR										
b. Dependent Variable: NiftyBankIndex										

In the above model, Adjusted R-Square is 57.8%, i.e., more than 50% of the variance is explained by the variables selected and taken in the model (Nifty bank index and Bank Rate) in the model taken is a good fit for the model.

Table-3: ANOVA table of Bank Rate

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.310	1	0.310	85.787	0.000 ^b
	Residual	0.221	61	0.004		
	Total	0.531	62			
a. Dependent Variable: NiftyBankIndex						
b. Predictors: (Constant), BR						

Table-3 explains that the ANOVA in this model is a good fit for regression ($F=85.878$, $p=0.000$).

Table-4: Model summary of Repo Rate

Model Summary ^b										
Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.683 _a	0.467	0.458	0.068136549	0.467	53.347	1	61	0.000	0.140
a. Predictors: (Constant), RR										
b. Dependent Variable: NiftyBankIndex										

In the above table-4, Adjusted R-Square is 45.8%, i.e., less than 50% of the variance is explained by the variables taken in the model (Bank nifty index and Repo Rate). However, it is not a good fit, but it is nearing 50%, so it has its impact in variation but not to a greater extent.

Table-5: ANOVA table of Repo Rate

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.248	1	0.248	53.347	0.000 ^b
	Residual	0.283	61	0.005		
	Total	0.531	62			
a. Dependent Variable: NiftyBankIndex						
b. Predictors: (Constant), RR						

In table-5, the F value and its probability explain that the model is a good fit for regression analysis ($F=53.347$, $p=.000$).

Table-6: Model summary of Reverse Repo Rate

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.406 ^a	0.165	0.151	0.85266300	0.165	12.018	1	61	0.001	0.095
a. Predictors: (Constant), RRR										
b. Dependent Variable: NiftyBankIndex										

Table-6 discusses the Adjusted R-Square between the dependent (Nifty bank index) and independent variables (Reverse Repo Rate). The Adjusted R-Square is 15.1% which is less than 50%, which explains that the variance explained by the variables taken in the above model is not a good fit for the model.

Table-7: ANOVA table of Reverse Repo Rate

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.087	1	0.087	12.018	0.001 ^b
	Residual	0.443	61	0.007		
	Total	0.531	62			
a. Dependent Variable: NiftyBankIndex						
b. Predictors: (Constant), RRR						

ANOVA in the above table states the values of F and probability are 12.018 and 0.001, respectively, which explains that the model is a good fit for regression analysis.

Table-8: Model summary of Marginal Standing Facility

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.764 ^a	0.584	0.578	0.060137885	.584	85.787	1	61	.000	.166
a. Predictors: (Constant), MSF										
b. Dependent Variable: NiftyBankIndex										

Table -8 explains about the variances among the variables with the help of Adjusted R-Square. The above model says that the Adjusted R-Square value is 57.8%, i.e., greater than 50%, which states that the variance between the dependent variable (Nifty bank index) and the independent variable (Marginal Standing Facility) in the above model is a good fit for the model.

Table-9: ANOVA table of Marginal Standing Facility

ANOVA ^a					
Model	Sum of Squares	Df	Mean Square	F	Sig.

1	Regression	0.310	1	0.310	85.787	0.000 ^b
	Residual	0.221	61	0.004		
	Total	0.531	62			
a. Dependent Variable: NiftyBankIndex						
b. Predictors: (Constant), MSF						

The ANOVA in the above table-9 shows that the Model is a good fit for regression analysis (F=85.787, p=.000).

Table-10: Model summary of Statutory Liquidity Ratio

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.939 ^a	0.883	0.881	0.031971826	0.883	458.336	1	61	0.000	0.516
a. Predictors: (Constant), SLR										
b. Dependent Variable: NiftyBankIndex										

From the model summary in the above table-10, the variance between the dependent variable (Banks Nifty Index) and independent variable (Statutory Liquidity Ratio) can be seen with the help of Adjusted R-Square. The above model shows that the Adjusted R-Square is 88.1%, i.e., much more than 50%, which says that the variance explained by the variables taken in this model is a good fit for the model.

Table-11: ANOVA table of Statutory Liquidity Ratio

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.469	1	0.469	458.336	0.000 ^b
	Residual	0.062	61	0.001		
	Total	0.531	62			
a. Dependent Variable: NiftyBankIndex						
b. Predictors: (Constant), SLR						

Table-11, explaining about the ANOVA, says that the value of F and probability are 458.336 and 0.000, respectively, which states that the model is a good fit for regression analysis.

VI. Conclusion

VI.A. Research Outcomes

The monetary policy rates significance values are greater than 0.5, except Reverse Repo Rate, hence dependent variable and independent variables except Reverse Repo Rate have a strong correlation. From the above ANOVA tables, it is identified that the probability values of the F-test are less than 0.05. Hence null accepted and it is concluded that individually monetary policy rates do not have any significant impact on the movement in stock prices of the Banks Nifty Index.

Durbin-Watson test can be seen in all the model summaries above. Durbin Watson (D-W) test is applied because there is time-series data. D-W test says that there is an autocorrelation among the variables as it is not ranging within 1.5 to 2.5. The numbers in the above tables are less than 2.5; hence it can be concluded that there is a positive autocorrelation among the dependent

variable (Banks Nifty Index) and independent variables (Bank Rate, Repo Rate, Reverse Repo Rate, Marginal Standing Facility and Statutory Liquidity Ratio).

VI.B. Implications

The main objective of the research is to see if the change in Monetary Policy Rates as and when required by the Reserve Bank of India could lead to impact price movements in the Banks Nifty Index under NSE. According to the findings of the study, the influence of SLR on nifty movement is nearing one, and it is negatively correlated with the dependent variable. Individually monetary policy rate may not impact the price movements of Banks Nifty Index but collectively in the long run it may influence the Banks Nifty Index price movements in India.

VI.C. Policy Making

Monetary Policy Committee should be cautious in changing the monetary policy rates, which may affect the price movements of banks nifty index and other performances of various financial institutions in one or the other way. RBI should be cautious before changing any of the rates Bi-Monthly. Even qualitative tools are to be considered to control money supply, credit and inflation in the economy.

VI.D. Limitations and scope of the Study

The duration of the period considered in this study is of only five years. And the rates used for this study are five i.e., Repo Rate, Reverse Repo Rate, Bank Rate, Marginal Standing Facility and Statutory Liquidity Ratio. Other monetary policy rates can also be included. Nifty prices are taken on monthly basis in this study, which can be changed based on different objectives.

VII. References

1. Arijit Ghosh, G. B. (2011). Forecasting BSE Sensex under Optimal Conditions: An Investigation Post Factor Analysis. *Journal of Business Studies, Quarterly.*, 57-73.
2. B L Pandit, P. V. (2011). ICRIER Working Papers, Indian Council for Research on International Economic Relations, Monetary policy and credit demand in India and some EMEs.
3. Konrad, E. (2009). The impact of monetary policy surprises on asset return volatility: the case of Germany. *Financial Markets and Portfolio Management*, 111-135.
4. Martin T. Bohla, P. L. (2008). European Stock Markets and the ECB's Monetary Policy Surprises. *International Finance*, 117-130.