

“Monetary Policy Effect on Nifty 50 and Sectoral Indices – A Study from Indian Stock Markets”

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Abstract: The Monetary Policy makes use of various instruments like Cash Reserve Ratio (CRR), Statutory Liquidity Ratio (SLR), Repo Rate, Reverse Repo Rate and Bank rate to control the money supply of the country. Nifty 50 & Sectoral indices volatility is influenced by the monetary policy of RBI. The monetary policy may have a favorable or adverse impact on the stock market. Any changes in the monetary policy has a direct impact on stock market returns and overall economy of the nation. The stock price tends to fluctuate before and after the monetary policy is announced. It is important to understand the effect of selected monetary instruments changes on Nifty 50 & sectoral indices. This study aims to understand whether the monetary policy and stock markets move hand in hand or in opposite directions and which sector is highly influenced by the monetary policy.

The study revealed that majority of the variations in Nifty 50 & sectoral indices are explained jointly by variations in monetary tools and has a strong linear relationship. There exists a moderate linear relationship between changes in the monetary policy tools and Nifty Energy movement. Majority of the variations in Nifty Energy are unexplained jointly by variations in monetary tools. It is observed that the changes in the monetary policy tools effected the Nifty 50 movement in the long term. In the short term no significant difference is observed in Nifty 50 movement.

I. INTRODUCTION

Monetary Policy is an indispensable tool of economic management. Monetary Policy is a policy which employs the central bank's control over the supply, cost and use of money for achieving objectives of economic policy namely achievement of domestic stability, balance of payment equilibrium, full employment and growth, curbing inflation and ensuring that government deficits are financed at low interest rates.

The Monetary Policy makes use of various instruments like Cash Reserve Ratio (CRR), Statutory Liquidity Ratio (SLR), Repo Rate, Reverse Repo Rate and Bank rate to control the money supply of the country.

Stock market is the aggregation of buyers and sellers of stocks which is highly susceptible to change and react to economic conditions and hence regarded as a “Barometer of the Indian Economy”. Stock Market reacts depending on the investor's interpretation of economic activities and serves as an indicator of social mood. The key interest rates of RBI and stock market volatility depends on the monetary policy rates.

NIFTY 50 Index is National Stock Exchange of India's benchmark stock market index for Indian equity market. NIFTY 50 covers 13 sectors of the Indian economy and offers investment managers exposure to the Indian market in one portfolio. The Nifty 50 Index represents 65% of the free float market capitalization of the stocks. NIFTY volatility is influenced by the monetary policy of RBI. Any fluctuation in the monetary policy has a direct impact on stock market returns and overall economy of the nation.

The stock price tends to fluctuate before and after the monetary policy is announced. The monetary policy may have a favorable or adverse impact on the stock market i.e., Nifty is considered as an index depending on how market players analyze it with reference to their expectations. Monetary policy can hence help in achieving economic growth by (i) minimizing fluctuations in the prices and business activities and (ii) providing economic environment conducive for achieving high levels of savings and investments.

II. LITERATURE REVIEW

Sherman J. Maisel (1968) found that Monetary policy appears to influence the economy primarily through its impact on spending in particular sectors. Spending is influenced through the price, availability, and distribution of credit. Higher interest rates resulting from an increased demand for funds, and/or a slower rate of expansion of the supply of funds, and disintermediation brought contraction in investment. He concluded that movements in the flow of funds among financial institutions and markets may create impacts on spending as great as or even greater than do changes in the general availability and price of credit.

Christos Ioannidis, Alexandros Kontonikas (2006) investigated the impact of monetary policy on stock returns in thirteen OECD countries over the period 1972-2002. The results indicate that monetary policy shifts significantly affect stock returns, thereby supporting the notion of monetary policy transmission via the stock market.

Shahid Ahmed (2008) investigated the nature of the causal relationships between stock prices and the key macro economic variables representing real and financial sector of the Indian economy for the period March, 1995 to March, 2007 using quarterly data. The variables were index of industrial production, exports, foreign direct investment, money supply, exchange rate, interest rate, NSE Nifty and BSE Sensex in India. The results of the study revealed differential causal links between aggregate macro economic variables and stock indices in the long run. Interest rate seems to lead the stock prices. The study also revealed that the movement of stock prices is not only the outcome of behaviour of key macro economic variables but it is also one of the causes of movement in other macro dimension in the economy.

Md. Mahmudul Alam, Md. Gazi Salah Uddin (2009) examined the effect of interest rate on share price and changes of interest rate on changes of share price. Individual country result is mixed for both developed and developing countries. For Malaysia it is found that Interest Rate has no relation with Share price but Changes of Interest Rate has negative relationship with Changes of Share Price. In case of Japan, it is found that Interest Rate has positive relationship with Share price but change of Interest Rate has negative relationship with change of Share Price. Four countries like Bangladesh, Colombia, Italy, and S. Africa showed negative relationship for both Interest Rates with Share price and Changes of Interest Rate with Changes of Share Price. Eight countries like, Australia, Canada, Chile, Germany, Jamaica, Mexico, Spain, and Venezuela has significant negative relationship between Interest Rates and Share price but no relationship between change of Interest Rate and change of Share Price. So, except Philippine all other countries show significant negative relationship either Interest Rates with Share price or Changes of Interest Rate with Changes of Share Price or both.

Amaresh Samantaraya (2009) found that Monetary policy is a key constituent of overall economic policy across the industrial and emerging economies for the purpose of stabilization of output and prices. Monetary expansion reduces interest rates and augments aggregate demand through increase in investment and consumption spending.

K Raviteja, Mandarapu Tejaswi, Bandla Madhavi, G Ujwala (2013) examined cash reserve ratio effect on stock market returns in India and investigated relative other factors which influence stock market returns in India. It is found that the volatility of the Nifty 50 is more whenever RBI changes the CRR up to 50 basis points. CRR had played vital role in

influencing the interest rates and flow of liquidity from the deposit holders into the banks. Monetary policy changes impact is more on the Bank Nifty than the Nifty 50. CRR and Bank Nifty are strongly correlated than the CRR with Nifty 50, which moderately correlated. IIP is heavily depending on the interest rates and the CRR. It has been observed that whenever inflation is moving upside due to the excess liquidity, increase in CRR, Repo-rate and Reverse repo-rates affecting the borrowing cost for the industries.

Anamika Singh (2014) conducted study on monetary policy impact on market volatility for 15 years data. It has been observed that CRR and SLR are negatively correlated with the market indices that are NIFTY and Bank NIFTY but interest rate were moving in the same direction along with the market. Repo rate and Reverse Repo rate are positively correlated with the market indices.

III. OBJECTIVES

- To find the relation and influence of changes in the monetary policy tools on Nifty.
- To study the effect of selected monetary instruments changes on sectoral indices.
- To test the significance of the effect of monetary policy changes on Nifty 50, pre and post announcement of the monetary policy.

IV. NEED FOR THE STUDY

Monetary policy is used to manage the money supply to all the sectors of economy and interest rates to increase the pace of growth of economy. Evidences say that monetary policy instruments directly or indirectly affect the various sectors of the economy and stock markets. It is understood that there is close relationship between monetary policy and stock market. We have observed both contractionary and expansionary monetary policy during the period FY2011 – FY2016. This study aims to understand whether the monetary policy and stock markets move hand in hand or in opposite directions and which sector is highly influenced by the monetary policy. This analysis is a perfect guideline for investors and bankers which help to take investment decisions. When monetary policy and stock market relationship are established, investors are able to establish the significance between them and accordingly invest in stocks. Hence there is need to understand how Monetary policy changes effect stock market and have influence on different sectoral indices.

V. SCOPE

The study on index Nifty 50 and sectoral indices is conducted for 5 years from 2011 to 2016 and limited to few instruments of monetary policy like Repo Rate, Reverse Repo Rate, Bank Rate, Cash Reserve Ratio (CRR), Statutory Liquidity Ratio (SLR) and MSF to test its impact on stock markets. Any economy is influenced by a number of factors and all its

objectives cannot be effectively pursued by a single arm and hence this study is limited to only monetary policy which largely deals with most of the economic policies. Open market Operations, time lags, inflation or deflation is not taken into consideration. For the calculation of t-test, only the Annual Policy Statement, Quarterly Reviews, and Bi-monthly Policy Statements are taken into consideration. Any sudden change in the monetary instruments is ignored.

VI. RESEARCH HYPOTHESIS

H₁: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 3rd May 2011.

H₂: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 26th July 2011.

H₃: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 25th Oct 2011.

H₄: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 24th Jan 2012.

H₅: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 17th Apr 2012.

H₆: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 31st Jul 2012.

H₇: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 30th Oct 2012.

H₈: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 29th Jan 2013

H₉: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 3rd May 2013.

H₁₀: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 30th Jul 2013.

H₁₁: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 29th Oct 2013.

H₁₂: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 28th Jan 2014.

H₁₃: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 1st Apr 2014.

H₁₄: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 3rd Jun 2014.

H₁₅: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 5th Aug 2014.

H₁₆: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 30th Sep 2014.

H₁₇: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 2nd Dec 2014.

H₁₈: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 3rd Feb 2015.

H₁₉: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 7th Apr 2015.

H₂₀: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 2nd Jun 2015.

H₂₁: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 4th Aug 2015.

H₂₂: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 29th Sep 2015.

H₂₃: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 1st Dec 2015.

H₂₄: There is significant difference in Nifty 50 values before and after the announcement of monetary policy dated 2nd Feb 2016.

VII. RESEARCH METHODOLOGY

Any fluctuation in the monetary policy has a direct impact on stock market returns and overall economy of the nation. The research is conducted on Nifty 50 and sectoral indices which accounts for 13 sectors of the economy. The sample is prominent because Nifty 50 represents about 65% of the free float market capitalization of the stocks listed on NSE as on March 31st 2016.

The study is based on the daily closing values of Nifty 50 and sectoral indices for the period of 5 years from 1st April 2011 to 30st March 2016. Monetary tools data is obtained from RBI. In order to test the impact of monetary policy on Indian stock

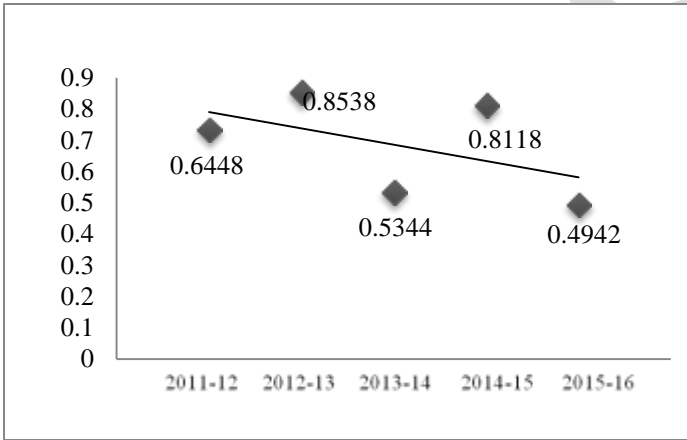
market, multiple regression and testing of hypothesis has been conducted. Multiple regression is conducted to study the relationship between Nifty 50 and selective monetary instruments. It helps to determine the contribution of each monetary policy instrument in the movement of Nifty 50. Testing of Hypothesis is conducted in order to study if there is any significant effect on the Nifty 50, 15 days before and after the announcement of the monetary policy.

Analysis Of Effect Of Monetary Policy Tools On Nifty 50

YEAR	R	R ²	%
2011-12	0.803	0.6448	64.48
2012-13	0.924	0.8538	85.38
2013-14	0.731	0.5344	53.44
2014-15	0.901	0.8118	81.18
2015-16	0.703	0.4942	49.42

*Values for MSF are taken from the date of introduction of the tool (3rd May 2011).

Figure 1: R² values indicating relationship between Nifty 50 & Monetary policy instruments for 2011 to 2016.



YEAR	BANK RATE	CRR	MSF	REPO RATE	REVERSE REPO	SLR
2011-12	0.34	-0.18	0.653	-0.046	-1.415	Constant
2012-13	0.15	-0.641	-0.042	-0.031	0.143	-0.452
2013-14	0.48	Constant	-0.658	0.09	0.528	Constant

2014-15	Constant	Constant	Constant	0.025	-0.114	-0.844
2015-16	Constant	Constant	Constant	Constant	0.703	Constant

Analysis of Effect Of Monetary Policy Tools On Sectoral Indices

Table 3: R & R² values indicating relationship between Sectoral indices & Monetary policy instruments for 2011 to 2016

YEAR	SECTORAL INDICES	R	R ²
2011-12	NIFTY AUTO	0.834	0.696
	NIFTY BANK	0.826	0.682
	NIFTY ENERGY	0.812	0.659
	NIFTY FINANCIAL SERVICES	0.785	0.616
	NIFTY FMCG	0.789	0.623
	NIFTY IT	0.808	0.653
	NIFTY MEDIA	0.916	0.839
	NIFTY METAL	0.922	0.850
	NIFTY PHARMA	0.668	0.446
	NIFTY PRIVATE BANK	0.757	0.573
	NIFTY PSU BANK	0.872	0.760
NIFTY REALTY	0.868	0.753	
2012-13	NIFTY AUTO	0.86	0.740
	NIFTY BANK	0.9	0.810
	NIFTY ENERGY	0.8	0.640
	NIFTY FINANCIAL SERVICES	0.916	0.839
	NIFTY FMCG	0.95	0.903
	NIFTY IT	0.786	0.618
	NIFTY MEDIA	0.943	0.889
	NIFTY METAL	0.766	0.587
	NIFTY PHARMA	0.926	0.858
	NIFTY PRIVATE BANK	0.935	0.874
NIFTY PSU BANK	0.701	0.491	
NIFTY REALTY	0.858	0.736	
2013-14	NIFTY AUTO	0.829	0.687

	NIFTY BANK	0.755	0.570		NIFTY METAL	0.617	0.381	
	NIFTY ENERGY	0.392	0.154		NIFTY PHARMA	0.952	0.906	
	NIFTY FINANCIAL SERVICES	0.748	0.560		NIFTY PRIVATE BANK	0.881	0.776	
	NIFTY FMCG	0.485	0.235		NIFTY PSU BANK	0.517	0.267	
	NIFTY IT	0.921	0.848		NIFTY REALTY	0.222	0.049	
	NIFTY MEDIA	0.702	0.493		2015-16	NIFTY AUTO	0.544	0.296
	NIFTY METAL	0.889	0.790			NIFTY BANK	0.691	0.478
	NIFTY PHARMA	0.797	0.635			NIFTY ENERGY	0.334	0.112
	NIFTY PRIVATE BANK	0.753	0.567			NIFTY FINANCIAL SERVICES	0.653	0.426
	NIFTY PSU BANK	0.822	0.676			NIFTY FMCG	0.303	0.092
	NIFTY REALTY	0.779	0.607			NIFTY IT	0.456	0.208
	2014-15	NIFTY AUTO	0.826			0.682	NIFTY MEDIA	0.61
NIFTY BANK		0.839	0.704	NIFTY METAL		0.839	0.704	
NIFTY ENERGY		0.581	0.338	NIFTY PHARMA		0.458	0.210	
NIFTY FINANCIAL SERVICES		0.871	0.759	NIFTY PRIVATE BANK		0.671	0.450	
NIFTY FMCG		0.848	0.719	NIFTY PSU BANK		0.73	0.533	
NIFTY IT		0.95	0.903	NIFTY REALTY		0.696	0.484	
NIFTY MEDIA		0.714	0.510					

Table 4: β Coefficient for the Monetary policy instruments

YEAR	SECTORAL INDICES	BANK RATE	CRR	MSF	REPO RATE	REVERSE REPO	SLR
2011-12	NIFTY AUTO	0.53	-0.216	0.679	0.439	-1.199	Constant
	NIFTY BANK	0.361	-0.262	-0.036	-0.263	-0.587	Constant
	NIFTY ENERGY	0.248	-0.01	0.557	-0.178	-1.247	Constant
	NIFTY FINANCIAL SERVICES	0.35	-0.239	0.058	-0.104	-0.757	Constant
	NIFTY FMCG	0.033	-0.39	0.431	0.287	-0.225	Constant
	NIFTY IT	0.377	-0.029	0.425	-0.21	-1.086	Constant
	NIFTY MEDIA	0.238	-0.135	-0.014	-0.371	-0.642	Constant
	NIFTY METAL	0.179	-0.122	-0.516	-0.179	-0.315	Constant
	NIFTY PHARMA	0.094	-0.518	Constant	-0.082	-0.053	Constant
	NIFTY PRIVATE BANK	0.424	-0.347	0.191	-0.336	-0.673	Constant
	NIFTY PSU BANK	0.327	-0.166	-0.185	-0.122	-0.637	Constant
NIFTY REALTY	0.377	-0.029	0.425	-0.21	-1.086	Constant	
2012-13	NIFTY AUTO	0.066	-0.906	0.202	-0.056	0.184	-0.176
	NIFTY BANK	0.176	-0.815	-0.056	-0.067	0.217	-0.257

	NIFTY ENERGY	0.406	-0.135	-0.242	-0.09	-0.014	-0.664
	NIFTY FINANCIAL SERVICES	0.128	-0.72	-0.035	-0.048	0.216	-0.383
	NIFTY FMCG	-0.068	-0.469	-0.038	-0.007	0.147	-0.579
	NIFTY IT	0.278	-0.368	-0.204	0.08	-0.403	-0.171
	NIFTY MEDIA	0.161	-0.693	-0.153	-0.029	0.205	-0.398
	NIFTY METAL	0.401	-0.051	-0.152	-0.027	0.531	0.189
	NIFTY PHARMA	-0.071	-0.427	0.012	-0.019	0.055	-0.571
	NIFTY PRIVATE BANK	0.188	-0.791	-0.111	-0.061	0.159	-0.277
	NIFTY PSU BANK	0.244	-1.063	0.093	-0.023	0.307	0.306
	NIFTY REALTY	0.276	-1.003	0.005	-0.097	0.254	-0.018
2013-14	NIFTY AUTO	0.219	Constant	-0.906	-0.255	-0.287	Constant
	NIFTY BANK	0.429	Constant	-1.188	-0.501	0.309	Constant
	NIFTY ENERGY	0.884	Constant	-1.137	0.201	-0.364	Constant
	NIFTY FINANCIAL SERVICES	0.471	Constant	-1.22	-0.573	0.402	Constant
	NIFTY FMCG	1.335	Constant	-1.093	-0.569	0.347	Constant
	NIFTY IT	-0.232	Constant	0.645	0.549	0.39	Constant
	NIFTY MEDIA	0.891	Constant	-1.26	0.318	0.048	Constant
	NIFTY METAL	-0.767	Constant	0.403	1.18	-0.435	Constant
	NIFTY PHARMA	0.295	Constant	0.006	0.134	0.639	Constant
	NIFTY PRIVATE BANK	0.501	Constant	-1.246	-0.593	0.489	Constant
	NIFTY PSU BANK	0.358	Constant	-1.1	-0.194	-0.338	Constant
NIFTY REALTY	0.219	Constant	-0.906	-0.255	-0.287	Constant	
2014-15	NIFTY AUTO	Constant	Constant	Constant	0.217	-0.244	-0.903
	NIFTY BANK	Constant	Constant	Constant	0.314	-0.542	-0.665
	NIFTY ENERGY	Constant	Constant	Constant	-0.367	0.928	-0.022
	NIFTY FINANCIAL SERVICES	Constant	Constant	Constant	0.161	-0.439	-0.666
	NIFTY FMCG	Constant	Constant	Constant	0.138	-0.249	-0.771
	NIFTY IT	Constant	Constant	Constant	-0.624	0.505	0.129
	NIFTY MEDIA	Constant	Constant	Constant	0.475	-0.536	-0.649
	NIFTY METAL	Constant	Constant	Constant	-0.057	0.652	0.03
	NIFTY PHARMA	Constant	Constant	Constant	-0.624	0.505	0.129
	NIFTY PRIVATE BANK	Constant	Constant	Constant	0.217	-0.529	-0.646
	NIFTY PSU BANK	Constant	Constant	Constant	0.789	-0.644	-0.518
NIFTY REALTY	Constant	Constant	Constant	-0.624	0.505	0.129	
2015-16	NIFTY AUTO	Constant	Constant	Constant	Constant	0.544	Constant

NIFTY BANK	Constant	Constant	Constant	Constant	0.691	Constant
NIFTY ENERGY	Constant	Constant	Constant	Constant	0.334	Constant
NIFTY FINANCIAL SERVICES	Constant	Constant	Constant	Constant	0.653	Constant
NIFTY FMCG	Constant	Constant	Constant	Constant	0.303	Constant
NIFTY IT	Constant	Constant	Constant	Constant	0.456	Constant
NIFTY MEDIA	Constant	Constant	Constant	Constant	-0.61	Constant
NIFTY METAL	Constant	Constant	Constant	Constant	0.839	Constant
NIFTY PHARMA	Constant	Constant	Constant	Constant	0.458	Constant
NIFTY PRIVATE BANK	Constant	Constant	Constant	Constant	0.671	Constant
NIFTY PSU BANK	Constant	Constant	Constant	Constant	0.696	Constant
NIFTY REALTY	Constant	Constant	Constant	Constant	0.696	Constant

Figure 2: R² values indicating relationship between Nifty Auto & Monetary policy instruments for 2011 to 2016.

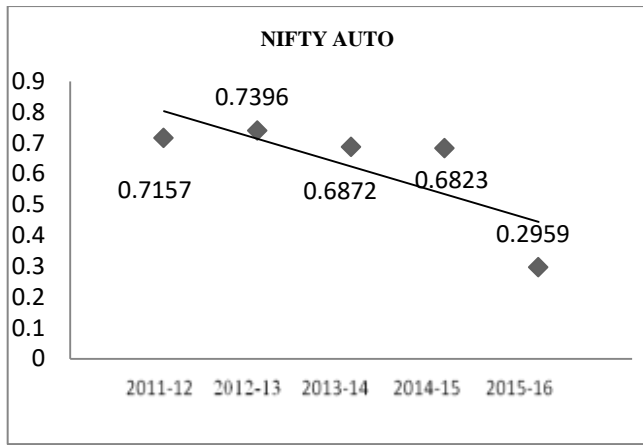


Figure 3: R² values indicating relationship between Nifty Bank & Monetary policy instruments for 2011 to 2016.

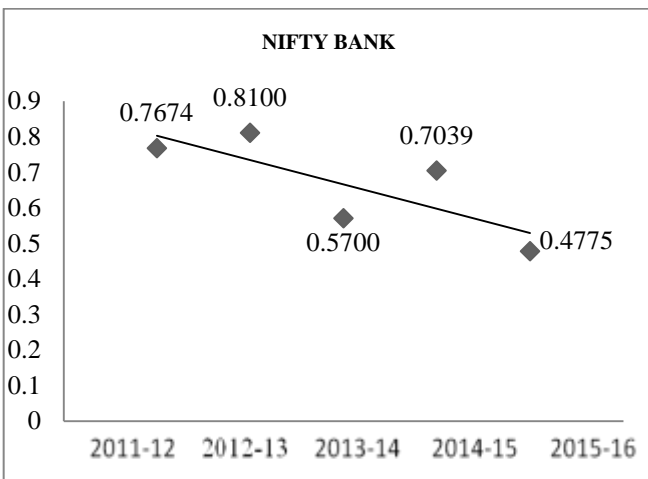


Figure 4: R² values indicating relationship between Nifty Energy & Monetary policy instruments for 2011 to 2016.

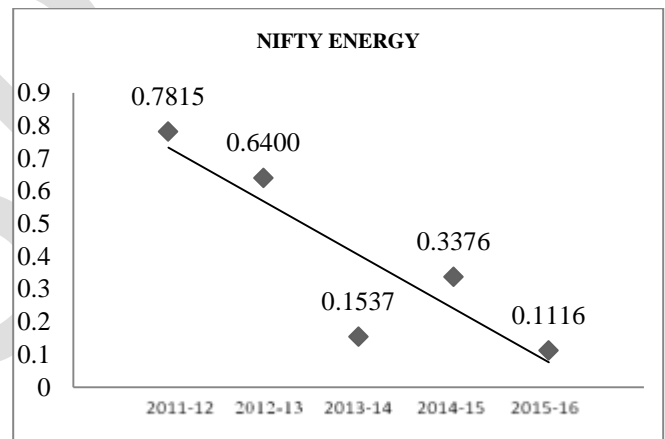


Figure 5: R² values indicating relationship between Nifty Financial Services & Monetary policy instruments for 2011 to 2016.

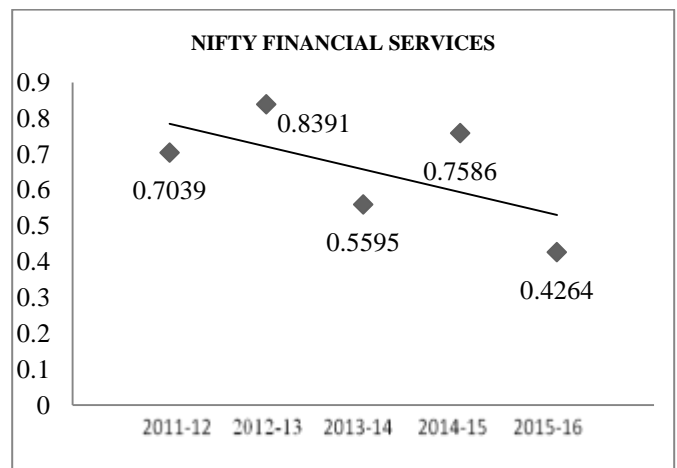


Figure 6: R² values indicating relationship between Nifty FMCG & Monetary policy instruments for 2011 to 2016.

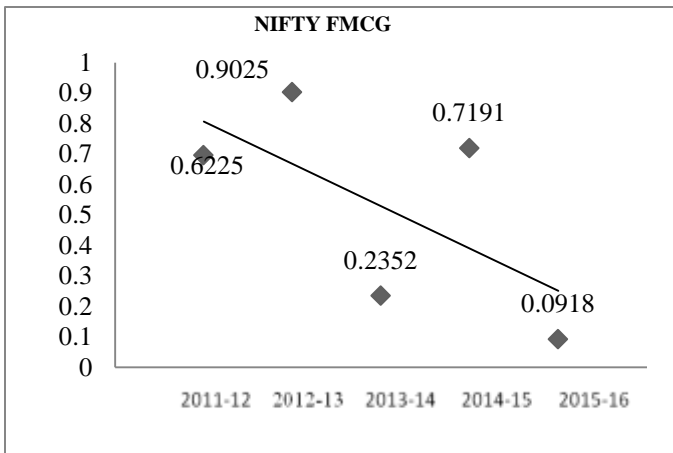


Figure 9: R² values indicating relationship between Nifty Metal & Monetary policy instruments for 2011 to 2016.

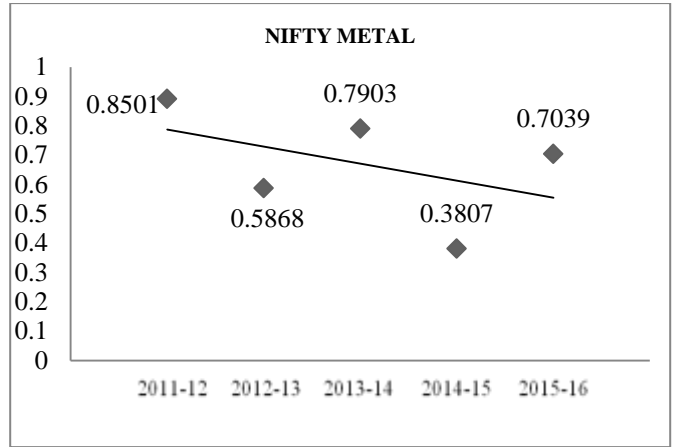


Figure 7: R² values indicating relationship between Nifty IT & Monetary policy instruments for 2011 to 2016.

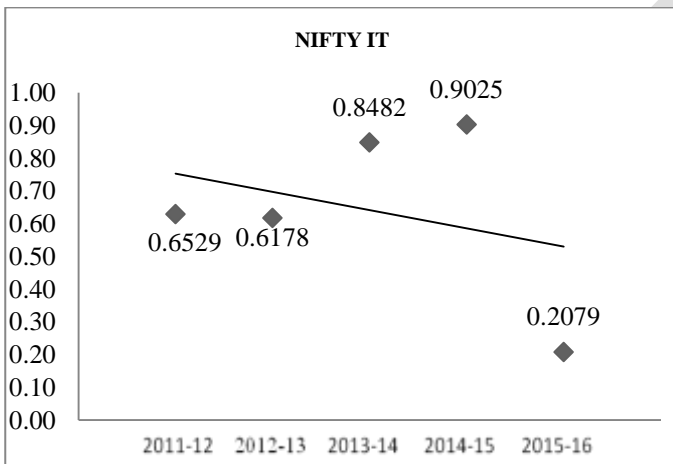


Figure 10: R² values indicating relationship between Nifty Pharma & Monetary policy instruments for 2011 to 2016.

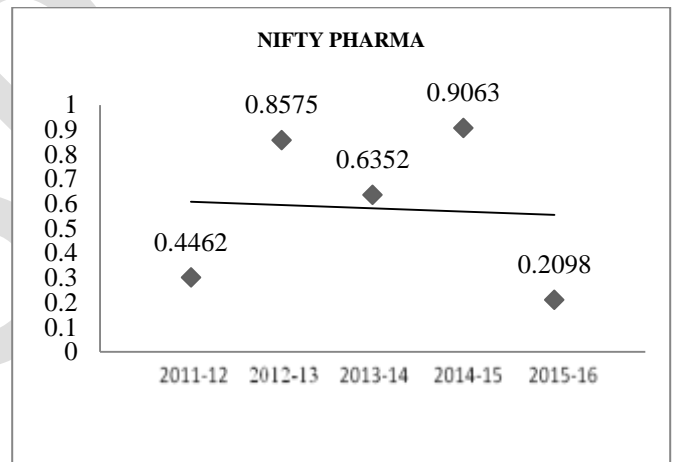


Figure 8: R² values indicating relationship between Nifty Media & Monetary policy instruments for 2011 to 2016.

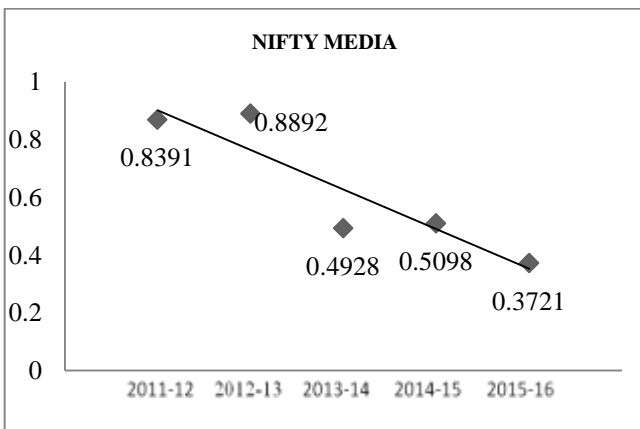


Figure 11: R² values indicating relationship between Nifty Private Bank & Monetary policy instruments for 2011 to 2016.

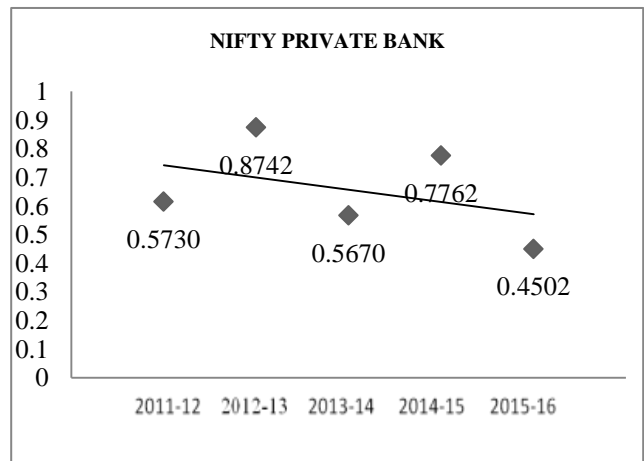


Figure 12: R² values indicating relationship between Nifty PSU Bank & Monetary policy instruments for 2011 to 2016.

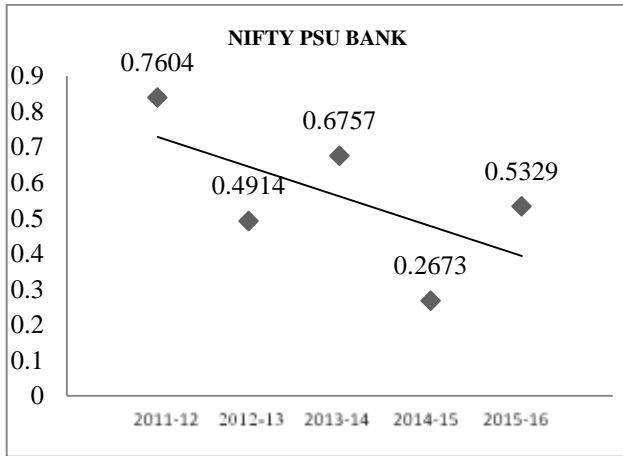


Figure 13: R² values indicating relationship between Nifty Realty & Monetary policy instruments for 2011 to 2016.

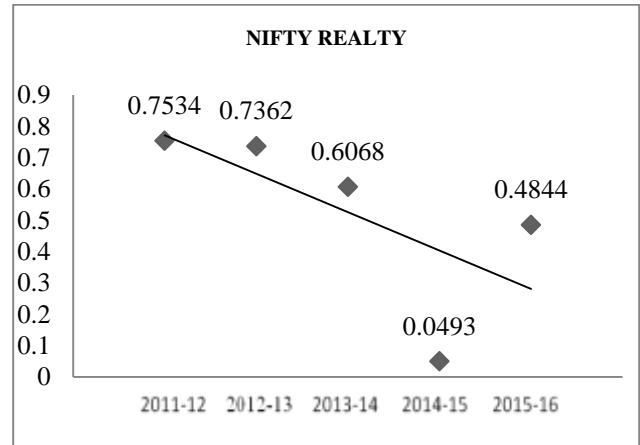


Table 5: Testing of hypothesis using t-test

DATE OF POLICY STATEMENT	NIFTY INDEX AS ON THE DAY OF ANNOUNCEMENT	Mean (x1) - (15 DAYS PRIOR ANNOUNCEMENT)	Mean (x2) - (15 DAYS POST ANNOUNCEMENT)	Standard Deviation (S1)	Standard Deviation (S2)	t-test	Hypothesis Acceptance
03rd May 2011	5565.25	5817.91	5486.08	63.14	59.32	0.23	H ₀
26th Jul 2011	5574.85	5610.61	5272.91	39.94	52.03	0.05	H ₀
25th Oct 2011	5191.60	5003.97	5181.50	126.12	134.15	-0.03	H ₀
24th Jan 2012	5127.35	4870.76	5311.87	108.78	72.88	-0.13	H ₀
17th Apr 2012	5289.70	5252.62	5200.91	52.19	81.96	0.03	H ₀
31st Jul 2012	5229.00	5191.11	5332.75	77.52	64.09	-0.07	H ₀
30th Oct 2012	5597.90	5683.93	5659.30	22.44	59.35	0.03	H ₀
29th Jan 2013	6049.90	6028.87	5947.37	40.61	50.17	0.10	H ₀
3rd May 2013	5944.00	5746.54	6076.56	161.61	71.25	-0.05	H ₀
30th Jul 2013	5755.05	5958.12	5569.94	79.34	137.85	0.08	H ₀
29th Oct 2013	6220.90	6092.83	6175.30	91.71	101.38	-0.02	H ₀
28th Jan 2014	6126.25	6253.17	6057.20	70.19	38.60	0.01	H ₀
01st Apr 2014	6721.05	6651.68	6735.94	102.90	58.07	-0.31	H ₀
03rd Jun 2014	7415.85	7254.26	7562.58	85.36	71.76	-0.13	H ₀
05th Aug 2014	7746.55	7688.40	8302.5	103.03	119.59	-0.02	H ₀
30th Sep 2014	7964.80	8042.04	7904.94	77.94	81.56	0.06	H ₀
02nd Dec 2014	8524.70	8447.95	8305.63	69.40	157.63	0.25	H ₀
03rd Feb 2015	8756.55	8657.61	8734.96	223.86	10.17	-0.01	H ₀
07th Apr 2015	8660.30	8581.22	8524.54	30.75	55.28	0.07	H ₀
02nd Jun 2015	8236.45	8341.44	8120.44	90.93	119.01	0.05	H ₀

04th Aug 2015	8516.90	8509.62	8382.29	94.33	227.09	0.01	H ₀
29th Sep 2015	7843.30	7811.98	8150.51	108.76	94.17	-0.08	H ₀
01st Dec 2015	7954.90	7850.53	8143.91	63.948	90.24	0.04	H ₀
02nd Feb 2016	7455.55	7454.92	7211.97	90.27	149.34	0.04	H ₀

VIII. FINDINGS

There is strong linear relationship between changes in the monetary policy tools and Nifty 50 movement for the past 5 years. Majority of the variations in Nifty 50 are explained jointly by variations in monetary tools.

Bank Rate, Repo, Reverse Repo and MSF have influenced the Nifty 50 movement for 2011-12 & 2012-13. In the year 2013-14 & 2014-15 MSF, Repo and Reverse Repo influenced Nifty 50 movement. In the year 2015-16, only reverse repo influenced Nifty 50 movement with moderate linear relationship.

There is strong linear relationship between changes in the monetary policy tools and Nifty Bank, Nifty Financial Services, Nifty Media, Nifty Metal, Nifty Private Banks, Nifty PSU Banks movement for the past 5 years. Majority of the variations in Nifty Bank are explained jointly by variations in monetary tools.

There is strong linear relationship between changes in the monetary policy tools and Nifty Auto, Nifty IT, Nifty Pharma, Nifty Realty movement for 4 years except for the year 2015-16. In the year 2015-16 a weak relationship was observed as majority of the variations in Nifty Auto, Nifty FMCG, Nifty IT, Nifty Pharma, Nifty Realty are unexplained by variations in monetary tools.

There is strong association or a strong linear relationship between changes in the monetary policy tools and Nifty Energy movement during the years 2011-12 and 2012-13. But for 2013-14, 2014-15, and 2015-16 there exists a moderate linear relationship. Majority of the variations in Nifty Energy are unexplained jointly by variations in monetary tools.

All the monetary policy tools except SLR have influenced the sectoral indices movement in 2011-12. All the six tools influenced the sectoral indices in 2012-13. In the year 2013-14 except CRR & SLR all the remaining tools influenced the sectoral indices movement. For 2014-15 Repo, Reverse Repo and SLR have influenced the sectoral indices movement. For 2015-16 only Reverse Repo influenced the movements in sectoral indices.

The obtained t values for 24 hypotheses are lesser than the tabulated t value ± 1.96 at 5% Level of Significance. Hence it is accepted that there is no significant difference in the Nifty value before and after the announcement of monetary policy for the past 5 years i.e. 2011-16.

IX. CONCLUSION

Nifty 50 volatility is influenced by the monetary policy of RBI. Any changes in the monetary policy has a direct impact on stock market returns and overall economy of the nation. It has been observed that movement in Nifty 50 and Sectoral Indices like Nifty Auto, Nifty Bank, Nifty Financial Services, Nifty Metal, Nifty FMCG, Nifty Pharma, Nifty Private Bank and Nifty PSU Bank have strong linear relationship with the changes in the monetary policy tools. Majority of the variations in these indices are explained jointly by variations in monetary tools. There exists a moderate linear relationship between changes in the monetary policy tools and Nifty Energy movement. Majority of the variations in Nifty Energy are unexplained jointly by variations in monetary tools. It is observed that the changes in the monetary policy tools effected the Nifty 50 movement in the long term. In the short term no significant difference is observed in Nifty 50 movement. There is no significant difference in the Nifty 50 value pre and post announcement of the monetary policy for the period 2011 to 2016.

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