

A Study on Volatility in Stock Market(NSE) based on Select Sectoral Indices during Union Budget Period of India.

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Abstract: Stock exchange is imperative and vigorous part of financial markets of any country. Volatility study is considered as one of the most testing time series prediction due to difficulty and complexity. In this paper we present that though stock market state is vibrant and undetectable but it will be subjective by some visible stock market data. Already conducted research on time series study on stock market and instability forecast can be classified into two categories namely in detail study of one market factor on the stock market unpredictability or forecast by historical price variability of stock. The stock market plays an important role in the growth process of any economy.. However, instability in stock market can increase the cost of equity which is able to influence economic expansion harmfully. The study is about the share market unpredictability performance between the Nifty index and Sector index i.e, Nifty FMCG , Nifty Bank, Nifty IT and Nifty Financial Services.

I. INTRODUCTION

Many a days the stock market does not attract the attention of the people due to routine average of stocks. Swiftly, it occupies the main headlines of the news columns. The stock market is one of the main parameters of measuring the economy of the nation. The wellbeing of the stock market has a far reaching blow. It affects the money being deposited back into the economy and how much confidence consumers have in their stable income. The BSE and NSE are two active stock markets in the country amongst the operational exchanges. They occupy more than 80% of the total trading in stock markets in terms of volume. In general, the financial market classifies Money market and capital market. Securities market is an integral part of organized capital market. Securities market can be further classified as primary market and secondary market.

II. OBJECTIVE OF THE STUDY

- a. Primary:-
To study the stock performance of NSE during the year 2015-2018
- b. Secondary:-
 1. To know the performance of stock during budget period.
 2. To know the growth level of stock after volatility.
 3. To study the impact on market performance by the sectors during the budget period

Revised Manuscript Received on December 22, 2018.

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III. RESEARCH METHODOLOGY

The type of research design used in the study was Quantitative and Analytical Research. The data collected for the study are Secondary data. Secondary source of data obtained from periodicals, journals & websites. Nifty index contains top 50 companies chosen on the basis of certain parameters set but not describes the volatility level of Indian capital market.

The data was taken from 2014- 2018 daily closing price of the nifty index. The tools used for analysis were

- > Multiple Regression and Correlation
- > ANOVA

IV. REVIEW OF LITERATURE

[1] studied on Capital Market instability in Indian Stock Exchanges. The author has used BSE NSE data for calculating volatility from 1998 to 2008. Data were taken from various institutions like Banks.

The stock market has shown high growth. Commodity markets were also strong. Certain sectors like software, textiles, iron and steel have yielded good dividends. The targets of Spices exports were comfortably reached. The strong Rupee value was also recorded. The stock markets have witnessed bull and bear phases during this period.

[6] studied the returns and instability of Shanghai stock markets due to effect of weather from 1996 to 2007. The study engaged ARCH model to measure extreme weather condition using simple moving average and moving standard deviation. The analysis found the existence of weather effect in the one set of share returns but not in other set of share returns and it strongly affects both the shares.

[9] in the paper examined economy of India after implementation of LPG in 1991, started aligning with other countries in the world. Permission which was for FPIs to put their money in Indian stock markets is a significant change and step forward of integration. Shakiness of stock markets in India were increasing and it was also hypothesized that the instability of Indian markets were affecting global markets. The authors have tried check the explosive nature spillover of grown and growing nations. This study used daily index return data from BSE. The Johanssen's Co-integration test, GARCH model and BHHH algorithm were used in the study. The outcome from the study, show proof of co-integration with increase of impact of several international indices on returns and instability levels of the BSE.



[5]stated that NSE & BSE are the major stock exchanges in India with high capitalization rates. The study is specifically about the CNX bank & Bank Ex Index which are the index of banking sector for NSE & BSE respectively. The effect of Public Sector Banks (PSBs)and Private Sector Banks (PvSBs)on the closing values of index of banking sector of both the stock exchanges were studied. To analyze the regression model is applied on the banks closing prices and closing prices of the indices of both the Stock Exchanges. PSBs in the study have a strong relationship with the index value on the other hand PvSBs have a weak affiliation with the concluding value of index. Both the stock exchanges have similar results.

[2] Discussed about the way for forecasting India VIX employing Artificial Neural Network. In the procedure used by them, the first seven parameters are like opening and closing values of the day and highest and lowest values etc.They have also used another four input indicators which were measured by moving average of the last period ranging from 3 days to 15 days, India VIX values.

[4]have studied the state of inefficiency of Indian securities market during the internationaleconomicdistress in throughthe random walk model. The authors have usedday wise closing prices of four major indices of NSE and BSE during April 2005 to March 2010.. The authors have administered parametric and nonparametric tests to test inefficiency. The results show that the stock market in India was efficient during the period of recession.

[10]in their paper found that economics and customerattitude historyshowed that investors' savings decisions are influenced by their psychological factors. The

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.696 ^a	.485	-.030	170.21607
a. Predictors: (Constant), BANK15, FMCG15				

authors attempted toknowthe way investors' psychological factors affectsavingsinshare capital. They have also studied effects of product participation on the association between psychological factors and also savings decisions. Using a survey research design, data was collected and regression analysis was used. It was revealed that investor's psychological factors have drasticallyforceprocuredelay.

[1]has made an attempt to find out theassociationamongIndex futures and prime index of National Stock Exchange of India. The author has also examined the implementation of derivatives instruments in the Indian SecuritiesMarket during April 2000 to Feb 2013. The test used by the author explained that both market of derivatives and capital market are recognized with each other ingiving reply as the growth pact. The author has found that derivatives help in scheming the economic risk and managing to widen the economy of the nation.

[13] state in their paper that Retail Savings and economic investments are the significant of any country. Everycountry undertakes measures with central bank, Investment Banking regulator and other financial organizations. Individual's savings is highly appreciated by

any country. When some makessavings,he or she must have thorough idea about the alternatives available for investment. As a result of financial liberalization, one could easily understand the modern investment choices. The authors have attempted to study the consciousness of investors and familiarity about liberalization in financial instruments.

[7]have taken steps to explore the course of causation between the instabilities of forex and stock market indeces in India. The authors have used BSE-100 Index data and forex rates particularly Rupee against US Dollarfrom January 1992 to February 2013. The authors have administered Phillips Perron (PP) unit root test to make sure the static effect. GARCH model was used by them on all the available variables to compute the instability. The sequence of all variables was used for the test of Granger causality analysis by them. The outcome of Granger causality test illustrates a bidirectional connection between the exchange rate unpredictability and the inconsistency of stock market prices in India

V.RESULTS AND DISCUSSION

Table 1

Multiple Regressions and Correlations

H0: There is no relationship between Nifty budget 15 and FMCG and Bank funds

H1: There is relationship between Nifty budget 15 and FMCG and Bank funds

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	BANK15, FMCG15 ^a		Enter
a. All requested variables entered.			
b. Dependent Variable: NIFTYB15			

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54562.552	2	27281.276	.942	.515 ^a
	Residual	57947.020	2	28973.510		
	Total	112509.572	4			
a. Predictors: (Constant), BANK15, FMCG15						
b. Dependent Variable: NIFTYB15						

Coefficients ^a	
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Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2002.202	4849.971		.413	.720
	FMCG15	.176	.188	.497	.934	.449
	BANK15	.154	.227	.361	.679	.567

a. Dependent Variable: NIFTYB15

Multiple regression is given as - $Y = a + bX$

$$Y = (B1 * X1) + (B2 * X2) + A$$

$$Y = .176X1 + .154X2 + 2002.202$$

The significance level is $0.515 > 0.05$ H0 is accepted and H1 is rejected hence There is no relationship between Nifty budget 15 and Bank and FMCG funds

Table 2

Multiple Regressions and Correlations

H0: There is no relationship between Nifty budget 15 and IT and FS Funds

H1: There is relationship between Nifty budget 15 and IT and FS Funds

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	FS15, IT15 ^a		Enter

a. All requested variables entered.

b. Dependent Variable: NIFTYB15

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.981 ^a	0.963	0.926	45.73195

a. Predictors: (Constant), FS15, IT15

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	108326.750	2	54163.375	25.898	.037 ^a
	Residual	4182.822	2	2091.411		
	Total	112509.572	4			

a. Predictors: (Constant), FS15, IT15

b. Dependent Variable: NIFTYB15

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3398.618	1090.143		3.118	.089
	IT15	.204	.084	.626	2.425	.136
	FS15	.358	.236	.392	1.519	.268

a. Dependent Variable: NIFTYB15

Multiple regression is given as - $Y = a + bX$

$$Y = (B1 * X1) + (B2 * X2) + A$$

$$Y = .204X1 + .358X2 + 3398.618$$

The significance level is $0.037 < 0.05$ H0 is rejected and H1 is accepted hence There is a relationship between Nifty before budget 15 and IT and FS funds

Table 3

Multiple Regressions and Correlations

H0: There is no relationship between Nifty budget 16 and Bank and FMCG Funds

H1: There is relationship between Nifty budget 16 and Bank and FMCG Funds

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	BANKB16, FMCGB16 ^a		Enter

a. All requested variables entered.

b. Dependent Variable: NIFTYB16

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.992 ^a	.985	.970	42.63209

a. Predictors: (Constant), BANKB16, FMCGB16

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	235799.726	2	117899.863	64.869	.015 ^a
	Residual	3634.989	2	1817.495		
	Total	239434.716	4			

a. Predictors: (Constant), BANKB16, FMCGB16

b. Dependent Variable: NIFTYB16

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-151.963	1611.697		-.094	.933
	FMCGB16	.334	.146	.709	2.285	.150
	BANKB16	.079	.084	.292	.940	.446

a. Dependent Variable: NIFTYB16

Multiple regression is given as - $Y = a + bX$

$$Y = (B1 * X1) + (B2 * X2) + A$$

$$Y = .334X1 + .079X2 - 151.963$$

The significance level is $0.015 < 0.05$ H0 is rejected and H1 is accepted hence There is a relationship between Nifty budget 16 and FMCG and Bank funds

Table 4

Multiple Regressions and Correlations

H0: There is no relationship between Nifty budget 16 and IT and FS Funds

H1: There is relationship between Nifty budget 16 and IT and FS Funds

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	FSB16, ITB16 ^a		. Enter
a. All requested variables entered.			
b. Dependent Variable: NIFTYB16			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.995 ^a	.989	.979	35.66530
a. Predictors: (Constant), FSB16, ITB16				

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	236890.688	2	118445.344	93.116	.011 ^a
	Residual	2544.027	2	1272.014		
	Total	239434.716	4			
a. Predictors: (Constant), FSB16, ITB16						
b. Dependent Variable: NIFTYB16						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	-760.24	1007.37		-1.75	0.22
	ITB16	0.637	0.123	0.582	5.173	0.04
	FSB16	0.355	0.084	0.478	4.25	0.05
a. Dependent Variable: NIFTYB16						

Multiple regression is given as - $Y = a + bX$

$$Y = (B1 * X1) + (B2 * X2) + A$$

$$Y = .637X1 + .355X2 - 1760.244$$

The significance level is $0.011 < 0.05$ H0 is rejected and H1 is accepted hence There is a relationship between Nifty budget 16 and IT and FS funds

Table 5

Multiple Regressions and Correlations

H0: There is no relationship between Nifty budget17 and FMCG and Bank Sector funds

H1: There is relationship between Nifty budget17 and FMCG and Bank Sector funds

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	PBBANK17, PBFMCG17 ^a		. Enter

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	PBBANK17, PBFMCG17 ^a		. Enter
a. All requested variables entered.			
b. Dependent Variable: PBNIFTY18			

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.999 ^a	.999	.994	34.82444	.997	344.82	2	2	2	0.003
a. Predictors: (Constant), PBBANK17, PBFMCG17										

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	836353.801	2	418176.901	344.820	.003 ^a
	Residual	2425.483	2	1212.741		
	Total	838779.284	4			
a. Predictors: (Constant), PBBANK17, PBFMCG17						
b. Dependent Variable: PBNIFTY17						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	2002.712	380.053		5.270	.034
	PBFMCG17	.134	.072	.396	1.871	.202
	PBBANK17	.187	.065	.607	2.868	.103
a. Dependent Variable: PBNIFTY17						

Multiple regression is given as - $Y = a + bX$

$$Y = (B1 * X1) + (B2 * X2) + A$$

$$Y = .134X1 + .187X2 + 2002.712$$

The significance level is $0.003 < 0.05$ H0 is rejected and H1 is accepted hence There is a relationship between Nifty budget 17 and FMCG and Bank Sector funds

Table No.6

Multiple Regressions and Correlations

H0: There is no relationship between Nifty budget and IT and FSSector funds

H1: There is relationship between Nifty budget and IT and FS Sector funds

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	PBFS17, PBIT17 ^a		. Enter
a. All requested variables entered.			
b. Dependent Variable: PBNIFTY17			

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.994 ^a	.989	.978	68.31616	.989	88.861	2	2	.011
a. Predictors: (Constant), PBFS17, PBIT17									

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	829445.090	2	414722.545	88.861	.011 ^a
	Residual	9334.194	2	4667.097		
	Total	838779.284	4			
a. Predictors: (Constant), PBFS17, PBIT17						
b. Dependent Variable: PBNIFTY17						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1117.188	1341.888		.833	.493
	PBIT17	.189	.143	.109	1.322	.317
	PBFS17	.695	.061	.942	11.379	.008
a. Dependent Variable: PBNIFTY17						

Multiple regression is given as - $Y = a + bX$
 $Y = (B1 * X1) + (B2 * X2) + A$
 $Y = .189X1 + .695X2 + 1117.188$
 The significance level is $0.011 < 0.05$ H1 is accepted and H0 is rejected hence There is a relationship between Nifty budget 17 and IT and FS funds

Table 7
 Multiple Regressions and Correlations
 H0: There is no relationship between Nifty budget 18 and Bank and FMCG Funds
 H1: There is relationship between Nifty budget 18 and Bank and FMCG Funds

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	BANK18, FMCG18 ^a		Enter
a. All requested variables entered.			
b. Dependent Variable: NIFTY18			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.999 ^a	.999	.996	14.112
a. Predictors: (Constant), BANK18, FMCG18				

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	146620.232	2	73310.116	368.109	.037 ^a
	Residual	199.153	1	199.153		
	Total	146819.385	3			
a. Predictors: (Constant), BANK18, FMCG18						
b. Dependent Variable: NIFTY18						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2186.68	389.36		5.616	0.11
	FMCG18	0.083	0.017	0.215	4.968	0.13
	BANK18	0.24	0.012	0.87	20.11	0.03
a. Dependent Variable: NIFTY18						

Multiple regression is given as - $Y = a + bX$
 $Y = (B1 * X1) + (B2 * X2) + A$
 $Y = .083X1 + .240X2 + 2186.675$
 The significance level is $0.037 < 0.05$ H0 is rejected and H1 is accepted hence There is a relationship between Nifty budget 18 and FMCG and Bank funds

Table 8
 Multiple Regressions and Correlations
 H0: There is no relationship between Nifty budget 18 and IT and FS Funds
 H1: There is relationship between Nifty budget 18 and IT and FS Funds



Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	FS18, IT18 ^a		Enter
a. All requested variables entered.			
b. Dependent Variable: NIFTY18			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000 ^a	.999	.998	9.681
a. Predictors: (Constant), FS18, IT18				

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	146725.65	2	73362.83	782.69	.025 ^a
	Residual	93.731	1	93.731		
	Total	146819.39	3			
a. Predictors: (Constant), FS18, IT18						
b. Dependent Variable: NIFTY18						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-512.566	442.509		-1.158	.453
	IT18	.005	.017	.008	.291	.820
	FS18	1.039	.029	1.003	35.913	.018
a. Dependent Variable: NIFTY18						

Multiple regression is given as - $Y = a + bX$

$$Y = (B1 * X1) + (B2 * X2) + A$$

$$Y = .005X1 + 1.039X2 - 512.566$$

The significance level is $0.025 < 0.05$ H0 is rejected and H1 is accepted hence There is a relationship between Nifty budget 18 and IT and FS funds

VI.CONCLUSION

In this study, the authors have carefully tried to identify the incidence of volatility in Nifty Sector index. The statistical investigation was carried by taking multiple correlation and regression with Anova, to find the level of instability and the level of dependence on one another. It also shows the movement of one index to the ratio of increase and decrease in the other sector index. Giving weightage to all, the estimation of return of various instructions is not sufficient in making economic decisions. Those who save could scrutinize the performance of the provisional divergence of the return on the asset to approximation of the uncertainties of the asset during specific period. This could result in making the securities market investment more costlier than the money market instruments. To increase the market depth, the information about the markets be permitted to

surge unimpeded and nonaggressive trading on a plethora of securities.

REFERENCES

1. BhagyaLakshmi.K, "Performance of financial derivatives (Futures) in Indian capital market", International Journal of Innovative Technology and Adaptive Management (IJITAM) 2014ISSN: 2347-3622, 1(5).
2. Dixit, Roy and Uppal, "Predicting India Volatility Index: An Application of Artificial Neural Network", International journal of finance and artificial network, 2013.
3. Harper, Alan H., "Co movements and stock market integration between India and its top trading partners: A multivariate analysis of international portfolio diversification", Capella University, ProQuest Dissertations Publishing, 2011. 3454746.
4. Jain, Priyanka; Vyas, Vishal; Roy, Ankur, "A study on weak form of market efficiency during the period of global financial crisis in the form of random walk on Indian capital market", Journal of Advances in Management Research; Bingley Vol. 10, Iss. 1, (2013): 122-138. DOI:10.1108/09727981311327802
5. Janglani, Silky; Sandar, Simranjeet Kaur, "An Empirical Study on Impact of Public Sector and Private Sector Banks on Bank Ex-Index of NSE and BSE", Anvesha; Mumbai Vol. 6, Iss. 3, (Aug/Sep 2013): 14-25.
6. Kang, S. H., Jiang, Z., Lee, Y., & Yoon, "Weather effects on the returns and volatility of the Shanghai stock market.", S. M. Journal of weather and finance, 2010, Physica A, 389, 91-99
7. Khan, Rana Ejaz Ali; ur Rehman, Hafeez; Ali, Rafaquat. "Volatility in Stock Market Price and Exchange Rate: The Case Study of Bombay Stock Exchange", International Journal of Economic Perspectives; Mersin Vol. 10, Iss. 2, (2016): 110-116.
8. Devshree Pathak (2014) Novel Concept of Drug Delivery Based on Chronotherapy: A Review. International Journal of Pharmacy Research & Technology, 4 (2), 23-27.
9. Pandey, Alok; Kumar, Surya Bhushan, "Volatility Transmission from Global Stock Exchanges to India: An Empirical Assessment", Vision-The Journal of Business Perspective Gurgaon Vol. 15, Iss. 4, (Dec 2011): 347-360.
10. Pandit, Ameet; Yeoh, Ken, "Psychological Tendencies in an Emerging Capital Market: A Study of Individual Investors in India", The Journal of Developing Areas; Nashville Vol. 48, Iss. 3, (Summer 2014): 129-148.
11. Punithavathy Pandian, "Stock Market Volatility in Indian Stock Exchanges", Journal of research and finance, 2009
12. Soltanian, M., Molazem, Z., Mohammadi, E., Sharif, F., Rakhshan, M. "Professional responsibility: An ethical concept extracted from practices of Iranian nurses during drug administration", (2018) International Journal of Pharmaceutical Research, 10 (3), pp. 346-353.
13. Sankararaman G. and Vembu T.S, "Knowledge and awareness about Financial Liberalization – A study with reference to Investors in Chennai", Research Journal of Social Science and Management :Volume:04,Number:11, March 2015 Pages 127 -139

