

An Event Study Analysis of Impact of General Elections on Stock Market Performance (Nse National Stock Exchange)

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ABSTRACT

Stock Market which is the barometer of the economy gets affected by many factors in the economy. Different economic factors make the stock market move in either direction. Political factor is one of the crucial factors among all other factors. Especially the elections and there results makes a sea change in the stock markets. This study is conducted with the sample of companies from different sectors to find out the impact of elections on investment decisions of the investors as well as on the stock returns on their investments. The study has found that INDEX which is the indicator of stock market volatility shows abnormal movements during the period of elections announcement up to the election results. This abnormality causes surprise and anxiety amongst the investors resulting into the sentimental decisions. This study is mainly focused on effects of 14th Loksabha elections. The study is conducted on sample of 4 company stocks picked from different sectors from NSE List. The data is considered from the ten days before and 10 days after (-10, +10) announcement of election results. This study is conducted with the help of event study methodology. In the event study, single factor model is applied on the secondary data of the selected stocks of NSE to analyze the results.

Key Words: - Elections, Stock Market, Impact, Event Study

Introduction:-

In India tenure of an elected Government is of 5 years. After every five years or after the dissolution of the Government before the completion of the tenure, elections are announced by the President. The Indian general election of 2014 was held to constitute the 16th Lok sabha, electing members of parliament for all 543 parliamentary constituencies of India. This historical election was the longest election conducted over a period of 7th April to 14th May 2014. The results were declared on 16th May 2014. The Bhartiya Janta Party (BJP) emerged as a single largest party with a sweeping victory, taking 336 seats. It is the first time since the 1984 in Indian general elections that a party has won enough seats to govern without the support of other parties. This landslide victory had brought a new array of optimism and hope across the economic front of the Indian State. Right from common man up to the industrialist everybody had great expectations from the new government. During the different phases of the election and especially after the declaration of the exit polls it was almost assumed that BJP would form the new government with full majority. This particular event had brought a positive movement in the Indian stock exchanges. Stock Market which is barometer of the economy had already sniffed the change and had behaved accordingly. Due to the different sentiments, excitements and strategies of all the players in the stock market, as expected share prices of important stocks showed a great volatility during the period of election and specially after the declaration of the results.

Event Study: - An **event study** is a statistical method to assess the impact of an event on the value of a firm. The event methodology can be used to elicit the effects of any type of event on the direction and magnitude of stock price changes, it is very versatile. Event studies are thus common to various research areas, such as accounting and finance, management, economics, marketing, information technology, law, and political science. On the one hand, there is research investigating the stock market responses to economy-wide events (i.e., market shocks, such as regulatory changes, or catastrophic events). On the other hand, event studies are used to investigate the stock market responses to corporate events, such as mergers and acquisitions, earnings announcements etc.



OBJECTIVE OF THE STUDY:-

To analyze the movement of NSE index with the help of selective 4 individual Companies stocks during the event of 14^h Loksabha election.

To find out whether this event of Loksabha election makes any significant effect on price movements and returns of the selected 4 stocks of individual companies.

LIMITATION OF THE STUDY

Only NSE Index was used to collect data.

Only Lok Sabha Election 2014 details were used to collect data.

Only Selected Stocks from different sectors in the economy were chosen as the sample study which is very small to generalize the conclusions.

Research Methodology:-

For this study the Single Factor Market Model was chosen which is very popular and gives the results within certain limitations. Market Model, which is assumed to have 'a liner relationship between the expected return of a company's share price and the stock market index. "The market model states that the security's performance is related to its portfolio's performance according to its beta. Thus the expected return of a security can be calculated by using the Simple Liner Regression Model based on the market return. In statistics, simple linear regression is any approach to modeling the relationship between one scalar variable y and one variable denoted X. The aim is to find out the relationship between two sets of values in order to build the equation and model the unknown parameters.

Companies Selected For the Study:-

The following 4 Companies Individual stocks were considered for the analysis of study.

Sr. No.	Name of the Company	Name of the Sector
1	ONGC	Public Sector
2	Reliance Industries	Conglomerate
3	Maruti Suziki	Automobile
4	Airtel	Telecommunication

STEPS Followed in the research methodology can be summarized as follows;

Step 1:- Selection of event window for the event study:-

TIMELINE OF EVENT STUDY:-



Figure 1.1:- Typical Event Study Windows.

The Window concepts in above diagram can be explained as below;

1. **Estimation Window: -** The estimation window is the period of trading days before the event date) that is used to estimate the expected return for each assent and each event.



2. **Event Window:-**The event window is the period of trading days over which you want to calculate abnormal returns. In many studies the maximum event window includes 41 trading days symmetrically surrounding the identified event day, abbreviated (-20, +20)

For the study purpose; following window period were fixed for the research

Event Day: - 16th May 2014 (Date of announcement of Loksabha Elections

Estimation Window: - One year before the event window i.e. share prices of the period 2-05-2013 to 30-04-2014.

Event Window: - The event window for which the actual abnormal returns are (-10, +10) calculated is 10 days before and 10 days after the date of actual announcement of election results. The event window dates considered for study are of the period 2nd May 2014 to 30th May 2014.

Step-2:- Calculation of the Return: - The return on the share prices of the company is selected for the study and the market return in which the shares of the selected companies are traded.

Return on Share price of the Selected Company:-

Since we want to see the impact of some particular event on the share prices of the particular company, the next step is to calculate the return on the share prices. One can use the following formula to calculate the return on share prices:

$$Rt = \frac{P_{it} - P_{it-1}}{P_{it-1}}$$

Where;

 \mathbf{R}_{it} is the return of company "i" in time period "t", \mathbf{P}_{it} is the closing share price in time period *t* and \mathbf{P}_{t-1} is the closing share price in time period "*t*-1"

Market Return:-

To calculate the expected return the data for the market return is necessary. The market return for the study will depend on the company selected for the study. For this study the Nifty-Fifty daily closing prices were taken for the period of 2-05-2013 to 30-04-2014.

Step-3:- Calculation of the expected Return:-

Event study helps to examine a significant difference between the expected return of the share prices and the actual return of the share prices. Calculation of actual return is shown in (step 2). Expected return of the share price can be calculated by regression with the following equation:

$$E(R_{it}) = \alpha_i + \beta_i R_{mt} + \varepsilon_t$$

Where;

E (R_{it}) is the expected return on share price.

R_{mt} is market return at the time period t.

Step-4:- Calculation of Abnormal Return:-

The abnormal return is the difference between the actual return and the market return. It is calculated as:



Abnormal Return = Actual Return – Expected Return

Step -5:- Calculation of Cumulative Abnormal Return:-

The cumulative average abnormal return for the study period is calculated as follows:



Step-6:- Conducting T Test:- (Significance Test)

The last and the final step of the event study is to test whether the event leads to abnormal return in the share prices or not using t- test.

t- test is performed as follows:

AR/ standard error

Now if the average abnormal return is within the range from -1.96% to +1.96% (95% Significance Level) then the resulted value will be considered as significant.

The actual study is done in excel and all the necessary formulas for the above calculation from Step 1 to Step 5 are utilized to find the results.

Results and Discussion:-

Result No.1:- Showing Application of Single Factor Model on the Share Prices and returns of ONGC for the event period.

 Table 1.1.1 Calculations of Different Variables

Single Factor Model	
	-
INTERCEPT	0.05835
	1.210
SLOPE	737
	1.620
STANDARTD ERROR	662
	0.415
RSQARE	416

Table 1.1.2:- Calculation of T Test and Significance Test:-

Event Window	Date	Abnormal Return	T Stat	Significance Test	Cumulative Abnormal Return
	30-		0.		
	May-14	1.217179	751038	NO	17.79437
	29-		-		
	May-14	-2.5099	1.54869	NO	16.57719
Post Event	28-		-		
Window	May-14	-2.61813	1.61547	NO	19.08709
	27-	-2.40776	-	NO	21.70522



	May-14		1.48566		
	26-		-		
	May-14	-0.49794	0.30725	NO	24.11297
	23-		2.		
	May-14	3.938168	429974	YES	24.61092
	22-		-		
	May-14	-1.27438	0.78633	NO	20.67275
	21-		-		
	May-14	-0.25949	0.16011	NO	21.94713
	20-	0 000 / /	-		~~~~~
	May-14	-3.92344	2.42088	YES	22.20662
	19- Mav-14	8 299106	5. 120811	YES	26 13005
Event Day	16-	0.233100	120011	120	20.10000
Event Day	May-14	1.622257	000984	NO	17.83095
	15-		0.		
	May-14	2.953116	751038	NO	16.20869
	14-		-		
Pre Event	May-14	-1.06132	1.54869	NO	13.25558
Window	13-		-		
	May-14	3.983553	1.61547	YES	14.31689
	12-		-		
	May-14	3.168641	1.48566	NO	10.33334
	9- May 14	1 215513	- 0 30725	VEQ	7 16/600
	lvidy-14	4.243343	0.00720	IL3	7.104099
	May-14	-0.18996	4 <mark>29</mark> 974	NO	2.919156
	27-				Ine
	May-14	-0.45604	0. <mark>78</mark> 633	NO	ž 3.109112
	<u>5</u> 6-				ge
	May-14	0.689001	0.16011	NO	2 3.565152
	5-				Ma
	May-14	1.98923	2.42088	NO 💊	2.876151
	2-		5 .		0.00000/
	May-14	1.4374	120811	NO	0.886921

So after analyzing the above tables & Graph it is seen that the model applied shows significant impact of General Elections 2014 on return of ONGC Shares during the event period. The significant impact is observed before and after the event date i.e. 16th May 2014.

Result No.2:- Showing Application of Single Factor Model on the share prices & returns of Reliance Industries for the event period.

Table 2.1.1 Calculations of Variables:-

Single Factor Model	
INTERCEPT	-0.05835
SLOPE	1.210737
STANDARTD ERROR	1.620662
RSQARE	0.415416



Table 2.1.2 Calculation of T Test and Significance Test:-

Event Window	Date	Abnormal Return	T Stat	Significance Test	Cumulative Abnormal Return
	30-		-		
	May-14	-0.75475	0.65681	NO	11.59567
	29-	4 00 4 00	-		10.05040
Pre Event Window	May-14	-1.03123	0.89741	NO	12.35042
	20- May-14	-1.14712	0.99826	NO	13.38165
	27- May-14	-1.79203	- 1.55948	NO	14.52877
	26-		-		
	May-14	-2.3104	2.01058	YES	16.32079
	23- May-14	2.392126	2. 081699	YES	18.63119
	22-		1.		
	May-14	2.055873	789082	NO	16.23907
	21- May-14	-0.13437	- 0.11693	NO	14.1832
	20-		-		
	May-14	-3.65512	3.18079	YES	14.31756
	19- May-14	3.710697	3. 22916	YES	17.97268
Event Day	16-	0.404000	2.	2/50	44,00400
	May-14	2.424333	109727	YES	14.26198
	тэ- Мау-14	0 752779	0. 655091	NO	11 83765
	14-	0.102110	-		11.00700
	May-14	-1.69761	1.47731	NO	11.08487
Post Event	13-		2.		
Window	May-14	3.317545	887027	YES	12.78248
	12- May-14	3.069875	2. 671497	YES	9.464936
	9-		3.		
	May-14	3.810666	316155	YES	6.395061
	8- May-14	-0.05726	- 0.04983	NO	2.584395
	7-		-		
	May-14	-0.25985	0.22613	NO	2.641652
	6- Mav-14	1.727611	1. 503419	NO	2.901501
	5-		1.		
	May-14	2.00012	740564	NO	1.17389
	2- May-14	-0.82623	- 0.71901	NO	-0.82623

So after analyzing the above table, it is seen that the model applied shows significant impact of General Elections 2014 on return of Reliance Industries during the event period. The significant impact is observed before and after the event date i.e. 16th May 2014.



Result No.3:- Showing Application of Single Factor Model on the share prices & returns of Maruti Suzuki India Ltd. for the event period.

Table 3.1.1 Calculations of Variables

Single Factor	
Model	
	0.0
INTERCEPT	15199
	0.8
SLOPE	87187
STANDARTD	1.6
ERROR	40246
	0.2
RSQARE	71406

Table 3.1.2 Calculation of T Test and Significance Test:-

Event Window	Date	Abnorm al Return	T Stat	Significa nce Test	Cumul ative
					Abnormal Return
	30-				16.810
	May-14	-1.43297	0.87363	No	67
	29-		0.6415		18.243
	May-1 <mark>4</mark>	1.052321	63	No	64
Post Event	28-				17.191
Window	May-14	-1.34083	0.81746	No	32
	27- a			en l'a	18.532
	Ma <mark>y-14</mark>	-1.96204	1.19618	No	15
	<u>a</u> 26-		-	<i>B</i>	20.494
	May-14	-1.88491	1.14916	No	19
	23-	E 0000	3.1/44		22.379
	May-14	5.2069	63	YES	1
	22- May 14	1 212002	2.6293	NTO VEO	17.172
	101ay-14	4.312002	03		2 12 950
	∠ I- Mav-1/	Rec. 1 13679	0.69306	pp" No	12.059
	20-	-3631.10013		NU	13 996
	May-14	-0.9368	0.57113	No	19
	19-	010000	1.7452		14,932
	May-14	2.862703	89	No	99
Event	16-		0.9794		12.070
Day	May-14	1.606592	82	No	29
	15-		0.9472		10.463
	May-14	1.553665	15	No	7
	14-		-		8.9100
	May-14	-0.24667	0.15039	No	32
Pre Event	13-		1.1913		9.1567
Window	May-14	1.95405	16	No	06
	12-	0 700057	2.2739		7.2026
	May-14	3.729857	62	YES	56
	9-May-	4.040004	2.4648	VEO	3.4/2/
	14	4.042964	52	YES	99



8-May-		0.4954		-
14	0.812636	35	No	0.57016
7-May-		-		-
14	-1.52977	0.93265	No	1.3828
6-May-		0.3970		0.1469
14	0.651246	42	No	67
5-May-		0.4659		-
14	0.764301	67	No	0.50428
2-May-		-		-
14	-2.08078	1.26858	No	1.26858

So after analyzing the above table, it is seen that the model applied shows significant impact of General Elections 2014 on return of Maruti Suzuki India Ltd. during the event period. The significant impact is observed before and after the event date i.e. 16th May 2014.

Result No.4:- Showing Application of Single Factor Model on the share prices & return of Airtel for the event period.

 Table 4.1.1 Calculations of Variables

Single Factor Model	
	-
INTERCEPT	0.03645
	1.1
SLOPE	41371
STANDARTD	1.7
ERROR	38159
	0.3
RSQARE	54436

Table 4.1.2 Calculation of T Test and Significance Test:-

Event Window	Date	Abnormal Boturn	T Stat	Significance	Cumulative Abnormal
		Return	0.040	Test	Return
	30-		2.048		
	May-14	2.048269	269001	YES	4.731763
	29-		-		
	May-14	-0.09051	0.09051249	No	-0.87554
	28-		-		
Post Event	May-14	-0.11184	0.11184218	No	2.683494
Window	27-		-		
	May-14	-1.42048	1.42048061	No	-0.78503
	26-		-		
	May-14	-1.21498	1.21497506	No	2.795336
	23-		3.268		
	May-14	3.268313	313081	YES	0.635455
	22-		-		
	May-14	-1.99441	1.9944105	YES	4.010311
	21-		-		
	May-14	-2.40239	2.40238678	YES	-2.63286
	20-		2.727		
	May-14	2.72711	110308	YES	6.004721
	19-		2.227		
	May-14	2.227463	463347	YES	-0.23047



	16-		2.867		
	May-14	2.867635	634969	YES	3.277611
	15-		-		
	May-14	-0.55849	0.55848733	No	-2.45793
	14-		1.245		
	May-14	1.245346	346107	No	0.409976
	13-		0.518		
	May-14	0.518258	257933	No	-1.89945
Pre Event	12-		2.583		
Window	May-14	2.583876	875806	YES	-0.83537
	9-		0.469		
	May-14	0.469675	674521	No	-2.4177
	8-		-		
	May-14	-0.96931	0.96931292	No	-3.41925
	7-		-		
	May-14	-1.24622	1.24622159	No	-2.88738
	6-		-		
	May-14	-1.70029	1.70029285	No	-2.44993
	5-		-		
	May-14	-1.64116	1.64115775	No	-1.64116
	2-		-		
	May-14	-0.74964	0.74964017	No	-0.74964

It is seen from the above table that; return of Airtel has significant impact of the General Election 2014. And the significance test is "Yes" before, during and after the announcement of the election results.

Conclusion:-

This research is an attempt to analyze the effect of General Elections (2014) on the stock exchange (NSE) with the help of 4 individual stocks of different sectors. After application of event study model on the selected stocks it can be concluded that there is significant relationship between Loksabha elections and stock market. There is a positive reaction of stock market during the election time. The Selected companies showed abnormal returns during the selected event. Many endogenous and exogenous factors can also affect on the share prices of the stocks and market but political factor like election also causes fluctuations in the market. So this event shows that the political events like election and stock market movements are intertwined.

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