

Reactions to the Union Budgets by the Sectoral Indices of NSE

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Abstract

The Budget is a financial statement that shows the future economic activity of a country. Being the most watched event of the nation, it has an immediate impact on the behavior of the equity market. In India, NIFTY and SENSEX are the two important broader market indices that dance to the cues of the budget speech by the Finance Minister on the budget day. Depending on the nature of information, the other sectoral indices too behave either positively or negatively in the stock market. The present study examined the impact of the Union Budgets on the behavior of 11 sectoral indices of NSE based upon the indices' movement prior to and subsequent to the budget day. The event window period was categorized into short term, medium term, and long term, and for the analysis purposes, Wilcoxon matched pairs test was applied to measure the nature and extent of the impact of the budget.

Keywords: event window, sectoral indices, Union Budget, Wilcoxon matched pairs test

JEL Classification: G14, G18, G32

Paper Submission Date : January 19, 2015 ; **Paper sent back for Revision :** April 10, 2015 ; **Paper Acceptance Date :** May 8, 2015

The share price movements are always unpredictable and are influenced by various factors in any equity market. Empirical studies have proven that the price behaviors of shares are influenced by both micro and macro events. Micro events like bonus issues, dividend declaration, rights issue influence the price behavior of the respective shares as these factors are pertinent to particular scrips, and the price movements of scrips do behave according to the nature and extent of the respective corporate events. Lazar and Pramod (2010) confirmed this view that the corporate actions have an impact - either positive or negative - on the share price movements of the scrips based on the nature of the events. Events common to the market, that is, macro events like the release of IIP (index of industrial production) data, inflation rate declaration, policy decisions by the Central bank, and budget announcements do have a significant impact on both the price behavior of the scrips and on the broader market.

The Union Budget is the most watched event by the market players since it handles the fiscal issues like taxation, expenditure, and the fiscal deficit, which are obviously the macroeconomic event factors which significantly influence the behavior of the equity market. Rao (1997) studied the impact of the macroeconomic events on stock price behavior, and attested this view that the macroeconomic events have a major impact on the share price movements.

A budget is a powerful economic tool in the hands of the government to have a control on the economic affairs of the country. Budget announcement, a major event, has an influence on the performance of the market. Verma and Agarwal (2005) concluded from their study that the budget event has a significant impact on the behavior of the stock market. Normally, the budget contains proposals regarding various policies and reforms like changes in the tax policy, industrial policy, exchange rate policy, trade policy, various sectoral reforms, and so on. All these

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changes may either have a positive or negative impact on the behavior of the market as a whole and on other sectors too. Since the budget proposals do not have an equal impact on every sector, the present study has made an attempt to explore the nature and extent of the impact of various Union Budgets on various sectoral indices of the National Stock Exchange (NSE).

Literature Review

A study conducted by Thomas and Shah (2002) to find the interrelationship between the Union Budget and Indian equity market found that the stock market appeared to be fairly efficient at information processing about the Union Budget. Gupta and Kundu (2006) studied the impact of the Union Budget on the Indian stock market by considering the volatility and returns in the Sensex. The study revealed that budget had a significant impact on the short term returns during the post budget period as compared to the medium term and long term returns. They also observed that the volatility did not increase during the post budget period as compared to the pre budget period.

Singh and Kansal (2010) examined the impact of the Union Budget from 1996 to 2009 on the stock market as represented by Nifty in terms of returns and volatility. The impact was studied prior to and subsequent to the budget day. The results suggested that the budgets had the maximum impact on the short term returns, with some impact extending to the medium term returns, and there was no significant impact on the long-term returns.

Saraswat and Banga (2012) analyzed the returns and volatility of the Sensex with respect to the Union Budget of India. The paper studied the impact of the Union Budget on the Sensex from 1995 to 2010, and the index movements were studied prior to and subsequent to the budget day. The time periods were segregated into short term, medium term, and long term periods. With regard to the returns, the study found that the budgets had the maximum impact in the short term period, with some impact extending into the medium term, and there was no significant impact in the long term periods.

Chotalia (2013) attempted to measure the pre and post impact of the Union Budgets on the stock market index. She selected six consecutive budgets from 2007 to 2011, including the interim budget 2009 for analytical purposes and found that all the Union Budgets had a significant impact on the stock market, with the exception of the interim budget for the year 2009.

A study to understand the impact of budget announcements and market performance in India, the U.S., and UK conducted by Khanna and Gogia (2014) revealed that the budget influenced the performance of UK and Indian equity markets significantly in the short term and medium term. However, budget announcements did not have any significant impact on the long term performance of the market. In the case of the U.S. market, the study found that the budget mainly affected the U.S. stock market in the medium term and long term. The authors observed that this was due to the reason that the budget process takes much time in USA.

A study conducted by Pandya (2014) to ascertain the impact of the Union Budget on the Indian Stock Exchange with special reference to the BSE-Sensex Index found that the steepest rise in the Sensex occurred thrice in the study period from 1993 to 2013. Budget for the year 1997 was considered to be a dream budget, which gave the highest positive returns to the investors. There was a steepest cut experienced during the year 2000 and 2009. The market, on an average for 20 years of data, suggested a lack of abnormality in any time frame, and that the efficiency of digesting the event had improved over a period of time. The study concluded that the stock market appeared to be fairly efficient at information processing about the Union Budget.

Need for the Study

From the literature review, it is clear that the research studies conducted so far to understand the impact of the Union Budget on the stock market considered only the broader market indices - either NIFTY or SENSEX - as the indicator to know the reaction of the stock market in India. These studies discussed the results about the impact of the Union Budgets on the overall market only. Hence, we felt a need for a deeper insights into the various sectoral

indices of the National Stock Exchange (NSE) excluding Nifty and, hence, we attempted to analyze the nature and extent of the impact of the Union Budget on the various sectoral indices of NSE.

Objective of the Study

The objective of the study is to find the nature and extent of the impact of the Union Budget on the selected 11 sectoral indices of the National Stock Exchange.

Hypotheses

- H_0 (Null hypothesis): There is no impact of the Union Budget on the sectoral indices of NSE.
- H_A (Alternate hypothesis): There is a significant impact of the Union Budget on the sectoral indices of NSE.

Research Design

For the purpose of finding the impact of the Union Budget on various sectoral indices of NSE, the data were collected from www.nseindia.com, the official website of the National Stock Exchange, where accurate and reliable information is available, and the data relating to the day of the budget presentation were taken from www.indiabudget.nic.in. The daily closing prices of the selected 11 sectoral indices were collected for a period of 30 days before and after the budget day of the respective financial year, and the data were categorized as short term (event window of before and after 10 days), medium term (event window of before and after 20 days), and long term (event window of before and after 30 days) to ascertain the nature and extent of the impact. The period of the study is from 2004 to 2013, that is, 10 years, and the interim budgets during this period have been excluded. The data were analyzed by applying the Wilcoxon matched pairs test and on the basis of the results, the interpretations have been made.

↳ **Analytical Tools** : The mathematical model, Wilcoxon matched pairs test, is a non parametric method, which gives not only the nature of deviation between the pairs of data, but also the magnitude of the differences between the pairs. Application of this tool in this study would give clarity to the investors about not only the nature of impact, but also the extent of impact of the Union Budgets on the sectoral indices of NSE, for taking right decisions relating to their investments.

The methodology for analyzing the data by applying the Wilcoxon matched pairs test is as given below :

- ↳ For each pair of values, the differences were calculated ($D = X_i - Y_i$), where X_i is the value of the selected index before the budget and Y_i is the value of the selected index after the budget.
- ↳ We omitted all the observations with equal values to reduce the sample size accordingly.
- ↳ Ranked the differences in ascending order ignoring the signs and in case of a tie, ranks were assigned by using the average method.
- ↳ The sum of ranks with positive differences ($\sum +$) and the sum of ranks with negative ($\sum -$) differences were found and the T - statistic was defined as the smallest of the two sum of ranks, that is, $T = \min(\sum + \text{ or } \sum -)$.
- ↳ We then applied the formulae given below to find the Z value, and the following decision rule was adopted to test the hypothesis :

Mean of T: $E(T) = n(n+1)/4$

Table 1. Impact of Union Budgets on the Sectoral Index - CNX IT

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $
2004	414	51	3.73	189	21	3.14	34	21	0.66
2005	441	24	4.29	189	21	3.14	53	2	2.60
2006	465	0	4.78	210	0	3.92	55	0	2.80
2007	0	465	4.78	0	210	3.92	0	55	2.80
2008	78	387	3.18	0	210	3.92	0	55	2.80
2009	442	23	4.31	187	23	3.06	32	23	0.46
2010	428	37	4.02	210	0	3.92	55	0	2.80
2011	91	374	2.91	32	178	2.73	14	41	1.28
2012	0	465	4.78	0	210	3.92	0	55	2.80
2013	410	55	3.65	208	2	3.85	53	2	2.60

Table 2. Impact of Union Budgets on the Sectoral Index - CNX Pharma

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $
2004	244	221	0.24	162	48	2.13	54	1	2.70
2005	223	242	0.20	131	79	0.97	54	1	2.70
2006	463	2	4.74	208	2	3.85	54	1	2.70
2007	230	235	0.52	32	178	2.75	0	55	2.80
2008	465	0	4.78	210	0	3.92	55	0	2.80
2009	436	29	4.19	181	29	2.84	34	21	0.66
2010	465	0	4.78	210	0	3.92	55	0	2.80
2011	35	430	4.06	33	177	2.69	18	37	0.97
2012	442	23	4.31	187	23	3.06	32	23	0.46
2013	426	39	3.98	171	39	2.46	39	16	1.17

Standard deviation of T : $\sigma T = \sqrt{n(n+1)(2n+1)/24}$

Z-test statistic : $Z = (T - E(T)) / \sigma T$

➤ **Decision Rule:** Find the table value of Z_α for a given α level of significance and accept the null hypothesis if the calculated value of $|Z|$ is less than the table value of Z_α , otherwise reject the null hypothesis.

Analysis and Results

The analytical results after applying Wilcoxon matched pairs test are given for the selected 11 sectoral indices (Table 1 - Table 11) along with the results obtained and interpretations. Ten calculations are made for every window period, that is, for long term, medium term, and short term, and the calculated $|Z|$ values are compared with the table values at the 5% significance level ($Z_\alpha = 1.96$, $Z_\alpha = 2.09$, and $Z_\alpha = 2.26$: table values for two-tailed test) and the interpretations are made accordingly. The nature of impact can be interpreted as positive when the Σ^-

Table 3. Impact of Union Budgets on the Sectoral Index - CNX FMCG

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ^-	Σ^+	Z	Σ^-	Σ^+	Z	Σ^-	Σ^+	Z
2004	376	89	2.95	210	0	3.92	55	0	2.80
2005	183	282	1.02	57	153	1.79	51	4	2.40
2006	465	0	4.78	210	0	3.92	55	0	2.80
2007	0	465	4.78	0	210	3.92	0	55	2.80
2008	316	149	1.72	86	124	0.71	0	55	2.80
2009	465	0	4.78	210	0	3.92	55	0	2.80
2010	465	0	4.78	210	0	3.92	55	0	2.80
2011	464	1	4.76	210	0	3.92	55	0	2.80
2012	465	0	4.78	210	0	3.92	55	0	2.80
2013	262	203	0.61	129	81	0.90	16	39	1.17

Table 4. Impact of Union Budgets on the Sectoral Index - CNX METAL

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ^-	Σ^+	Z	Σ^-	Σ^+	Z	Σ^-	Σ^+	Z
2004	460	5	4.68	205	5	3.73	50	5	2.29
2005	465	0	4.78	210	0	3.92	55	0	2.80
2006	465	0	4.78	210	0	3.92	55	0	2.80
2007	25	440	4.27	0	210	3.92	0	55	2.80
2008	0	465	4.78	0	210	3.92	0	55	2.80
2009	351	114	2.44	122	88	0.64	15	40	1.27
2010	395	70	3.34	185	25	2.99	55	0	2.80
2011	83	382	3.08	52	158	1.98	19	36	0.87
2012	3	462	4.72	3	207	3.81	3	52	2.50
2013	0	465	4.78	0	210	3.92	0	55	2.80

values are higher than the Σ^+ values, where Σ^- represents that the closing price of the respective index after the budget event is higher than the closing price of the respective index before the budget event, and the nature of impact is said to be negative when Σ^+ values are higher than the Σ^- values, where Σ^+ represents that the closing price of the respective index before the budget session is higher than the closing price of the respective index after the budget event.

The Table 1 exhibits the impact of the Union Budgets on the CNX-IT sectoral index of NSE. All the calculated |Z| values for both long and medium terms are greater than the respective table values and hence, it is inferred that the budgets had a significant impact - either positive or negative - on the CNX-IT sectoral index of NSE. Regarding the short term, the calculated |Z| values of eight observations are greater than the table value, and hence, this sector witnessed moderate impact during this period. Out of the total 30 calculations, 28 calculated |Z| values (93%) are greater than the respective table values and out of 28, 16 observations (53%) show a positive impact and only 12 observations (40%) show a negative impact, which reveals that this sector was positively influenced by the Union Budgets.

The Table 2 shows the nature and extent of influence of the Union Budgets (from 2004 to 2013) on the sectoral

Table 5. Impact of Union Budgets on the Sectoral Index - CNX PSU

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $
2004	185	310	1.59	123	87	0.67	27	28	0.05
2005	465	0	4.78	210	0	3.92	55	0	2.80
2006	406	59	3.57	208	2	3.85	53	2	2.60
2007	0	465	4.78	0	210	3.92	0	55	2.80
2008	0	465	4.78	0	210	3.92	0	55	2.80
2009	189	276	0.90	87	123	0.67	3	52	2.50
2010	465	0	4.78	210	0	3.92	55	0	2.80
2011	423	42	3.92	170	40	2.43	25	30	0.26
2012	2	463	4.74	1	209	3.88	0	55	2.80
2013	0	465	4.78	0	210	3.92	0	55	2.80

index of CNX Pharma. Out of 30 calculations, 22 calculated $|Z|$ values (73%) are greater than the respective table values, which reveals that this sector was significantly influenced by the Union Budgets. The higher level of impact was on the medium term (90%), followed by the long term (70%), and short term (70%). As far as the nature of the impact is concerned, 18 observations show a positive impact, four observations show a negative impact, and eight observations show no impact, which reveals that a moderate positive impact of the Union Budgets (60%) was experienced by this sector.

The Table 3 represents the impact of the Union Budgets on the sectoral index of CNX FMCG. As far as the extent of the impact is concerned, out of 30 calculated $|Z|$ values, 24 values (80%) are greater than the respective table values, which shows that this sector was highly influenced - either positively or negatively - by the Union Budgets. It is observed that nine observations (90%) have higher calculated $|Z|$ values than the table values during the medium term, seven observations (70%) have higher calculated $|Z|$ values during the long term, and only six observations (60%) have higher calculated $|Z|$ values during the short term. Regarding the nature of the impact, out of 30 observations, 18 observations (60%) show a positive impact and only six (6) observations show a negative impact. Hence, it may be interpreted that this sector was positively influenced by the Union Budgets.

The Table 4 depicts the interplay between the Union Budgets and the sectoral index CNX Metal. Out of 30 observations, 26 observations (93%) have greater calculated $|Z|$ values than the respective table values, which indicates that this sector was highly influenced by the Union Budgets. It is also observed that there is a significant impact during the long term period (100%), followed by both medium term (80%), and short term period (80%). As far as the nature of impact is concerned, it is noted that there was an equal positive (13 positive observations) and negative (13 negative observations) impact of the Union Budgets on this sectoral index.

The Table 5 reflects the impact of the Union Budgets on the PSU sectoral index of NSE. Out of 30 total observations, 24 observations (80%) have greater calculated $|Z|$ values than the respective table values. Hence, it may be concluded that the Union Budgets had the highest impact on the PSU sectoral index as far as the extent of the impact is concerned. Regarding the nature of the impact, out of 30 observations, 13 observations (43%) show a negative impact, 11 observations (37%) show a positive impact, and six (6) observations (20%) show no impact, which implies that this sector experienced a mixed impact, that is, both positive and negative during the study period. During the long and medium window periods, the index experienced the extent of impact upto the level of 80%, and regarding the nature of impact, it experienced equal impact - both positive (40%) and negative (40%). However, during the short term window, this sector experienced 50% negative impact and only 30% positive impact.

The Table 6 exhibits the influence of the Union Budgets on the Auto sectoral index of NSE. Regarding the

Table 6. Impact of Union Budgets on the Sectoral Index - CNX AUTO

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $
2004	410	55	3.65	204	6	3.69	53	2	2.60
2005	138	327	1.94	56	154	1.83	43	12	1.58
2006	465	0	4.78	210	0	3.92	55	0	2.80
2007	0	465	4.78	0	210	3.92	0	55	2.80
2008	13	452	4.51	12	198	3.47	10	45	1.78
2009	452	13	4.52	197	13	3.44	42	13	1.48
2010	465	0	4.78	210	0	3.92	55	0	2.80
2011	438	27	4.23	188	22	3.01	44	11	1.68
2012	380	85	3.03	126	84	0.78	23	32	0.46
2013	16	449	4.45	16	194	3.32	13	39	1.17

Table 7. Impact of Union Budgets on the Sectoral Index - CNX BANK

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $
2004	255	240	0.15	142	68	1.38	28	27	0.05
2005	465	0	4.78	210	0	3.92	55	0	2.80
2006	452	13	4.52	210	0	3.92	55	0	2.80
2007	0	465	4.78	0	210	3.92	0	55	
2008	0	465	4.78	0	210	3.92	0	55	2.80
2009	252	213	0.40	95	115	0.37	5	50	2.29
2010	465	0	4.78	210	0	3.92	55	0	2.80
2011	438	27	4.23	183	27	2.91	28	27	0.05
2012	44	421	3.88	11	199	3.51	2	53	2.60
2013	0	456	4.78	0	210	3.92	0	55	2.80

extent of impact, the long term window has the highest impact (90%), followed by medium term (80%), and the lowest impact (40%) is witnessed during the short term. Out of the total 30 observations, 21 observations (70%) have greater calculated $|Z|$ values, which implies that this sector experienced a moderate impact of the Union Budgets. As far as the nature of the impact is concerned, this sector experienced 37% positive impact and 33% negative impact.

The Table 7 displays the influence of the Union Budgets on the CNX Bank sectoral index of NSE. Out of 30 observations, 24 observations (80%) have higher $|Z|$ values than the respective table values, 13 observations (43%) have a negative impact, and only 11 observations have a positive impact. This implies that this sector was highly influenced by the Union Budgets with a moderate negative impact. It is also observed that this sector was significantly influenced during all three periods (80%).

The Table 8 depicts the impact of the Union Budgets on the Energy sectoral index of NSE. From the total observations, 25 observations (83%) have higher calculated $|Z|$ values than the respective table values. Out of these observations, 12 observations show a positive impact, and 13 observations show a negative impact. It is also observed that this sector was highly influenced during the medium term (100%), followed by long term (90%), and short term (70%).

The Table 9 depicts the impact of the Union Budget on the CNX Finance sectoral index of NSE. Out of the total

Table 8. Impact of Union Budgets on the Sectoral Index - CNX ENERGY

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ-	Σ+	Z	Σ-	Σ+	Z	Σ-	Σ+	Z
2004	436	29	4.19	210	0	3.92	55	0	2.80
2005	418	47	3.82	107	40	2.43	55	0	2.80
2006	458	7	4.64	203	7	3.66	48	7	2.09
2007	5	460	4.68	0	210	3.92	0	55	2.80
2008	32	433	4.12	6	204	3.70	0	55	2.80
2009	63	402	3.49	31	179	2.76	11	44	1.68
2010	291	174	1.20	182	28	2.88	41	14	1.38
2011	462	3	4.72	209	1	3.88	54	1	2.70
2012	0	465	4.78	0	210	3.92	0	55	2.80
2013	14	451	4.49	14	196	3.40	14	41	1.38

Table 9. Impact of Union Budgets on the Sectoral Index - CNX FINANCE

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ-	Σ+	Z	Σ-	Σ+	Z	Σ-	Σ+	Z
2004	291	174	1.20	165	45	2.24	34	21	0.66
2005	457	8	4.62	202	8	3.62	55	0	2.80
2006	465	0	4.78	210	0	3.92	55	0	2.80
2007	0	465	4.78	0	210	3.92	0	55	2.80
2008	0	465	4.78	0	210	3.92	0	55	2.80
2009	283	182	1.04	103	107	0.08	7	48	2.09
2010	465	0	4.78	210	0	3.92	55	0	2.80
2011	452	13	4.52	197	13	3.44	42	13	1.48
2012	41	424	3.94	16	194	3.32	2	53	2.60
2013	0	465	4.78	0	210	3.92	0	55	2.80

Table 10. Impact of Union Budgets on the Sectoral Index - CNX MEDIA

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ-	Σ+	Z	Σ-	Σ+	Z	Σ-	Σ+	Z
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA	NA	NA	NA	NA
2006	465	0	4.78	210	0	3.92	55	0	2.80
2007	78	387	3.18	0	210	3.92	0	55	2.80
2008	0	465	4.78	0	210	3.92	0	55	2.80
2009	192	273	0.83	61	149	1.64	4	51	2.40
2010	395	70	3.34	185	25	2.99	55	0	2.80
2011	216	249	0.35	132	78	1.01	47	8	1.99
2012	36	429	4.04	34	176	2.65	0	55	2.80
2013	10	455	4.58	10	200	3.55	10	45	1.78

Table 11. Impact of Union Budgets on the Sectoral Index - CNX REALTY

Budget Year	LONG TERM			MEDIUM TERM			SHORT TERM		
	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $	Σ^-	Σ^+	$ Z $
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA	NA	NA	NA	NA
2006	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	0	465	4.78	0	210	3.92	0	55	2.80
2008	0	465	4.78	0	210	3.92	0	55	2.80
2009	241	224	0.18	113	97	0.30	8	47	1.99
2010	111	324	2.30	110	100	0.19	41	4	2.19
2011	233	232	0.01	115	95	0.37	39	16	1.17
2012	0	465	4.78	0	210	3.92	0	55	2.80

30 observations, 25 observations (83%) have calculated $|Z|$ values greater than the table values, which explains that this sectoral index was significantly influenced by the Union Budgets. With regard to the nature of impact, 12 observations show a positive impact, and 13 observations show a negative impact. This explains that the finance sector was influenced almost equally by both positive and negative impacts. As far as the extent of the impact is concerned, it was highly influenced during the short term (70%), and moderately in the long term (60%) and medium term (50%).

The Table 10 shows the interrelationship between the Media sectoral index of NSE and the Union Budgets. Out of 24 observations, 18 observations (75%) are having calculated $|Z|$ values higher than the respective table values ; 12 observations show a negative impact, and only 6 observations show a positive impact. Hence, it may be interpreted that this sector was influenced negatively (moderate level) by the Union Budgets. As far as the effect on the event window period is concerned, all the three window periods show the highest influence (75%) with a negative impact.

The Table 11 envisages the impact of the Union Budgets on the Realty sectoral index of NSE. Out of 21 observations, 14 observations are having greater calculated $|Z|$ values than the respective table values, and all these 14 observations display a negative impact. Hence, it may be concluded that the realty sector felt the highest negative impact during the study period.

Findings

➤ The Tables have depicted that the calculated $|Z|$ values for 246 (78%) observations out of 315 are greater than the respective table values at the 5% significance level. Only the remaining 69 (22%) observations have the calculated $|Z|$ values lesser than the respective table values and hence, the null hypothesis is rejected, indicating that there was a significant impact of the Union Budgets on the sectoral indices of NSE.

➤ Among the total 315 observations, 132 observations (42%) show a positive impact, 114 observations (36%) show a negative impact, and 69 observations did not show any impact. Hence, it is observed that the Union Budgets had a moderate impact on the sectoral indices of NSE.

➤ Regarding the nature and extent of the impact on the window periods, during the long term period, 87 observations out of 105 have higher calculated $|Z|$ values than the table value (1.96) at the 5% significance level, and among 87 observations, 47 show a positive impact, and 40 observations show a negative impact. As far as the medium term is concerned, out of 105 observations, 88 observations show higher calculated $|Z|$ values than the table value (2.09) at the 5% significance level, and among 88 observations, 48 observations show a positive

impact, and only 40 observations show a negative impact. As far as the short term time period is concerned, out of 105, only 71 observations show higher calculated $|Z|$ values than the table value (2.26) at the 5% significance level; and among 71 observations, 37 observations show positive results and 34 observations show negative results.

✎ An interesting observation noted in this study was that during the years 2007 and 2008, the Union Budgets had the highest negative impact on almost all the sectoral indices. The price behaviors of the entire indices during post budget were lower than they were in the pre budget period. But the budget years 2006 and 2010 showed the highest positive impact on the price behavior of almost all the sectoral indices.

✎ Out of 11 sectoral indices, five indices namely, IT, Metal, Energy, PSU, and Banks saw the highest impact of the Union Budget.

✎ FMCG, Pharma, IT, Auto, and Metal are the sectoral indices that experienced a positive impact and Realty, Media, Energy, Banks, and PSU experienced the highest negative impact.

✎ Finally, the Union Budgets made a significant impact sequentially on medium term, followed by long term and short term.

✎ The empirical studies conducted in the recent past relevant to this area of study concluded that the stock market appears to be fairly efficient in the long run event window period. The equity investors experienced a substantial volatility in the short term, followed by medium term, and long term window period. But this present study differs from the views of the previous studies as our results revealed that the Union Budgets impacted the various sectoral indices significantly during the medium term followed by long term and short term window period.

Conclusion

Stock markets have always been the most sensitive parameter of any economy. Union Budget announcements have influenced the stock markets in every budget period due to the changes in the policy decisions by various governments. The present study pertaining to 10 year observations reveals that the budget announcements had the highest impact on the sectoral indices of NSE during the medium term followed by long term, and had a moderate influence on the short term. This may be due to better understanding by the investors after the euphoria has settled down, though the hype and anxiety are high due to budget jitters during the budget week. Hence, the study concludes that the budget announcements created the highest impact during the medium term, followed by the long-term and the lowest impact occurred in the short term.

Research Implications

This research implies that there are some event-related return opportunities available to the investing community. The Union Budget is one of the major macro events which gives a chance to the investors to earn out of it. However, it is a fact that the market returns are always higher than the investors' returns. The lack of financial knowledge on the part of the retail investors restrains them from reaping the full benefits out of their investments, and they find it difficult to stay rooted in a bumpy volatile market. This research paper sheds some light on the impact of macro events - in this case, Union Budgets - on the various sectoral indices of NSE. The present study would be useful for the investors to take the right investment decisions.

Limitations of the Study and Scope for Further Research

The event window period of the current study is 30 trading days pre and post budget presentation of the respective

financial years (2004 - 2013), and was conducted with the objective to ascertain the effect of the Union Budgets on the various sectoral indices of NSE. This study assumes that the fluctuations in the price behavior of various sectoral indices occurred only due to the impact of the Union Budgets during the study period. But there are chances that other micro and macro events that might have occurred during the study period also influenced the price behavior of the various sectoral indices of NSE.

This present study deals only with the relationship between the Union Budgets and the sectoral indices of the NSE. There are other macro events like policy announcements by RBI, inflation rate announcements, index of industrial production, and so forth which can also influence the performance of the equity markets. The effects on these events on the equity markets could be examined by researchers in future studies. In addition to this, intraday and intraweek event effect of Union Budgets on the NIFTY and SENSEX indices are some of the other prospective related areas for further investigation.

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