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An Event Study Analysis of Union Budget Announcement on Broad and Sectoral Indices of Indian Stock Market

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Abstract:

Expectations of the markets are always perceived to be rational in nature. These expectations are a result of cumulative experiences of market participants who are expected to foresee the near term changes in political and economic scenarios in the country and outside the country. One such rational decision making scenario is when a clue regarding future vision of the country are laid down by the finance ministers in the form of a Union Budget. Announcements of various reform measures by either the existing governments in power for long periods or by any new governments in power depends upon the economic scenario of that country, and reflects the areas which needs immediate emphasis. The study thus reflects upon the perceptions of the markets especially considering the broader market and sectoral markets towards the announcements of budget by finance ministers from period 1993 to 2014. More than 600 event studies were conducted across 27 indices in the study. The results obtained infer that Budget announcement has no significant impact on the broader and sectoral indices over the years and trading strategies cannot be adopted by investors in making investment decisions during this shorter time frames as markets correct themselves to any future expectations from the budget as time passes.

Keywords: Market Efficiency, Event study methodology, Stationarity, Union Budget, Strategies

1. Introduction

The union budget is always comprehended to be a formal announcement of vision of the existing government, whether newly elected or not. The budget is a confidence building measure where concrete road map is laid down to shape the policies which the government pursues for growth of the economy. This mere confidence in future expectations from the governments brings in several positive changes in the productivity of the economy. As we are aware that Indian Union Budget and the various measures announced by the finance ministers is a reflection of what the economy was and what the economy will be in the future. Development of overall economy is always the main vision of the government proposing the budget. Indian economy has undergone cyclical changes over the years from year 1991 to 2014, with various external and internal factors being responsible for these cyclical changes. The stock markets during this period have undergone phenomenal changes over the years by being transparent and responsible in functioning and execution of the trades. The stock markets over the years have drawn small and large investors from within the country and outside the country due to various transformational steps brought by the finance ministers during the tough times. 1990s was considered to be tough times for Indian economy and was considered to be worst crisis period. During 1990, the then finance minister, Madhu Dandavate abolished the gold import act and brought an end to chaukamba raj, which would help the small scale and cottage industries. In 1991, when India was faced with numerous problems such as deficit of forex reserves, Higher inflation, Uncertainty with respect to crude oil prices due to post gulf war situation in Kuwait, the key solutions were found in fiscal consolidation, raising tax revenues and by disinvestments in PSUs. When Manmohan Singh became the finance minister in 1992, he ushered into a market-led economy. Later, over the years, gradual steps were undertaken to open the economy to the external world.

The recent mandate by Indian citizens to elect a new government which believes in providing a business friendly environment ushered in new pursuits in case of capital markets. Though Indian stock markets were believed the recent mandate by Indian citizens to elect a new government which believes in providing a business friendly environment ushered in new pursuits in case of capital markets. Though Indian stock markets were believed to have lost their shine in 2007-08 periods due to recessionary factors, today, the story seems different with Indian stock markets being one of the top performers in the world. As on July, 2014, among top-10 countries by market capitalization, measured in US dollars, India is the only one that's trading at a discount of 8% to its peak. According to Economic times report, higher expected corporate earnings from the current levels of 15-17%, would lead to more capital formation, leading to higher market capitalization. In particular, the exponential earnings growth in mid- and small-cap sectors will drive this capital formation. The signs of this growth, have already become visible in recent months. The country's growth in global emerging market (GEM) funds has been observed to be 10.5% in June 2014, compared to 7.5% in 2007. This indicates India to become the most preferred destination for international investors in the times to come. Foreign Institutional investors (FIIs) have been seen mainly responsible for the recent bullish trend in the stock markets. Around 69000 crore rupees has been invested alone this year by FIIs and this number seems to be on the rise, which has resulted in BSE Sensex index surging around 23% in rupee terms. The index touched 26000 marks for the first time and ended at 26100 up 0.53%, surpassing its previous record of 25999.08 on July 3. The rally was also observed in large indices such as BSE 200 which represents the top 200 large companies traded on BSE due to more institutional participation. After the new government came to power, the other benchmark indices have reached fresh peaks mostly mid caps, hitting their life time high on 7th July 2014. The BSE mid-cap and small cap indices have risen by 4% and 6%, respectively against the 2% gain in the Sensex in the month of June. After nearly three years, the mutual funds are also observed to have net inflows. According to few analysts, growth story will be persistent for quite some time and investing in high beta stocks would be beneficial to investors over longer run. The past and the recent events, try to emphasize some interlinkages or relationships between the news emerging in expectations towards budget announcements and its impact on stock markets. These relationships are found not to be remote in nature and ample evidence shows significant changes in the indices performance during this period. Thus, it was felt to study the impact of these events on broader and sectoral indices, which, if proved can decipher some trading techniques for retail and large investors.

2. Literature Review

Susan Thomas and Ajay Shah (2001) investigate the response of the stock markets to the announcement of union budget hypothesizing markets to be efficient in nature. The study also investigates possible trading and hedging strategies around the budget date. BSE Sensex returns data from 1979 to 2001 and NSE Nifty index data from 1994 to 2001 was considered for the study. Around 26 Budgets were considered as event dates for the study comprising of both interim and final budgets respectively. Event study methodology was followed by an event window period of 45 days around all the budget dates. The study finds Indian markets to be efficient at information processing around the union budget announcement date and no significant differences were observed in the returns before and after the event date. The study also finds that the union budget adds around 10% to the stock index, on average and leads to higher elevated volatility in the following short periods. The study opinions that, as post-budget period is highly volatile in nature, short selling index futures on or near budget date would be an appropriate hedging strategy.

Ranjani, Sujeewa and Rathnasiri (2009) examined the impact of Sri Lankan government budget announcements on the Colombo stock exchange indices for the period 2005-2009. Event study methodology was followed in the study with an event window of 15 days before and after the event date. The indices considered for the study were mainly the All Share Price Index (ASPI) and Milanka Price Index (MPI) listed on Colombo stock exchange. The study finds significant negative trend in indices returns in the event window period across all the years except for 2007. The study concludes that continues imposition and concessions in tax may be one of the major reasons for negative and positive trend respectively in the index returns over the around the event date.

Gurcharan Singh and Salony Kansal (2010) examined the impact of Union budget announcements on stock markets represented by NSE Nifty index for the period 1996-2009. The study examined a total of seventeen union budgets including three interim budgets, presented by finance ministers for a period of thirteen years between 1996 to 2009. The event window period was classified into short (3 days) medium (15 days) and long-term (30 days) for the study. The authors examined the statistical changes in the returns and volatility of the indices by conducting T-test and Z-test. The study finds statistically significant changes in returns and volatility for short-term period and long-term period respectively. The study concludes that the impact of budget announcement is observed only in the short-term and medium-term on NSE Nifty returns and the differences are found to disappear with a longer period of time. The study also finds more volatility after the budget announcements in the returns of the index. Thus budget announcement was found to have significant impact on the stock market returns.

Anil Soni and Jalandhar (2010) examined the impact of announcement of union budget and monetary policy on stock markets on the same lines of the study done by G. Singh and S. Kansal (2010) on BSE Sensex index for a period of ten years from 2000 to 2009. The event window period was classified into short (3 days) medium (15 days) and long-term (30 days) for the study to understand the impact of budget announcement and monetary policy announcements over short and long term horizons. T-test and F-tests were conducted to analyze the returns over the time frames. The study finds the impact of budget and monetary policy announcements to be prominent during the short terms and finds fading effect towards long-term horizons.

Vishal Kutchu (2012) investigated the semi-strong form of efficiency of the Indian stock markets by analysing the impact of union budget announcements for the period August 2011 to April 2012. The study analysed the impact of budget announcement on S&P CNX Nifty and companies belonging to major sectors mainly Fertilisers, Textiles, Hotels, Paper, Software and Pharmaceuticals. The study adopts event study methodology for the analysis with event date being March 16th, 2012. The research proposes to use Multivariate regression model (MVRM Model) with dummy variables for an event date in contrast to event study methodology used in previous studies as event window is same across all the stocks leading to event clustering (Binder, 1985), Mackinlay (1997). In event studies abnormal returns over time are aggregated across securities assuming that the covariance across securities will be zero. Thus, according to Mackinlay (1997) an alternative method to handle event clustering is to analyze the abnormal returns without

aggregation. The study concludes that the impact of budget is company-specific in nature and no conclusive evidence was found to be drawn towards overall markets or specific sectors.

3. Problem Statement, Objectives and Hypothesis of the Study

3.1. Problem Statement

The recent change in regimes in the centre after the elections 2014 saw phenomenal changes in the risk perceptions of the investors towards the stock markets and other markets. In expectations towards the budget-2014 on July 10th, 2014, Indian barometer indices rocketed by around 20.8 percent in a matter of six months and particularly the rally found majority of mid-cap company stock prices surpassing their resistance levels (52-week highs) within this period. According to NSE, 30 percent of retail investors who participated in this rally where from outside top 100 cities which reflects revival of Indian economy under new, business-friendly environment. Is this rational behaviour persistent across all the years is the forthcoming question to be asked? Thus, it was required to study the impact of budget announcements on not only broader indices as done previously in literature, but also on sectoral indices for the period 1993-2014.

3.2. Objectives of the Study

- To examine the impact of budget announcement on the performance of broad and sectoral indices returns during the period 1993-2014.
- To investigate whether the changes in returns are profusely more or less during the period when budget announcement is made by finance ministers of new political regime in the central government.
- To examine whether investors can adopt trading strategies around the announcement dates in the future.

3.3. Hypotheses of the Study

- H_0 : There is no significant impact of budget announcements on the broader indices returns for the period 1993-2014.
- **H**₁: There is significant impact of budget announcements on the broader indices returns for the period 1993-2014.
- H_o: There is no significant impact of budget announcements on the sectoral indices returns for the period 1993-2014.
- H₁: There is significant impact of budget announcements on the sectoral indices returns for the period 1993-2014.
- H_0 : Budget announcement by new political regime has no impact on the returns of indices considered for the period 1993-2014
- H_1 : Budget announcement by new political regime has significant impact on the returns of indices considered for the period 1993-2014

4. Data Collection and Data Methodology

For the present study, secondary data was considered. The data used in the study are the daily closing values of the twenty three market indices listed on Bombay/Mumbai Stock Exchange (BSE) and National Stock Exchange (NSE) as shown in Table 1. The data for twenty three indices were collected from Capitaline Database and was checked for quality from respective stock exchanges website databases i.e., BSE India website (www.bseindia.com) and NSE India website (www.nseindia.com).

1	BSE SENSEX RETURNS	13	BSE METAL RETURNS
2	BANK NIFTY RETURNS	14	BSE MIDCAP RETURNS
3	BSE 100 RETURNS	15	BSE OIL RETURNS
4	BSE 200 RETURNS	16	BSE PSU RETURNS
5	BSE 500 RETURNS	17	BSE SMALL CAP RETURNS
6	BSE AUTO RETURNS	18	BSE TECK RETURNS
7	BSE BANKEX RETURNS	19	CNX IT RETURNS
8	BSE CD RETURNS	20	CNX MIDCAP RETURNS
9	BSE CG RETURNS	21	CNX NIFTY JUNIOR RETURNS
10	BSE FMCG RETURNS	22	S&P CNX 500 RETURNS
11	BSE HC RETURNS	23	S&P CNX NIFTY RETURN
12	BSE IT RETURNS		

 Table 1: List of indices considered for the study
 Source: Author

4.1. The following steps were followed in the present study for the analysis of behaviour of the returns of sample indices considered for the study

4.1.1. Stationarity Tests

The data of all the thirteen indices were considered for the study. Daily closing prices of the nineteen indices were considered for the study. Before proceeding with further tests, closing prices were tested for stationarity. It was observed that the data considered over specified periods for all the indices were non-stationary in nature. The Augmented Dickey-Fuller test (ADF) on the closing price values was applied to test if the series considered was stationary or not-stationary. A unit root test is a statistical test for the proposition that in an autoregressive statistical model of a time series, the autoregressive parameter is one. It is a test for detecting the presence of stationarity in the series (Dickey and Fuller, 1979 and 1981). If the variables in the regression model are not stationary, then it can be shown that the standard assumptions for asymptotic analysis will not be valid. In other words, the usual "t-ratios" will not follow a t-distribution; hence they are inappropriate to undertake hypothesis tests about the regression parameters. We fail to reject the existence of a unit-root for all the indices in closing prices. Non-stationary time series have time varying mean or variance or both. In our study, the time series is non-stationary and thus it would be possible only to study the behavior only for a time period under consideration. It would not be possible to generalize it to other time periods. Thus time series which is stationary would have its mean, variance and covariance unchanged by time shift. The ADF tests for unit root are the univariate representation of the time series. Thus, the actual tests were not performed on the daily prices themselves but on the first differences of their natural logarithms as shown below:

$\boldsymbol{R}_t = \log_e p_t - \log_e p_{t-1}$

Where R_t represents the return on an index, p_t is the price of the index at the end of the day't', and p_{t-1} is the price of the index at the end of day't-1'.

For the return series R_t , the ADF test consists of a regression of the first difference of the series against the series lagged k times as follows:

$$\Delta r_{t} = \alpha + \delta r_{t-1} + \sum_{i=1}^{p} \beta_{i} \Delta r_{t-i} + \varepsilon_{t}$$

Where,

$$\Delta r_t = r_t - r_{t-1}; r_t = \ln(R_t)$$

The null hypothesis is H_0 : $\delta=0$ to be tested against H_1 : $\delta<1$. The acceptance of null hypothesis implies non-stationarity. Thus all the indices were transformed to stationary time series by differencing or by de-trending, depending upon whether the time series were difference stationary or trend stationary. Since the time series data of all the indices considered were log-differenced and thus stationary in nature, the order of integration (differencing) is one.

4.1.2. Descriptive Statistics

Under Descriptive statistics for returns of all indices the following measures like average returns (Mean), Standard Deviation, Median, Minimum and Maximum values, Number of observations, Skewness and Kurtosis, and finally the Jarque-Bera test statistics and its probability were included.¹

4.1.3. Event Study Methodology

Fama, Fisher, Jensen and Roll (1969) used event studies to examine semi-strong form of efficiency of financial markets. In order to understand whether there existed significant profitable opportunities around the budget announcement dates, Event Study Methodology given by Brown and Warner, 1985 was followed. For the period 1993-2014, the union budget was put forth in the parliament 24 times by finance ministers under various government regimes. The list of 24 budget announcements dates is provided in Table 2 in appendix. The event study methodology enables to compute cumulative abnormal returns (CAR) of the respective share indices during the days surrounding the announcement. In the methodology, 30 days surrounding the event day (15 days before and 15 days after the event) has been denoted as "event window". To statistically understand whether there was significant difference in the distribution pattern of abnormal returns before and after the announcement, parametric t-test was conducted. If there existed possibility to gain abnormal returns due to the announcement, then the markets can be said to inefficient.

Thus, under the null hypothesis of no difference in the returns before and after the event day, the t-test was conducted at 0.05 level of significance. The standard error of the difference between the two means since population standard deviation is unknown was calculated as follows:

$$\hat{\sigma}_{\bar{x}_{after}} = \sqrt{\frac{\hat{\sigma}_{after}^2}{n_{after}}} + \sqrt{\frac{\hat{\sigma}_{before}^2}{n_{before}}}$$

¹Reference: Levin and Rubin, "Statistics for Management", seventh edition

To estimate the common variance or an unbiased estimator of population variance, the weighted average of sample variances were considered with weights being equal to degrees of freedom used. Thus pooled estimate of population variance was estimated as shown below:

$$S_p^2 = \frac{(n_{after} - 1)S_{after}^2 + (n_{before} - 1)S_{before}^2}{n_{before} + n_{after} - 2}$$

Thus degree of freedom would be equal to number of sample before and after the event minus two. Thus standardized 't' statistic is calculated as shown below:

$$t = \frac{\left(\overline{\chi}_{after} - \overline{\chi}_{before}\right) - \left(\mu_{after} - \mu_{before}\right)H_{0}}{\hat{\sigma}_{\overline{\chi}_{after}} - \overline{\chi}_{before}}$$

If the standardized difference between the two samples means lies within the acceptance region, we would accept the null hypothesis of no difference between the means of returns before and after the event day. The p-values of the t-test were often used to accept or reject the null hypothesis.

5. Data Analysis and Interpretation

The results in Tables 3 to 6 indicate that except for the period 1993, in none of the years there was observed any significant changes in the returns to the budget announcement. As the data for sectoral indices was unavailable during this period, only the impact of budget was observed on the broader indices. It can be observed that, returns in all the broader indices were observed to be higher and positive in the pre-event period. This reflects a positive sentiment of the investors towards better policy reforms especially towards taxation and infrastructure sector, but the returns in the post-event period was witnessed to instantaneously drop after the budget announcements. The period 1993-96 was considered to be one of the worst times for Indian economy and certain bold steps were required to be taken which were stringent and necessary for economic growth. The budget was proposed by Dr. Manmohan Singh during this entire period, who believed in market led economy. The markets were observed to react negatively soon after the budget announcement during all the periods. Overall, we can infer that, out of sixteen event studies, there was found no statistically significant differences in the returns before and after the announcement date at 5 percent level of significance except in the year 1993. Thus, strategy of buying and short- selling company stocks which are part of the broader index in the pre-event period and post-event period would earn short-term benefits to the investors.

The results in Table 7 and Table 8, reflect the market reflection to budget proposed by then finance minister P. Chidambaram. The period 1997-98 was considered to be dream budget according to many analysts, wherein several steps were taken to reduce the corporate tax and income-tax. Only in rare occasions that we have observed markets reacting positively in the pre- and post-event period. But statistically no significant differences were observed in the returns. During the period 1998-99, there was change in the government at the centre and for the period 1998-2002, the budget was proposed by finance minister Yashwant Sinha. During this period, though financial crisis of 1997 was not much felt on the Indian stock markets, the reforms undertaken in the budget was found to be mixed in response, with few indices witnessing rise in prices and majority falling in the pre-event period and post-event period. The study in this period especially points towards the budget announcement to have specific impact of the sectors. Thus the results were found to point towards effect of event on sector specific stocks. In 2004, there was yet again another change in the government at the centre. As observed in Table-15 to Table-27, there seems to be no significant impact of budget announcement on the returns in the pre-event period and observed to post negative returns in the post-event period. Thus, forming trading strategies in the pre-event period and post-event peri

6. Findings of the Study

- The markets are observed to react very positively to the budget in expectations of major reforms to meet the growth of the economy, but, react generally negatively in the post-event period. The markets are observed to react with mixed response to change in the government at the centre.
- No unusually high and low changes in the prices seem to be observed in the pre- and post-event period across broader and sectoral indices though overall impact of the budget seem to point towards company specificity.
- Short-term trading strategies can be adopted by considering stock and index derivatives during this period.
- No significant differences were observed in the returns before and after the budget announcement in case of broader indices.
- No significant differences were observed in the returns before and after the budget announcement in case of sectoral indices.
- The markets are observed to be efficient in nature as the returns are statistically no different before and after the announcement period.
- The market's overall are observed to react negatively in anticipation of the budget announcement and fresh buying is only observed after the budget announcement. This reflects the market sentiments towards wait and watch before making investment decisions.

7. Conclusions of the Study

The study was conducted to study the impact of budget announcement on stock markets by considering the representative broader and sectoral indices listed on both BSE and NSE exchanges. From the literature review, it was evident that budget announcement is one of the key event in foreseeing the road map for the Indian economy in the future. It is evident that markets consider budget announcement dates only for making short term profits. The markets are observed to rally positively towards the budget announcements dates expecting good things from the finance ministers but it is found rare that the markets have reacted positively after the budget announcement. Overall, we can conclude that, no significant differences can be observed in returns before and after the announcement date in case of both broad indices and sectoral indices. Except for the period 1993, where significant differences were observed in the returns after the announcement dates, we do not observe any key changes in the returns statistically over the period 1994-2014. The study finds no ample evidence for long-term structuring of investments by retail and institutional investors based on the budget announcement news. But, short-term trading strategies can earn abnormal profits. Thus, we conclude that the markets are semi-strong efficient in nature and no trading strategies can be adopted to get abnormal profits around the announcement date.

Sl. no	Year	Date of Budget announcement	Finance minister proposing the budget	Sl. no	Year	Date of Budget announcement	Finance minister proposing the budget
1	1993	27-02-1993	Dr. Manmohan Singh	14	2004	03-02-2004	Jaswant Singh
2	1994	28-02-1994	Dr. Manmohan Singh	15	2004	08-07-2004	P. Chidambaram
3	1995	15-03-1995	Dr. Manmohan Singh	16	2005	28-02-2005	P. Chidambaram
4	1996	28-02-1996	Dr. Manmohan Singh	17	2006	28-02-2006	P. Chidambaram
5	1996	27-07-1996	P. Chidambaram	18	2007	28-02-2007	P. Chidambaram
6	1997	28-02-1997	P. Chidambaram	19	2008	29-02-2008	P. Chidambaram
7	1998	25-03-1998	Yashwant Sinha	20	2009	16-02-2009	Pranab Mukherjee
8	1998	01-06-1998	Yashwant Sinha	21	2009	06-07-2009	Pranab Mukherjee
9	1999	27-02-1999	Yashwant Sinha	22	2010	26-02-2010	Pranab Mukherjee
10	2000	29-02-2000	Yashwant Sinha	23	2011	28-02-2011	Pranab Mukherjee
11	2001	28-02-2001	Yashwant Sinha	24	2012	16-03-2012	Pranab Mukherjee
12	2002	28-02-2002	Yashwant Sinha	25	2013	28-02-2013	P. Chidambaram
13	2003	28-02-2003	Jaswant Singh	26	2014	10-07-2014	Arun Jaitley

8. Appendix

Table 2: Year and date of budget announcement by finance ministers under different government regimes for the period 1993-2014Source: Ishan. H. Pandya (2013)

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.4411	-1.0410	1.6610	2.5112	0.0580	Reject
BSE 100 RETURNS	0.3364	-1.0055	1.3050	2.1182	0.0405	Accept
BSE 200 RETURNS	0.0285	-1.0654	1.3075	2.3123	0.1168	Reject

 Table 3: Impact of Budget Announcement on 27-02-1993 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.5575	-0.7038	2.7048	1.8385	0.0911	accept
BSE 100 RETURNS	0.4725	-0.6765	2.1870	1.6363	0.0670	accept
BSE 200 RETURNS	0.3019	-0.5272	2.0838	1.6037	0.1292	accept

 Table 4: Impact Of Budget Announcement on 28-02-1994 On Broader And Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.3795	-0.1309	1.7655	1.1807	0.4089	accept
BSE 100 RETURNS	0.3546	-0.1593	1.5055	0.7984	0.2714	accept
BSE 200 RETURNS	0.3863	-0.2077	1.4898	0.7087	0.2249	accept
S&P CNX NIFTY RETURN	0.5607	-0.1200	1.9090	1.3726	0.3934	accept

 Table 5: Impact of Budget Announcement on 15-03-1995 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.7458	-0.5095	1.7754	1.2535	0.0586	accept
BSE 100 RETURNS	0.7463	-0.4399	1.7707	1.1206	0.0619	accept
S&P CNX NIFTY RETURN	0.7216	-0.5344	2.2921	1.2230	0.0972	accept
CNX NIFTY JUNIOR RETURNS	0.9057	-0.4780	2.4647	1.0982	0.0594	accept
CNX IT RETURNS	0.5001	-0.5260	1.9020	0.9712	0.0853	accept
BSE 200 RETURNS	0.7855	-0.4636	1.6738	1.0381	0.0308	reject

 Table 6: Impact of Budget Announcement on 28-02-1996 on Broader and Sectoral Indices Returns

 Source: Authors

	r					
INDEX	Returns Before	Returns after	S.D before	S.D after the	p-value	Acceptance/Rejection of
	the event	the event	the event	ovent	•	Null Hypothesis
	the event	the event	the event	event		Null Hypothesis
BSE SENSEX	-0.2558	-0.2909	1.7024	1.2259	0.9073	accept
RETURNS						I.
BSE 100	-0.2595	-0.2709	1.1678	0.9690	0.9789	accept
RETURNS						
BSE 200	-0.3137	-0.3462	1.2705	1.1608	0.9636	accept
RETURNS						-
S&P CNX NIFTY	-0.2494	-0.2367	1.4623	1.1943	0.9091	accept
RETURN						_
CNX NIFTY	-0.1467	-0.4012	0.8906	1.2366	0.2886	accept
JUNIOR						
RETURNS						
CNX IT RETURNS	-0.4316	-0.4204	1.2176	1.3058	0.9982	accept

 Table 7: Impact of Budget Announcement on 27-07-1996 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.0567	0.6144	1.2573	3.2200	0.5249	accept
BSE 100 RETURNS	0.0229	0.5595	1.1557	3.1034	0.5244	accept
BSE 200 RETURNS	0.0286	0.5630	1.0771	2.9715	0.5017	accept
S&P CNX NIFTY RETURN	0.1785	0.4508	1.3354	3.2000	0.7577	accept
CNX NIFTY JUNIOR RETURNS	-0.0118	0.3015	1.0607	2.8058	0.6826	accept
CNX IT RETURNS	0.4219	0.6118	0.8290	2.9267	0.8109	accept

 Table 8: Impact of Budget Announcement on 28-02-1997 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	-0.5602	-1.0127	1.7222	3.2838	0.6791	accept
BSE 100 RETURNS	-0.4804	-1.1540	1.7921	3.2318	0.5340	accept
BSE 200 RETURNS	-0.4230	-1.1741	1.8338	3.1382	0.4754	accept
S&P CNX NIFTY RETURN	-0.5780	-0.9601	1.4891	3.2217	0.6972	accept
CNX NIFTY JUNIOR RETURNS	0.0281	-1.5865	2.5040	3.9396	0.1977	accept
CNX IT RETURNS	1.3935	-1.7650	3.2320	4.4649	0.0555	accept

Table 9: Impact of Budget Announcement on 25-03-1998 on Broader and Sectoral Indices Returns

Source: Authors

INDEX	Returns Before	Returns after	S.D before	S.D after the	p-value	Acceptance/Rejection of
	the event	the event	the event	event		Null Hypothesis
BSE SENSEX	0.0439	0.9353	1.1054	2.2024	0.1541	accept
RETURNS						
BSE 100	0.1135	0.8815	1.1179	2.0980	0.2167	accept
RETURNS	0.1054	0.02.62	1.02.10	2.4.600	0.0454	
BSE 200 RETURNS	0.1056	0.8363	1.0240	2.4688	0.3474	accept
BSE 500	-0.0360	0.8356	1.2642	1.9127	0.1983	accept
RETURNS						1
BSE PSU	-0.0433	0.2067	1.3438	2.0489	0.9237	accept
RETURNS	0.0421	0.2107	1.05.47	1 (021	0.5201	
RETURNS	0.0431	0.3197	1.2547	1.6031	0.5381	accept
BSE CG RETURNS	0.0085	0.4288	1.2595	2.0494	0.5521	accept
BSE CD RETURNS	0.5354	1.6756	2.4041	2.1515	0.1402	accept
BSE HC RETURNS	0.2995	1.6087	1.7206	3.5673	0.1803	accept
BSE IT RETURNS	-0.4451	1.7438	4.3072	3.8221	0.3439	accept
BSE METAL RETURNS	0.3377	-0.9174	1.2811	1.6982	0.0503	accept
BSE OIL RETURNS	-0.1824	-0.2638	1.9140	2.7655	0.6685	accept
S&P CNX NIFTY RETURN	0.0457	0.9677	1.5330	1.8911	0.2145	accept
CNX NIFTY JUNIOR RETURNS	0.1335	1.3611	1.7265	2.1931	0.1228	accept
CNX IT RETURNS	0.5395	1.7116	1.5426	3.8580	0.3490	accept
BSE FMCG RETURNS	-0.1272	1.3531	1.5576	2.3740	0.0114	reject

Table 10: Impact of Budget Announcement on 27-02-1999 on Broader and Sectoral Indices ReturnsSource: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.3439	-0.7528	2.3672	2.4651	0.3400	accept
BSE 100 RETURNS	0.6251	-1.2178	2.6740	2.7393	0.1062	accept
BSE 200 RETURNS	0.4492	-1.1980	2.4676	2.6021	0.1257	accept
BSE 500 RETURNS	0.5030	-1.1615	2.3181	2.5767	0.1104	accept
BSE TECK RETURNS	0.9048	-0.6423	3.4674	4.2296	0.2960	accept
BSE PSU RETURNS	-0.5532	-1.1351	2.7290	2.6851	0.5663	accept
BSE AUTO RETURNS	-0.5899	-1.3011	2.0867	2.4714	0.4154	accept

			~ ~			
	Returns Before	Returns after	S.D before	S.D after the	p-value	Acceptance/Rejection of
	the event	the event	the event	event		Null Hypothesis
BSE CG	-0.9214	-1.4116	2.2437	2.4539	0.5911	accept
RETURNS						_
BSE CD RETURNS	0.0227	-1.9345	2.9298	3.4307	0.1798	accept
BSE FMCG	1.2007	-0.3409	2.2826	3.3391	0.1188	accept
RETURNS						
BSE HC	-0.2853	-1.3478	2.5538	3.5247	0.3668	accept
RETURNS						_
BSE IT RETURNS	1.3159	-1.3352	4.8300	4.4313	0.0964	accept
BSE METAL	-0.5236	-1.2788	2.2845	3.1451	0.4665	accept
RETURNS						
BSE OIL	-0.9738	-1.2007	2.5641	3.4706	0.8221	accept
RETURNS						_
S&P CNX NIFTY	0.3555	-0.6235	1.7095	2.3503	0.3040	accept
RETURN						
CNX NIFTY	0.0894	-1.1834	2.2938	3.6824	0.3045	accept
JUNIOR						-
RETURNS						
S&P CNX 500	0.5613	-1.0387	2.2556	2.5597	0.1081	accept
RETURNS						
CNX IT RETURNS	1.3984	-1.1868	4.8592	4.4004	0.1018	accept

 Table 11: Impact of Budget Announcement on 29-02-2000 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	-0.4728	-0.6355	1.3619	3.1692	0.8616	accept
BSE 100 RETURNS	-0.5870	-0.9434	1.6076	3.7221	0.7459	accept
BSE 200 RETURNS	-0.5721	-0.9707	1.5751	3.6050	0.7047	accept
BSE 500 RETURNS	-0.5831	-1.0040	1.5750	3.5752	0.6867	accept
BSE TECK RETURNS	-1.4949	-1.7298	2.3995	6.5502	0.9059	accept
BSE PSU RETURNS	-0.4609	-0.5578	1.7957	2.7308	0.8937	accept
BSE AUTO RETURNS	-0.3819	-0.8989	1.8731	3.0192	0.5323	accept
BSE CG RETURNS	-0.2820	-1.3405	2.3786	3.7605	0.2945	accept
BSE CD RETURNS	-0.3602	-1.9263	2.5936	4.1176	0.1609	accept
BSE FMCG RETURNS	-0.0945	-0.2145	1.7977	2.4940	0.8800	accept
BSE HC RETURNS	-0.1472	-0.6479	1.1486	2.4934	0.4764	accept
BSE IT RETURNS	-1.2083	-1.9358	2.2585	7.1497	0.7325	accept
BSE METAL RETURNS	0.0521	-1.1537	2.1427	3.9648	0.2108	accept
BSE OIL RETURNS	-0.3733	-0.7091	1.5371	2.8713	0.6655	accept
S&P CNX NIFTY RETURN	-0.4466	-0.6215	1.2738	3.2867	0.8540	accept
CNX NIFTY JUNIOR RETURNS	-1.0020	-1.2741	2.1897	4.0174	0.8132	accept
S&P CNX 500 RETURNS	-0.5677	-1.0156	1.4610	3.4601	0.6600	accept

	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
CNX MIDCAP RETURNS	-0.4982	-1.3759	1.6311	3.1509	0.3347	accept
CNX IT RETURNS	-1.2651	-2.0136	2.2403	7.5895	0.7461	accept
BANK NIFTY RETURNS	-0.2507	-0.0329	2.6214	3.8151	0.8316	accept

 Table 12: Impact of Budget Announcement on 28-02-2001 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.5264	-0.2133	1.0020	1.7309	0.1554	accept
BSE 100 RETURNS	0.3350	-0.1162	1.0059	1.6309	0.3009	accept
BSE 200 RETURNS	0.4404	-0.0816	1.1252	1.7691	0.2615	accept
BSE 500 RETURNS	0.4453	-0.0671	1.1141	1.7660	0.2642	accept
BSE TECK RETURNS	-0.0023	0.0508	1.7825	2.6324	0.9132	accept
BSE PSU RETURNS	0.6706	0.0890	2.9275	2.5038	0.5797	accept
BSE AUTO RETURNS	0.7621	-0.1713	1.2687	1.8894	0.1296	accept
BSE BANKEX RETURNS	0.7114	-0.3150	1.7370	1.8978	0.0918	accept
BSE CG RETURNS	0.6193	-0.3362	2.4001	2.9484	0.2172	accept
BSE CD RETURNS	0.5241	0.0887	1.2433	1.4897	0.3472	accept
BSE FMCG RETURNS	0.5154	-0.2922	1.2244	1.7821	0.1978	accept
BSE HC RETURNS	0.5021	-0.0180	1.1474	1.1770	0.1764	accept
BSE IT RETURNS	-0.1242	0.1232	2.0645	2.6744	0.6374	accept
BSE METAL RETURNS	0.8323	-0.1765	2.5255	2.0988	0.1710	accept
BSE OIL RETURNS	0.5517	0.1733	2.9647	2.2864	0.7230	accept
S&P CNX NIFTY RETURN	0.4456	-0.1785	0.9032	1.6271	0.1682	accept
CNX NIFTY JUNIOR RETURNS	0.2647	-0.0458	1.1382	1.8325	0.5785	accept
S&P CNX 500 RETURNS	0.4205	-0.1074	1.0171	1.6620	0.1996	accept
CNX MIDCAP RETURNS	0.4726	-0.0846	1.3100	2.0161	0.1910	accept
CNX IT RETURNS	-0.1436	0.1067	2.1962	2.6976	0.6414	accept
BANK NIFTY RETURNS	0.6386	-0.3465	1.6148	2.2384	0.1653	accept

 Table 13: Impact of Budget Announcement on 28-02-2002 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	-0.0543	-0.1690	0.7455	1.0138	0.7411	accept
BSE 100 RETURNS	-0.0453	-0.2099	0.8167	0.9240	0.6224	accept
BSE 200 RETURNS	-0.0260	-0.2411	0.7799	0.8200	0.4795	accept
BSE 500 RETURNS	-0.0267	-0.2557	0.8259	0.8214	0.4641	accept
BSE TECK RETURNS	-0.4221	0.3623	1.2329	8.2599	0.7149	accept
BSE PSU RETURNS	0.0663	-0.3369	0.9038	0.7789	0.2024	accept
BSE AUTO RETURNS	-0.1574	-0.1342	1.0138	1.1783	0.9468	accept
BSE BANKEX RETURNS	0.0561	-0.3004	1.2482	1.1133	0.3989	accept
BSE CG RETURNS	0.2730	-0.3702	1.0721	1.0923	0.0990	accept
BSE CD RETURNS	-0.0915	-0.5655	0.6852	0.6549	0.0971	accept
BSE FMCG RETURNS	0.0977	-0.2883	0.7607	0.6412	0.1661	accept
BSE HC RETURNS	-0.2231	-0.1391	0.4814	0.8782	0.7804	accept
BSE IT RETURNS	-0.3824	-0.0051	1.4388	2.0113	0.5627	accept
BSE METAL RETURNS	-0.0834	-0.5864	1.3713	1.1002	0.2193	accept
BSE OIL RETURNS	0.1843	-0.2109	0.6816	0.8195	0.1831	accept
S&P CNX NIFTY RETURN	-0.0641	-0.1727	0.8020	1.0196	0.7681	accept
CNX NIFTY JUNIOR RETURNS	-0.0371	-0.3425	1.3020	0.8844	0.4913	accept
S&P CNX 500 RETURNS	-0.0372	-0.2560	0.8182	0.8353	0.4952	accept
CNX MIDCAP RETURNS	-0.0268	-0.4148	1.1901	0.8604	0.3289	accept
CNX IT RETURNS	-0.3918	0.0089	1.4357	2.0447	0.5412	accept
BANK NIFTY RETURNS	0.0399	-0.2406	1.4955	1.2605	0.5854	accept

 Table 14: Impact of Budget Announcement on 28-02-2003 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	-0.3988	0.0135	2.1882	1.5109	0.4857	accept
BSE 100 RETURNS	-0.5941	0.0153	2.5996	1.8378	0.4424	accept
BSE 200 RETURNS	-0.5960	0.0121	2.5738	1.8335	0.4386	accept
BSE 500 RETURNS	-0.5983	0.0121	2.6604	1.8547	0.4519	accept
BSE TECK RETURNS	-0.5952	-0.1340	2.4496	1.9675	0.5040	accept
BSE PSU RETURNS	-0.8751	0.0159	3.5132	2.6177	0.4478	accept
BSE MIDCAP RETURNS	-0.7409	-0.0217	2.5654	1.9522	0.3807	accept
BSE SMALL CAP RETURNS	-0.9462	-0.2803	3.1326	2.0751	0.4736	accept
BSE AUTO RETURNS	-0.1953	0.1813	3.3436	2.1861	0.7143	accept
BSE BANKEX RETURNS	-0.4111	0.0097	2.5708	2.1153	0.5859	accept
BSE CG RETURNS	-0.6578	0.3844	3.1409	1.5445	0.2773	accept
BSE CD RETURNS	-0.9505	-0.5618	3.6779	2.5711	0.7168	accept
BSE FMCG RETURNS	-0.5664	-0.0927	1.5935	1.2717	0.3542	accept
BSE HC RETURNS	-0.3402	0.1450	1.6087	1.3437	0.3603	accept
BSE IT RETURNS	-0.6849	-0.2522	2.4698	1.9642	0.5022	accept

	Returns Before	Returns after	S.D before	S.D after the	p-value	Acceptance/Rejection
	the event	the event	the event	event		of Null Hypothesis
BSE METAL RETURNS	-0.8528	0.2505	3.4707	2.7513	0.2893	accept
BSE OIL RETURNS	-0.7522	0.0153	3.1677	2.4531	0.4752	accept
S&P CNX NIFTY	-0.4565	0.0083	2.3155	1.7351	0.4858	accept
RETURN						
CNX NIFTY JUNIOR	-0.3715	0.0691	2.7039	1.9481	0.6216	accept
RETURNS						_
S&P CNX 500 RETURNS	-0.5999	0.0031	2.6085	1.8363	0.4763	accept
CNX MIDCAP RETURNS	-0.5209	-0.0328	2.6133	1.9817	0.5720	accept
CNX IT RETURNS	-0.6948	-0.2482	2.3693	1.9602	0.4756	accept
BANK NIFTY RETURNS	-0.5180	-0.0372	3.0325	2.5441	0.6100	accept

 Table 15: Impact of Budget Announcement on 03-02-2004 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.2356	0.1580	1.1875	1.1141	0.8612	accept
BSE 100 RETURNS	0.2505	0.1520	1.1933	1.1349	0.8260	accept
BSE 200 RETURNS	0.2721	0.1442	1.2677	1.3354	0.7929	accept
BSE 500 RETURNS	0.2663	0.1752	1.2539	1.3273	0.8481	accept
BSE TECK RETURNS	0.4019	0.3966	1.2391	0.9399	0.9901	accept
BSE PSU RETURNS	0.3068	0.1365	1.7100	2.1836	0.8234	accept
BSE MIDCAP RETURNS	0.2219	0.2789	1.2337	1.1714	0.8945	accept
BSE SMALL CAP RETURNS	0.2854	0.4923	1.3808	1.8123	0.6931	accept
BSE AUTO RETURNS	0.3374	-0.2074	1.2440	1.5298	0.3164	accept
BSE BANKEX RETURNS	-0.1117	0.1577	1.6083	1.5630	0.6800	accept
BSE CG RETURNS	0.6151	0.2013	1.2789	1.4904	0.3653	accept
BSE CD RETURNS	0.5567	0.3820	1.5402	1.8137	0.7499	accept
BSE FMCG RETURNS	0.0931	0.1216	0.9389	1.1717	0.9464	accept
BSE HC RETURNS	-0.0166	0.0781	1.3346	0.6587	0.7781	accept
BSE IT RETURNS	0.2991	0.4050	1.4744	1.0423	0.8284	accept
BSE METAL RETURNS	0.9758	0.6858	2.5137	2.7374	0.7785	accept
BSE OIL RETURNS	0.2137	0.1516	1.8371	2.0593	0.9295	accept
S&P CNX NIFTY RETURN	0.3222	0.1239	1.2992	1.3441	0.6982	accept
CNX NIFTY JUNIOR RETURNS	0.0884	0.2778	1.2853	1.3172	0.6941	accept
S&P CNX 500 RETURNS	0.2625	0.1758	1.2604	1.3492	0.8581	accept
CNX MIDCAP RETURNS	0.1595	0.2785	1.2638	1.1040	0.7710	accept
CNX IT RETURNS	0.3111	0.3705	1.4987	1.0329	0.9044	accept
BANK NIFTY RETURNS	-0.0853	0.1188	1.8194	1.9310	0.7953	accept

Table 16: Impact of Budget Announcement on 08-07-2004 on Broader and Sectoral Indices Returns

Source: Authors

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INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	-0.0471	0.1355	0.6351	0.9498	0.5754	accept
BSE 100 RETURNS	-0.0442	0.1183	0.6024	0.9104	0.5851	accept
BSE 200 RETURNS	0.0024	0.1300	0.5404	0.8607	0.6258	accept
BSE 500 RETURNS	0.0092	0.1359	0.5269	0.8552	0.6146	accept
BSE TECK RETURNS	0.1048	0.0230	1.0746	1.1104	0.8444	accept
BSE PSU RETURNS	0.0530	0.1471	0.5575	0.9861	0.7540	accept
BSE MIDCAP RETURNS	0.0664	0.1742	0.5513	0.8536	0.6105	accept
BSE SMALL CAP RETURNS	0.1467	0.3460	0.9341	1.2595	0.5334	accept
BSE AUTO RETURNS	-0.2023	0.0497	0.8600	1.0060	0.3421	accept
BSE BANKEX RETURNS	0.1037	0.5645	0.8587	1.6339	0.3566	accept
BSE CG RETURNS	0.6287	-0.0937	0.9077	0.8835	0.0546	accept
BSE CD RETURNS	0.1593	0.2197	2.4519	1.4113	0.9350	accept
BSE FMCG RETURNS	-0.3375	-0.1933	1.0218	1.1594	0.7116	accept
BSE HC RETURNS	-0.1943	0.1470	0.4124	0.9144	0.1613	accept
BSE IT RETURNS	0.1440	0.1283	1.1711	1.1554	0.9727	accept
BSE METAL RETURNS	0.1410	0.3803	0.6352	1.3192	0.5056	accept
BSE OIL RETURNS	-0.0032	0.2197	0.6546	1.2465	0.5643	accept
S&P CNX NIFTY RETURN	-0.0530	0.1585	0.6328	0.9382	0.5023	accept
CNX NIFTY JUNIOR RETURNS	-0.0939	0.2327	0.6859	1.0907	0.2941	accept
S&P CNX 500 RETURNS	-0.0056	0.1580	0.5603	0.8822	0.5376	accept
CNX MIDCAP RETURNS	0.0117	0.1717	0.5898	0.8880	0.4962	accept
CNX IT RETURNS	-0.0306	0.2177	1.1114	1.1152	0.5854	accept
BANK NIFTY RETURNS	0.1406	0.5064	0.9329	1.7237	0.4931	accept

 Table 17: Impact of Budget Announcement on 28-02-2005 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.2011	0.4193	0.7118	0.9559	0.5328	accept
BSE 100 RETURNS	0.1858	0.4078	0.6609	0.9127	0.5104	accept
BSE 200 RETURNS	0.1701	0.4142	0.6469	0.8888	0.4590	accept
BSE 500 RETURNS	0.1557	0.4049	0.6334	0.8571	0.4350	accept
BSE TECK RETURNS	0.0554	0.4675	0.6578	1.2990	0.1599	accept
BSE PSU RETURNS	0.3014	0.1634	0.7612	0.9542	0.6947	accept
BSE MIDCAP RETURNS	0.0774	0.4010	0.7046	0.7673	0.2658	accept
BSE SMALL CAP RETURNS	0.0103	0.1449	0.8874	0.7268	0.6699	accept
BSE AUTO RETURNS	0.4766	0.5575	1.0332	1.3253	0.8665	accept
BSE BANKEX RETURNS	-0.0064	0.2084	1.2252	0.7916	0.5509	accept
BSE CG RETURNS	0.1655	0.7121	1.6405	1.1983	0.3863	accept
BSE CD RETURNS	-0.0611	0.3433	1.3183	1.4081	0.4121	accept
BSE FMCG RETURNS	0.6749	0.2651	1.7248	1.1460	0.5319	accept

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	the event	the event	the event	s.D after the event	p-value	of Null Hypothesis
BSE HC RETURNS	0.1911	0.0825	1.0912	0.7232	0.7301	accept
BSE IT RETURNS	0.0554	0.3919	0.8817	1.4532	0.2707	accept
BSE METAL RETURNS	0.0061	0.5577	1.3068	1.9620	0.4537	accept
BSE OIL RETURNS	-0.0670	0.3442	0.5559	0.9141	0.0791	accept
S&P CNX NIFTY RETURN	0.1492	0.4225	0.6389	0.9441	0.4190	accept
CNX NIFTY JUNIOR RETURNS	0.1009	0.4079	1.0801	0.8156	0.4141	accept
S&P CNX 500 RETURNS	0.1847	0.3739	0.5730	0.8455	0.5472	accept
CNX MIDCAP RETURNS	0.0723	0.4216	0.7728	0.8761	0.2853	accept
CNX IT RETURNS	0.0440	0.4725	0.8062	1.3952	0.2086	accept
BANK NIFTY RETURNS	0.1230	0.2159	1.2528	0.7931	0.8215	accept

Table 18: Impact of Budget Announcement on 28-02-2006 on Broader and Sectoral Indices Returns

Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	-0.4679	-0.3685	1.2904	2.2811	0.8631	accept
BSE 100 RETURNS	-0.5116	-0.3554	1.3710	2.2546	0.7722	accept
BSE 200 RETURNS	-0.5098	-0.3645	1.3803	2.2350	0.7825	accept
BSE 500 RETURNS	-0.5126	-0.3710	1.3900	2.1822	0.7806	accept
BSE TECK RETURNS	-0.4556	-0.1948	1.6486	2.7753	0.7210	accept
BSE PSU RETURNS	-0.5069	-0.2464	1.1323	2.0535	0.5452	accept
BSE MIDCAP RETURNS	-0.5220	-0.4332	1.5058	1.9996	0.8404	accept
BSE SMALL CAP RETURNS	-0.6625	-0.5429	1.8704	2.1260	0.7975	accept
BSE AUTO RETURNS	-0.4952	-0.5687	1.5271	1.9393	0.8877	accept
BSE BANKEX RETURNS	-0.6710	-0.3810	1.9672	2.6415	0.6679	accept
BSE CG RETURNS	-0.5512	-0.4137	1.7693	2.7175	0.8049	accept
BSE CD RETURNS	-0.5228	-0.1485	1.7141	2.1468	0.4749	accept
BSE FMCG RETURNS	-0.4550	-0.4479	1.1879	1.8260	0.9886	accept
BSE HC RETURNS	-0.4654	-0.1446	1.2439	2.0029	0.4957	accept
BSE IT RETURNS	-0.2829	-0.2634	1.5305	3.0942	0.9824	accept
BSE METAL RETURNS	-0.2402	-0.5896	2.0568	2.3759	0.6003	accept
BSE OIL RETURNS	-0.2206	-0.2788	0.9669	2.0388	0.8890	accept
S&P CNX NIFTY RETURN	-0.4884	-0.3188	1.3373	2.3281	0.7603	accept
CNX NIFTY JUNIOR RETURNS	-0.4633	-0.3054	1.6218	2.2663	0.7359	accept
S&P CNX 500 RETURNS	-0.4890	-0.3189	1.3299	2.1741	0.7311	accept
CNX MIDCAP RETURNS	-0.4192	-0.4285	1.5475	2.1477	0.9835	accept
CNX IT RETURNS	-0.2372	-0.2206	1.4332	3.1572	0.9847	accept
BANK NIFTY RETURNS	-0.7029	-0.4462	2.0183	2.6899	0.7055	accept

 Table 19: Impact of Budget Announcement on 28-02-2007 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.1355	-1.1131	2.2291	2.6181	0.1702	accept
BSE 100 RETURNS	0.1179	-1.2118	2.3702	2.7643	0.1630	accept
BSE 200 RETURNS	0.0948	-1.2579	2.3483	2.7276	0.1505	accept
BSE 500 RETURNS	0.0723	-1.3156	2.3215	2.7164	0.1371	accept
BSE TECK RETURNS	0.0945	-0.9376	1.6530	2.2203	0.2208	accept
BSE PSU RETURNS	0.1564	-1.0740	2.8935	2.7381	0.1983	accept
BSE MIDCAP RETURNS	-0.0343	-1.6653	2.3311	2.6412	0.0715	accept
BSE SMALL CAP RETURNS	-0.3351	-1.8925	2.2134	2.6440	0.0842	accept
BSE AUTO RETURNS	0.0779	-0.6064	1.7250	1.8127	0.3411	accept
BSE BANKEX RETURNS	-0.1751	-1.8971	2.4191	3.3664	0.1346	accept
BSE CG RETURNS	0.2319	-1.5107	2.8253	3.4800	0.0917	accept
BSE CD RETURNS	-0.0956	-1.8968	2.9421	3.5778	0.1192	accept
BSE FMCG RETURNS	0.3204	-0.2666	2.1750	1.7903	0.3357	accept
BSE HC RETURNS	0.5168	-0.4302	1.5761	1.8131	0.1908	accept
BSE IT RETURNS	0.4767	-1.0524	2.0791	2.5474	0.1683	accept
BSE METAL RETURNS	0.6337	-1.4560	2.9086	3.4992	0.0948	accept
BSE OIL RETURNS	0.3522	-0.8780	3.2286	3.0205	0.2925	accept
S&P CNX NIFTY RETURN	0.2204	-0.9276	2.3563	2.5601	0.1936	accept
CNX NIFTY JUNIOR RETURNS	-0.1811	-1.6761	2.5099	3.4286	0.1814	accept
S&P CNX 500 RETURNS	0.1025	-1.1964	2.3654	2.6736	0.1524	accept
CNX MIDCAP RETURNS	-0.0312	-1.3553	2.3574	2.8959	0.1596	accept
CNX IT RETURNS	0.3805	-0.9579	1.8229	2.4537	0.1927	accept
BANK NIFTY RETURNS	-0.2395	-1.8494	2.4232	3.2156	0.1292	accept

 Table 20: Impact of Budget Announcement on 29-02-2008 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE TECK RETURNS	0.4512	-0.5347	1.8716	1.7652	0.2203	accept
BSE AUTO RETURNS	0.6552	-0.0287	1.1622	1.4188	0.2629	accept
BSE CD RETURNS	-0.0845	-0.8288	2.1940	1.6176	0.3470	accept
BSE HC RETURNS	-0.0079	-0.4182	0.9040	0.8287	0.2932	accept
BSE IT RETURNS	0.3444	-0.2993	1.8185	1.9873	0.4277	accept
BSE METAL RETURNS	1.2253	-1.0017	2.9689	2.2645	0.0564	accept
S&P CNX NIFTY RETURN	0.6588	-0.7699	1.9060	1.7085	0.0721	accept
CNX IT RETURNS	0.4132	-0.3493	1.8656	2.0153	0.3737	accept
BSE SENSEX RETURNS	0.7213	-0.9556	2.0106	1.6673	0.0427	reject
BSE 100 RETURNS	0.6737	-0.9460	1.8556	1.5588	0.0362	reject
BSE 200 RETURNS	0.6467	-0.9449	1.7473	1.4895	0.0313	reject
BSE 500 RETURNS	0.6199	-0.9468	1.6624	1.4382	0.0277	reject
BSE PSU RETURNS	0.5552	-0.7000	1.4449	1.3556	0.0374	reject

	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE MIDCAP RETURNS	0.3757	-1.0076	1.0139	1.0502	0.0053	reject
BSE SMALL CAP RETURNS	0.2843	-1.0162	0.8230	0.8466	0.0025	reject
BSE BANKEX RETURNS	0.7841	-1.9348	2.2076	2.0437	0.0070	reject
BSE CG RETURNS	0.6064	-1.0713	1.9686	1.5195	0.0249	reject
BSE FMCG RETURNS	0.2633	-0.7949	0.9474	1.3829	0.0120	reject
BSE OIL RETURNS	0.9705	-0.8665	2.2128	2.0348	0.0414	reject
CNX NIFTY JUNIOR RETURNS	0.5246	-1.0174	1.6079	1.5077	0.0245	reject
S&P CNX 500 RETURNS	0.6037	-0.8062	1.6712	1.4469	0.0442	reject
CNX MIDCAP RETURNS	0.3566	-1.0613	1.0395	1.0946	0.0036	reject
BANK NIFTY RETURNS	0.7697	-1.8218	2.0821	1.9950	0.0072	reject

Table 21: Impact of Budget Announcement on 16-02-2009 on Broader and Sectoral Indices Returns

Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	-0.1303	0.2381	1.6836	2.6398	0.5222	accept
BSE 100 RETURNS	-0.0942	0.2400	1.8086	2.6559	0.5776	accept
BSE 200 RETURNS	-0.0802	0.2332	1.8108	2.6492	0.5970	accept
BSE 500 RETURNS	-0.0842	0.2403	1.8020	2.6350	0.5784	accept
BSE TECK RETURNS	-0.0665	0.5358	1.4945	2.3266	0.3193	accept
BSE PSU RETURNS	-0.0725	0.0289	2.0954	2.5255	0.8810	accept
BSE MIDCAP RETURNS	-0.0409	0.2820	2.0758	2.7791	0.5994	accept
BSE SMALL CAP RETURNS	-0.1948	0.2896	1.9883	2.7878	0.4373	accept
BSE BANKEX RETURNS	0.3574	-0.0459	1.8829	3.3426	0.6461	accept
BSE CG RETURNS	0.0457	-0.1744	2.7477	3.3058	0.7847	accept
BSE CD RETURNS	-0.0114	0.3734	2.1003	2.8658	0.6046	accept
BSE FMCG RETURNS	0.1501	0.9873	1.1223	1.8333	0.0893	accept
BSE HC RETURNS	0.0070	0.3857	1.3267	1.5150	0.4238	accept
BSE IT RETURNS	0.1577	0.8842	1.5065	2.6697	0.3533	accept
BSE METAL RETURNS	-0.4766	0.5253	2.9881	3.5835	0.2696	accept
BSE OIL RETURNS	-0.5753	0.0311	2.4524	2.6290	0.3415	accept
S&P CNX NIFTY RETURN	-0.2183	0.2477	1.9059	2.6661	0.4268	accept
CNX NIFTY JUNIOR RETURNS	0.0745	0.2347	2.1747	3.0269	0.8331	accept
S&P CNX 500 RETURNS	-0.1620	0.2540	1.8640	2.5421	0.4499	accept
CNX MIDCAP RETURNS	-0.0034	0.3027	1.7955	2.4235	0.6052	accept
CNX IT RETURNS	0.0996	0.9729	1.5144	2.9108	0.2903	accept
BANK NIFTY RETURNS	0.4571	-0.1079	1.8800	3.3398	0.5289	accept
BSE AUTO RETURNS	-0.3899	1.2703	1.3824	2.7654	0.0220	reject

 Table 22: Impact of Budget Announcement on 06-07-2009 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.0173	0.5030	1.0625	0.6741	0.2107	accept
BSE 100 RETURNS	-0.0043	0.4722	1.0248	0.6929	0.2208	accept
BSE 200 RETURNS	-0.0317	0.4711	1.0129	0.7032	0.1946	accept
BSE 500 RETURNS	-0.0489	0.4640	0.9976	0.7034	0.1788	accept
BSE TECK RETURNS	0.1390	0.4500	1.0528	0.6216	0.2685	accept
BSE PSU RETURNS	-0.2245	-0.0172	1.1955	0.9033	0.6389	accept
BSE MIDCAP RETURNS	-0.2158	0.4683	0.9760	0.8535	0.0766	accept
BSE SMALL CAP RETURNS	-0.2907	0.3956	1.1343	0.9182	0.0920	accept
BSE AUTO RETURNS	-0.0855	0.7069	1.1403	1.7348	0.2279	accept
BSE BANKEX RETURNS	0.0801	0.5377	1.1725	0.9263	0.3580	accept
BSE CG RETURNS	0.1214	0.3083	1.0159	0.8734	0.6330	accept
BSE CD RETURNS	-0.0547	0.3039	1.3968	0.6967	0.3495	accept
BSE FMCG RETURNS	-0.0882	0.3581	0.7993	0.7634	0.1020	accept
BSE HC RETURNS	0.0203	0.4442	0.7495	0.6967	0.2031	accept
BSE IT RETURNS	0.3638	0.4377	1.0985	0.6960	0.7884	accept
BSE METAL RETURNS	-0.0084	0.7405	1.7572	1.3604	0.2745	accept
BSE OIL RETURNS	-0.2821	0.4144	1.3659	1.0290	0.2024	accept
S&P CNX NIFTY RETURN	0.0248	0.5132	1.0339	0.6908	0.2157	accept
CNX NIFTY JUNIOR RETURNS	-0.0900	0.4235	0.9364	0.9270	0.2019	accept
S&P CNX 500 RETURNS	-0.1043	0.3758	1.0324	0.6904	0.2141	accept
CNX MIDCAP RETURNS	-0.1708	0.5011	1.0132	0.9027	0.0898	accept
CNX IT RETURNS	0.2589	0.4412	0.9909	0.6999	0.5050	accept
BANK NIFTY RETURNS	0.0590	0.5411	1.1968	0.9163	0.3324	accept

 Table 23: Impact of Budget Announcement on 26-02-2010 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	-0.1051	0.0754	1.4326	1.3728	0.7420	accept
BSE 100 RETURNS	-0.1188	0.1029	1.4874	1.3194	0.6912	accept
BSE 200 RETURNS	-0.1466	0.1129	1.5266	1.2961	0.6470	accept
BSE 500 RETURNS	-0.1664	0.1178	1.5302	1.2505	0.6129	accept
BSE TECK RETURNS	-0.2115	-0.0687	1.1624	1.2579	0.7221	accept
BSE PSU RETURNS	-0.3279	0.2235	1.4141	1.2077	0.2869	accept
BSE MIDCAP RETURNS	-0.3698	0.1683	1.9460	1.1637	0.4234	accept
BSE SMALL CAP RETURNS	-0.4245	0.0123	2.2033	1.0549	0.5387	accept
BSE AUTO RETURNS	-0.2348	0.2053	2.0085	2.0046	0.5941	accept
BSE BANKEX RETURNS	0.0160	0.2077	2.1295	1.6158	0.8039	accept
BSE CG RETURNS	-0.3818	0.0390	2.2619	1.7217	0.6241	accept
BSE CD RETURNS	-0.2912	0.1735	2.2875	1.0593	0.5315	accept
BSE FMCG RETURNS	0.1546	0.2301	1.3230	1.4776	0.8679	accept

			-			
	Returns Before	Returns after	S.D before	S.D after the	p-value	Acceptance/Rejection
	the event	the event	the event	event		of Null Hypothesis
BSE HC RETURNS	-0.3893	0.0824	1.1957	1.0809	0.3210	accept
BSE IT RETURNS	-0.1559	-0.1100	1.2517	1.2999	0.9094	accept
BSE METAL RETURNS	-0.3391	-0.0175	1.8454	1.6373	0.6336	accept
BSE OIL RETURNS	-0.0036	0.2057	1.4232	1.2594	0.6608	accept
S&P CNX NIFTY RETURN	-0.1044	0.0963	1.4939	1.3673	0.7201	accept
CNX NIFTY JUNIOR	-0.1856	0.1396	1.8709	1.2128	0.6202	accept
RETURNS						
S&P CNX 500 RETURNS	-0.1638	0.1197	1.5768	1.2765	0.6211	accept
CNX MIDCAP RETURNS	-0.3340	0.2184	1.8148	1.1677	0.3877	accept
CNX IT RETURNS	-0.1605	-0.1202	1.2894	1.2974	0.9207	accept
BANK NIFTY RETURNS	0.0238	0.1889	2.1976	1.6254	0.8339	accept

Table 24: Impact of Budget Announcement on 28-02-2011 on Broader and Sectoral Indices Returns

Source: Authors

INDEX	Returns Before	Returns after	S.D before	S.D after the	p-value	Acceptance/Rejection
	the event	the event	the event	event		of Null Hypothesis
BSE SENSEX RETURNS	-0.1221	-0.4288	0.8914	0.9485	0.4943	accept
BSE 100 RETURNS	-0.0368	0.0414	1.4276	1.0523	0.8344	accept
BSE 200 RETURNS	-0.0237	-0.5057	0.7951	0.8777	0.2410	accept
BSE 500 RETURNS	-0.0292	-0.5005	0.7842	0.8524	0.2412	accept
BSE TECK RETURNS	-0.1615	-0.5772	0.8670	2.0397	0.5429	accept
BSE PSU RETURNS	-0.2921	-0.0335	1.4732	1.2208	0.4829	accept
BSE MIDCAP RETURNS	0.0252	-0.0432	1.3221	0.8763	0.8611	accept
BSE SMALL CAP RETURNS	-0.1137	0.1627	1.1050	0.8201	0.4392	accept
BSE AUTO RETURNS	0.0070	0.2565	1.0431	0.9980	0.4782	accept
BSE BANKEX RETURNS	-0.0467	0.1876	2.0988	1.4351	0.6950	accept
BSE CG RETURNS	-0.1170	-0.0106	2.3481	1.4793	0.8563	accept
BSE CD RETURNS	-0.0330	0.2136	1.8080	1.7317	0.6729	accept
BSE FMCG RETURNS	0.3291	0.5320	0.8586	0.8464	0.4533	accept
BSE HC RETURNS	0.0710	0.2861	0.9348	0.7190	0.3973	accept
BSE IT RETURNS	-0.1111	-0.7109	0.8968	2.4633	0.4662	accept
BSE METAL RETURNS	-0.3576	-0.1809	2.3602	1.6071	0.7691	accept
BSE OIL RETURNS	-0.4803	-0.0369	1.6720	1.2052	0.2445	accept
S&P CNX NIFTY RETURN	-0.1177	-0.0635	1.3367	1.3282	0.8644	accept
CNX NIFTY JUNIOR	-0.0996	0.1879	1.5336	1.1673	0.4667	accept
RETURNS	0 1161	0.0200	1 2291	1 1075	0 6700	accent
S&F UNA SUU KETUKNS	-0.1101	0.0399	1.3281	1.10/3	0.0766	accept
CNX MIDCAP RETURNS	-0.0357	0.0001	1.4997	1.1181	0.9203	accept
CNX IT RETURNS	-0.1154	-0.7177	0.8832	2.5108	0.4688	accept
BANK NIFTY RETURNS	-0.0545	0.1789	2.1012	1.5372	0.6995	accept

 Table 25: Impact of Budget Announcement on 16-03-2012 on Broader and Sectoral Indices Returns

 Source: Authors

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INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.1163	0.2467	1.1315	0.8593	0.6800	accept
BSE 100 RETURNS	-0.1119	0.0734	0.9642	1.0160	0.5748	accept
BSE 200 RETURNS	0.1628	0.3179	1.0396	0.9359	0.6150	accept
BSE 500 RETURNS	0.1437	0.3106	1.0047	0.8994	0.5754	accept
BSE TECK RETURNS	0.2902	-0.2660	0.8460	0.9981	0.0661	accept
BSE PSU RETURNS	-0.3841	-0.4533	1.2296	1.2657	0.8566	accept
BSE MIDCAP RETURNS	-0.1843	0.1263	0.9716	0.9176	0.2777	accept
BSE SMALL CAP RETURNS	-0.3905	0.2500	1.0830	1.1199	0.0503	accept
BSE BANKEX RETURNS	-0.1919	-0.5049	1.4974	1.3947	0.5457	accept
BSE CG RETURNS	-0.0590	-0.5681	1.9101	1.6728	0.3353	accept
BSE CD RETURNS	-0.1999	-0.0660	1.3655	1.5718	0.8160	accept
BSE FMCG RETURNS	-0.0859	0.0456	0.9110	0.6587	0.6627	accept
BSE HC RETURNS	0.0529	0.1169	0.7894	0.8416	0.8004	accept
BSE IT RETURNS	0.3678	-0.1674	0.9595	0.9421	0.1050	accept
BSE METAL RETURNS	-0.4347	-0.6208	1.8446	1.5299	0.6962	accept
BSE OIL RETURNS	-0.0178	-0.5333	1.4221	1.1758	0.2660	accept
S&P CNX NIFTY RETURN	-0.1818	-0.1108	0.6752	1.3272	0.8528	accept
CNX NIFTY JUNIOR RETURNS	-0.1419	-0.3391	1.1607	1.2053	0.6151	accept
S&P CNX 500 RETURNS	-0.0808	-0.3773	1.0540	0.9231	0.3251	accept
CNX MIDCAP RETURNS	-0.2100	-0.3483	1.3657	1.1687	0.7232	accept
CNX IT RETURNS	0.3023	-0.1635	0.9228	0.9624	0.1252	accept
BANK NIFTY RETURNS	-0.1847	-0.5233	1.5179	1.4250	0.5241	accept
BSE AUTO RETURNS	-0.0657	-0.7398	1.1643	0.8768	0.0403	reject

 Table 26: Impact of Budget Announcement on 28-02-2013 on Broader and Sectoral Indices Returns

 Source: Authors

INDEX	Returns Before the event	Returns after the event	S.D before the event	S.D after the event	p-value	Acceptance/Rejection of Null Hypothesis
BSE SENSEX RETURNS	0.0276	0.1959	0.8932	1.0645	0.5236	accept
BSE 100 RETURNS	0.0276	0.1959	0.8932	1.0645	0.5236	accept
BSE 200 RETURNS	0.0276	0.1959	0.8932	1.0645	0.5236	accept
BSE 500 RETURNS	0.0276	0.1959	0.8932	1.0645	0.5236	accept
BSE TECK RETURNS	2.8542	0.1959	12.3744	1.0645	0.0656	accept
BSE PSU RETURNS	-0.9026	0.1959	2.5311	1.0645	0.1451	accept
BSE MIDCAP RETURNS	0.0276	0.1959	0.8932	1.0645	0.5236	accept
BSE SMALL CAP RETURNS	0.0276	0.1959	0.8932	1.0645	0.5236	accept
BSE AUTO RETURNS	-3.7238	0.1959	13.0945	1.0645	0.0892	accept
BSE BANKEX RETURNS	-3.8963	0.1959	14.4379	1.0645	0.1262	accept
BSE CG RETURNS	-3.8814	0.1959	13.3048	1.0645	0.1486	accept
BSE CD RETURNS	2.0461	0.1959	26.5440	1.0645	0.5423	accept
BSE FMCG RETURNS	0.7216	0.1959	3.0878	1.0645	0.9177	accept

	Returns Before	Returns after	S.D before	S.D after the	p-value	Acceptance/Rejection
	the event	the event	the event	event	•	of Null Hypothesis
BSE HC RETURNS	-2.0884	0.1959	11.3605	1.0645	0.4397	accept
BSE IT RETURNS	-1.4467	0.1959	4.2949	1.0645	0.1422	accept
BSE METAL RETURNS	-2.9787	0.1959	10.9823	1.0645	0.2273	accept
BSE OIL RETURNS	-2.2272	0.1959	7.4848	1.0645	0.2346	accept
S&P CNX NIFTY RETURN	0.0276	0.1959	0.8932	1.0645	0.5236	accept
CNX NIFTY JUNIOR RETURNS	-3.8513	0.1959	13.7160	1.0645	0.1311	accept
	1.0051	0.10.50	6.6000	1.044	0.0440	
S&P CNX 500 RETURNS	1.3851	0.1959	6.6388	1.0645	0.0663	accept
CNX MIDCAP RETURNS	-2.3643	0.1959	7.8699	1.0645	0.0920	accept
CNX IT RETURNS	-1.7602	0.1959	5.4790	1.0645	0.1181	accept
BANK NIFTY RETURNS	-3.4632	0.1959	12.7987	1.0645	0.1186	accept

 Table 27: Impact of Budget Announcement on 10-07-2014 on Broader and Sectoral Indices Returns

 Source: Authors

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