



## Impact of Selective Corporate Events on Price Movements of Stocks of Bank Nifty Index

### KEYWORDS

Impact, Corporate events, Estimation window period, Wilcoxon Matched Pairs Test

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**ABSTRACT** *There are a number of reasons behind the fluctuations of share price in every trading day. Corporate actions of the companies do play a major role in the fluctuations of the share prices. An investor takes decision to buy or sell securities on the basis of their interpretation about corporate events. An attempt is made in this study, to know the impact of corporate announcement on the share prices of stock composition of Bank Nifty Index. The price movements of share before and after the corporate announcements were collected and Non Parametric Test (Wilcoxon Matched pairs Test) was applied to know the impact. The study has revealed that there is a significant impact on price movements of shares and it gives the chance to an intelligent investor to make profit from it.*

### INTRODUCTION

Fluctuations in share prices are inevitable in stock markets. We are witnessing more fluctuations in the price of shares in every trading day. These fluctuations happen due to various reasons. The reasons may be either due to systematic risk and/or unsystematic risk. Corporate actions of company do play a major role for the fluctuations in the share price. Traders and Investors may view the corporate events either in positive or negative way. They buy or sell securities on the basis of their interpretations about the corporate events. As a result, fluctuations in the share price occur. There are various types of corporate events like bonus issue, buy back of shares, stock split, dividend declaration, rights issue, preferential issue, employees stock option program, mergers and acquisitions, change of leadership, labour unrest etc. Event study is an important activity in making investment in stock market. The goal of an event study is to understand and measure the effect of an economic value of a firm, and the effect of an event that will be reflected immediately in the share prices. An attempt is made in this study to understand whether the corporate event influences the prices of shares significantly or not. For this purpose of the study, stock composition of Bank Nifty Index is considered. It consists of 12 stocks and they are Bank of Baroda, SBI, Canara Bank, Kotak Mahindra Bank, PNP, HDFC Bank, Bank of India, ICICI Bank, Union Bank, Yes Bank, Axis Bank and Indus Ind Bank. The corporate events selected for studying the price fluctuations are bonus issue, rights issue, stock split, declaration of dividends, ESOPs and preferential issues. To measure the impact of corporate events on share price fluctuations, Wilcoxon Matched Pair Test method is applied.

### REVIEW OF LITERATURE

A study was conducted by **Ball and Brown (1968)**<sup>1</sup> and it was observed that after earnings are announced, estimated cumulative abnormal returns continue to drift up for good news firms and down for bad news firms. In a study by **Watts (1978)**<sup>2</sup> it was found that significant abnormal return exists after the earnings announcement and it is because of the fact that stock market inefficiencies cannot be attributed to deficiencies in the capital asset pricing model. **David Yermack (1987)**<sup>3</sup> studied the stock option awards and company news announcements of chief executive officers. He found that the timing of the awards has significant association with contemporaneous movements in company stock prices. A study on the impact of dividend and earning announcement and return volatility was conducted by **P.C.Venkatash (1989)**<sup>4</sup>. In his study he concluded that the volatility of daily returns are lower in the post dividend period. **Alexander Hamilton**

**Frey (1991)**<sup>5</sup> conducted a study on the distribution of corporate dividends. The study revealed that the theory of dividend credit is not limited to cumulative and noncumulative preferred shares. In a study by **Srinivasan (1993)**<sup>6</sup>, it was observed that there was a positive abnormal returns on Ex-bonus and Ex-rights dates for Indian stock market. A study was conducted by **Anand.M.Vijh (1994)**<sup>7</sup> to measure the Ex-date effect of Spin-off and Mergers. The study concluded that mergers effect of Ex-date returns are much smaller fraction than the expectation of the shareholders and they gain. **Rao (1994)**<sup>8</sup> found out in his study that the Indian equity market responds in an expected direction to the firms' corporate event announcements. He projected a cumulative abnormal positive return of 6.3 percent around the three days of bonus issue announcement. In a study by **Mishra (2005)**<sup>9</sup> it was found that there is a significant positive abnormal return for the five day period prior to bonus announcement. A study by **Amitabh Gupta (2006)**<sup>10</sup> titled "Share price behaviour around buy back period in India" reveals that the announcement of shares buyback significantly increases the prices of shares around the time of announcement and larger companies generate lower abnormal returns than small companies. A study by **Selvam, Babu and Indumathi (2010)**<sup>11</sup> reveals that the dividend announcement makes a positive impact on the share prices of the companies that came for dividend announcement in the Indian stock exchanges and it gives the scope for intelligent investor to earn superior return. A study by **Koustubh Kanti Ray (2011)**<sup>12</sup> titled "Stock split and Right issue effect on Indian stock Market" concludes that the efficient market hypothesis failed to prove efficiency in India concerning the stock split and rights announcement where investors can make abnormal return.

### NEED FOR THE STUDY

There are number of researches on event studies in stocks of Indian equity market and most of the studies commonly examine the behaviour of the share prices of the firm around the corporate announcements. From the literature given above, it is evident that most of the studies have taken only one or two corporate events as base event for finding out the impact of share price movements and the investigation window period is also very small in number. So these studies reveal the short term impact on share price movement and impact due to one or two corporate events as base events. Hence, to find the sustained impact, the researcher has taken the estimation window period from -30 trading days to +30 trading days ("0"day-Event day) and corporate events numbering six as base events for the purpose to find the impact on price fluctuation of shares in this present study.

**OBJECTIVES OF THE STUDY**

- To examine the effect of event announcement on selected banking sector stocks during the study period.
- To study whether the corporate event announcement causes abnormal movement in share prices of selected stocks during the study period.

**HYPOTHESIS OF THE STUDY**

The null hypothesis here is that there is no significant impact on the prices of selected shares due to corporate event announcements.

**RESEARCH METHODOLOGY**

For the purpose of this study, shares in the composition of Bank Nifty Index were selected. The study is based on the data collected through secondary sources and the information regarding the corporate announcements and the daily share price movements of the selected stocks obtained from various sources like PROWESS, www.nseindia.com, www.moneycontrol.com and www.indiabulls.com. Wilcoxon Matched Pairs Test tool is used to measure the impact of corporate announcements on the share prices.

**FRAMEWORK OF THE ANALYSIS**

Wilcoxon Matched Pairs Test method is used to analyse the data and test the hypothesis. It is a non parametric method, which takes into consideration both the direction and magnitude of differences between paired values. The procedure for Wilcoxon matched rank test is as follows.

List the pairs and calculate the differences. ( $D_i = X_i - Y_i$ )

Omit all observation(s) with equal values and reduce the sample size accordingly and assign ranks for 1 to n to the differences starting from the smallest to largest without regard to their signs.

If the differences are equal in size, a rank equal to the average of ranks that would have been assigned, otherwise it is given to all the equal differences.

Find  $\sum S+$  and  $\sum S-$  where  $\sum S+$  is the sum of ranks with positive  $D_i$  and  $\sum S-$  is the sum of ranks with negative.

The Wilcoxon T-statistic is defined as the smallest of the two sums of ranks, i.e  $T = \min(\sum S+ \text{ or } \sum S-)$

Define the Null hypothesis and Alternative hypothesis.

See the table value of  $Z_\alpha$  for simple size n.

Here the sample size n is >25, and the sampling distribution of T approaches normal distribution with:

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

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

Z- Test Statistic;  $Z = T - E(T) / \sigma T$ .....13.

Find the Table value of  $Z_\alpha$  for a given  $\alpha$  level of significance and accept null hypothesis ( $H_0$ ) if the calculated value of |Z| is less than Table value of  $Z_\alpha$ , otherwise accept the alternative hypothesis  $H_1$ .

**WORKING MODEL**

**TABLE 1**  
**SHARE PRICE MOVEMENTS BEFORE AND AFTER THE ANNOUNCEMENT OF BONUS ISSUE. (HDFC BANK)**

$X_1$	$Y_1$	$D_i = X_i - Y_i$	Rank	S (+)	S (-)
1032.55	1001.55	+31.00	10	10	
1013.05	1000.75	+12.30	2	2	

1044.65	1025.45	+19.20	5	5	
1057.60	1014.30	+43.30	16	16	
1036.85	1012.30	+24.55	6	6	
1049.40	1002.75	+46.65	17	17	
1057.10	1000.95	+56.15	18	18	
1020.35	978.60	+41.75	13	13	
989.65	1015.75	-26.10	8		8
988.00	1029.30	-41.30	12		12
964.55	1044.05	-79.5	27		27
970.95	1041.40	-70.45	23		23
1000.80	1044.00	-43.20	15		15
1024.00	1037.50	-13.50	3		3
1029.40	1035.85	-6.45	1		1
1000.40	1035.85	-35.45	11		11
997.80	1075.30	-77.50	26		26
963.45	1066.70	-103.25	30		30
965.55	1047.80	-82.25	28		28
963.25	1034.70	-71.45	24		24
949.4	1046.30	-96.90	29		29
951.3	1023.80	-72.50	25		25
971.4	1038.25	-66.85	21		21
993.60	1057.05	-63.45	20		20
997.65	1040.80	-43.15	14		14
1000.2	1027.55	-27.35	9		9
981.25	1041.35	-60.10	19		19
961.15	1028.70	-67.55	22		22
983.45	1002.20	-18.75	4		4
1022.55	997.15	+25.40	7	7	
				$\sum S = 94$	$\sum S = 371$

$X_1$  = share price –Before corporate event

$Y_1$  =share price\* –After corporate event

\*(Adjusted for bonus)

$E(T) = n(n+1) / 4$   
 $= 30(30+1)/4$   
 $= 30 \times 31 / 4$   
 $= 232.50$

$\sigma T = \sqrt{n(n+1)(2n+1) / 24}$   
 $= \sqrt{30 \times 31 \times 61 / 24}$   
 $= \sqrt{2363.75}$   
 $= 48.62$

$Z = T - E(T) / \sigma T$

Z = 94 - 232.50/48.62

= -138.50/48.62

= -2.8486

Z = -2.8486 and |Z| is 2.8486.

**RESULT OF WILCOXON MATCHED PAIRS TEST FOR CORPORATE ACTION – DIVIDEND ANNOUNCEMENT**

Every financial year declaration of dividend is done by all the Bank Nifty Index stocks in terms of interim dividend and final dividend. In this study, for the analysis only the date of final dividend is taken and the price movement details were collected for 30 trading days before and after the record date of dividend announcement.

**TABLE2: Result of Wilcoxon Matched pairs Test for Corporate Action – Dividend Announcement.**

Name the of script	Σ S (+)	Σ S (-)	ET	T	σ	Z  value	T-value*
AXIS Bank	371	94	232.50	48.62	2.8486	1.645	
Bank of Baroda	410	55	232.50	48.62	3.6507	1.645	
Bank of India	182.5	82.5	232.50	48.62	1.0284	1.645	
Canara Bank	266	199	232.50	48.62	0.6890	1.645	
HDFC Bank	435	30	232.50	48.62	4.1649	1.645	
Indus Ind Bank	392	73	232.50	48.62	3.2805	1.645	
ICICI Bank	460	5	232.50	48.62	4.6791	1.645	
Kotak Mahindra Bank	182	283	232.50	48.62	1.0386	1.645	
Punjab National Bank	413	52	232.50	48.62	3.7124	1.645	
State Bank of India	367	98	232.50	48.62	2.7663	1.645	
Union Bank	50.5	14.5	232.50	48.62	1.6865	1.645	
Yes Bank	452	13	232.50	48.62	4.5146	1.645	

\*Table value at 5% significance level.

A glance at Table 2 indicates that out of 12 stocks, the calculated |Z| values of 9 stocks are greater than the Table value of 1.645. So they fall in the rejected region and only the remaining three stocks fall within the acceptance region i.e. the calculated value is less than the Table value. From this one can infer that the dividend announcement will have a significant impact on the price movement of the share and the impact may be either positive or negative.

**CORPORATE ACTION: PREFERENTIAL ISSUE**

The following Table indicates the preferential allotment details of Bank Nifty Index Stocks. Although the banks have allotted the preferential issues many times during the study period, only an allotment which is larger in volume and high in value is taken for the analysis. The price movement details of these scripts were collected based on the record date of the event.

**TABLE 3: Corporate Action: Preferential issue**

Name of the script	Σ S(+)	Σ S(-)	ET	σ T	Z  value	T-value*
State Bank of India	76	389	232.50	48.62	3.2188	1.645
Bank of Baroda	21	444	232.50	48.62	4.3501	1.645
Canara Bank	450	15	232.50	48.62	4.4734	1.645
Kotak Mahindra Bank	230	235	232.50	48.62	0.0514	1.645
Punjab National Bank	4	461	232.50	48.62	4.6997	1.645
HDFC Bank	449	16	232.50	48.62	4.4529	1.645
Bank of India	10	455	232.50	48.62	4.5763	1.645
ICICI Bank	458	7	232.50	48.62	4.6380	1.645
Union Bank	52.5	412.5	232.50	48.62	3.7021	1.645
Yes Bank	17	448	232.50	48.62	4.4323	1.645
AXIS Bank	336	129	232.50	48.62	2.1287	1.645
IndusInd Bank	459	6	232.50	48.62	4.6585	1.645

\*Table value at 5% significance level.

The Table 3 depicts that the calculated |Z| values for all the stocks are greater than the Table value of 1.645 except only one stock (Kotak Mahindra Bank). Hence, the null hypothesis is rejected and it clearly indicates that there is an impact on the price movements of selected share price due to the announcement of preferential allotments.

**CORPORATE ACTIONS: BONUS ISSUE, STOCKS SPLIT, RIGHTS ISSUE AND ESOP.**

The table shown below consists of only those stocks of Bank Nifty Index whichever has announced any of the corporate actions like bonus issue, stocks split, rights issue and ESOP. Out of 12 stocks in the index, the event of bonus issue is done by only one stock- Kotak Mahindra Bank, stock split event by only two stocks – HDFC Bank and Kotak Mahindra Bank and the rights issue event by two stocks - SBI and Kotak Mahindra Bank. In the case of ESOP, it is announced by only six banks several times during the study period. Hence, only the ESOP events on record date having larger in volume and high in value is taken for the study.

**TABLE 4: Corporate Actions: Bonus Issue, Stocks Split, Rights Issue and ESOP.**

Name of the script	Corporate Action	ΣS(+)	ΣS(-)	ET	σ T	Z -value	T-value*
Kotak Mahindra Bank	Bonus Issue	22	443	232.50	48.62	4.3294	1.645
HDFC Bank	Stocks split	334	131	232.50	48.62	2.0876	1.645
Kotak Mahindra Bank	Stocks split	12	453	232.50	48.62	4.5351	1.645
State Bank Of India	Rights issue	449	16	232.50	48.62	4.4529	1.645

Kotak Mahindra Bank	Rights issue	434	31	232.50	48.62	4.1443	1.645
State Bank of India	ESOP	18	447	232.50	48.62	4.4117	1.645
Kotak Mahindra Bank	ESOP	289	176	232.50	48.62	1.1620	1.645
HDFC Bank	ESOP	459	6	232.50	48.62	4.6585	1.645
ICICI Bank	ESOP	4	461	232.50	48.62	4.6997	1.645
YES Bank	ESOP	446	19	232.50	48.62	4.3911	1.645
AXIS Bank	ESOP	409	26	232.50	48.62	4.2472	1.645
IndusInd Bank	ESOP	457	8	232.50	48.62	4.6174	1.645

\*Table value at 5% significance level.

From the above Table 4, it is visible that except the Kotak Mahindra Bank share (ESOP), all the other shares are having calculated |Z| values greater than the Table value of 1.645 and the stocks have either positive or negative impacts on their price movements. Hence, it can be concluded that the announcement of bonus issue, stock split, rights issue and employees stock option program will have a significant impact on the price movement of the selected shares.

#### CONCLUSION

From the analysis of this study, it is clearly understood that the investing community makes buy or sell decision based on the corporate events. Results of this study show that there is a significant impact on the prices of shares due to corporate announcements. Announcements like bonus issue, stocks split, rights issue, dividend, ESOP and preferential allotments have a significant impact on the prices of shares. The market is immediately responding to corporate announcements either upward or downward swing in the share prices and it gives an opportunity to the intelligent investor to make profit out of it.

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