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THE IMPACT OF STOCK SPLIT EVENT ON CAPITAL GOODS COMPANIES SHARE PRICES: EVIDENCE FROM BSE

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Abstract:
Stock split is a corporate action which is done to increase the number of outstanding shares of a company. The objective of this research is to investigate the impact of stock split on their abnormal return of selected capital goods companies listed at the BSE. This study is based on the standard event study methodology. Stock's abnormal returns were investigated for a period of 10 days before and after of stock split event. The study covered the period of 2016-17 to 2023-24 with a sample of 4 companies. The Secondary data collected from the authorised sources on the daily adjusted closing stock prices of the 4 companies and the BSE Sensex index values for 10 days before and 10 days after the date of split event was used. The findings of this research indicates that Stock split event leads to getting negative returns on some days (6). But on majority of the days (15), stock splitting shows positive impact on stock price which means stock splits is helpful for getting abnormal return to investors.

***Keywords: Stock split, abnormal return, standard event study methodology, BSE Sensex*.**

Introduction

A stock split is a corporate action in which a company increases the number of outstanding shares to boost the stock's liquidity. However the company's total market capitalization remains unchanged. The prime objective behind this stock split event is to make share prices at much affordable level and accessible to as many as investors as possible. The stock split can be done at any ratios, the most commonly used ratios are 2:1, 3:2, etc. The existing shareholders continue to hold the same percentage of holding in the company. As the share prices drops down after the split, the new investors will look forward to purchase and expect that they might good returns in the near future.However, the fair price for a stock will be determined by the market forces of demand and supply of the stocks in the market. Reverse stock splits are the opposite, in which a company lowers the number of shares outstanding to raise its stock price.

Review of literature

Madhara Prabodini and Prasath Manjula Rathnasingha (2022) analysed the impact of stock split announcements on stock prices and market efficiency in the Colombo Stock Exchange (CSE).They used a sample of 26 stock split announcements that occurred between 2020 and 2021.The researchers used event research methodology. The study's findings demonstrated significant positive abnormal returns one day before the disclosure date, indicating information leakage, and significant negative abnormal returns the next day after the announcement date, indicating CSE informational efficiency. These findings supported the semi-strong form efficient market hypothesis.

I Gusti Bagus Yoga Pramana Putra and Anak Agung Gede Suarjaya (2020) examined the market efficiency based on the acquisition of abnormal returns during the stock split event period. In this study they used event study approach, in which they observed for abnormal return for 3 days before the announcement, during the announcement and 3 after the announcement. They analysed the data collected from various authorised sources. Using Census method, 11 samples were selected for the study.t- test is used to test the significance of abnormal returns. The analysis indicated that the market did not react during the stock split event period, which was indicated by the insignificant abnormal return.

Pratik Pravin (2020) did research to investigate the effect of the stock split on their abnormal returns of the selected companies listed at the BSE. They adopted the standard event study methodology for the research and tested for abnormal returns -7 days and +7 days after the stock split announcement and stock split event date. The findings stated that, stock split announcements leads to getting negative returns on some days. But at the time of stock splitting it shows positive impact on stock prices.

Daisy Muinami (2015) conducted research to determine the effect of stock split on stock returns of securities listed at the Nairobi Securities Exchange (NSE). An event study research design was used. The researcher considered the 14 firms that went for the stock split during the period from 2004 to 2014. The event window consisted of 61 days stock prices. They used the share piece index for 30 days pre and 30 days post-split announcement date. The findings of the study demonstrated that stock splits impact positively on stock returns, the findings revealed that four stocks reacted positively to stock splits in the event period.

D.Bhuvaneshwari and Dr.K.Ramya (2014) aimed to examine the impact of stock split announcements on stock prices. They used the standard event study methodology. They used the data about stock prices of CNX Nifty companies of NSE from January 2006 to December 2013 surrounding 60 days of the announcement dates. They calculated abnormal returns and t-tests to test the significance. The study resulted that stock split announcements have positive impact of stock prices around the announcement dates.

Research gap

Based on the earlier studies it is found that the most of the researchers have made an attempt to analyze the impact of stock announcements and stock split events on stock's prices of companies related to different industries listed in various stock exchanges. The aim of this is to analyze the impact of stock split event on stock prices of select capital goods listed in BSE (Bombay Stock Exchange).

Objective of the study

To analyse the impact of stock split on abnormal returns of select capital goods companies listed in BSE.

Hypothesis of the study

H_0: There is no significant change in abnormal returns around ex-split date of stock splits.

Research methodology

In this study the purposive sampling technique has been used to select the 4 capital goods companies which have undergone "the stock split event" out of the capital goods companies listed at the BSE and those companies are Bharat Electronics Ltd., Apollo Micro Systems Ltd., Avantel Ltd., and Bharat Dynamics Ltd**.** Stock prices of 10 days before and 10 days after the event date has been used for the study.The time period considered for this research is from 2016-17 to 2024-25.

Source of data

For the study the data has been collected from thevarious research papers and authorised sources viz. www.bseindia.com and www.finance.yahoo.com and etc,are used.

Scope of the study

To examine the effect of stock split on share prices this study considered the 4 selected capital goods companies that are listed in the BSE (Bombay Stock Exchange). For the study event study method has been used to analyse impact of stock split from both pre and post-split event point of view.

Statistical techniques

The event study method has been used to test the impact of split on stock price. Single factor model has been used for analysis of stock splits impact on market prices around stock split event. The following steps were followed for calculation.

I. **Actual Return (R_{it})** = $\frac{P1-P0}{P0}$

Where,

R_{it} = Actual return on security 'i' during time period 't'.

P1 = Current day closing price of a security

P0 = Previous day closing price of a security

II. **Expected Return, E (R_{it}) = $\alpha_i + \beta_i * R_{mt}$**

Where,

E (R_{it}) = Expected return on security 'i' during time period 't'

α_i = alpha coefficient of security 'i'

β_i = beta coefficient of security 'i'
R_{mt}= Return on index (BSE Sensex) during time period 't'.

III. Abnormal Returns (ARs), AR_{it}= R_{it} - E (R_{it})
Where,
R_{it} = Actual return on security 'i' during time period 't'
E (R_{it}) = Expected return on security 'i' during time period 't'

IV. Average Abnormal Returns (AARs)

$$AAR_{it} = \frac{\sum_{t=1}^{N} AR}{N}$$

Where,
i = Number of securities in the study
N = Total number of securities in the portfolio.
(t) = Days surrounding the event day
(t) = -10 ….0…. +10

V. t- value for AAR

$$t\ (AAR) = \frac{AAR}{\sigma\sqrt{n}}$$

Where,
***AAR_{it}** = Average Abnormal Returns*
***σ** = Standard Deviation*
***n** = Number of Securities in the Study*

Hypothesis testing

H_0: There is no significant change in abnormal returns around ex-split date of stock splits.

Table No. 1 Abnormal Returns (AR), Average Abnormal Returns (AAR), and t-value of Stock Split event of the Companies

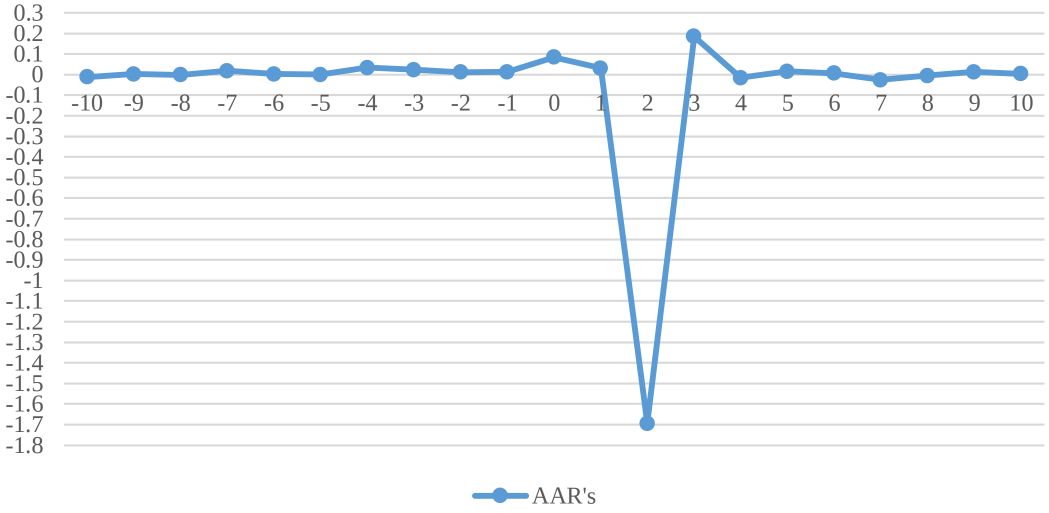
Days	BEL	APOLLO	AVANTEL	BDL	Total AR	AAR	t - Value
-10	-0.003964	-0.011303	-0.020002	-0.009307	-0.044576	-0.011144	-3.342098
-9	-0.009302	-0.021560	0.043711	-0.002974	0.009875	0.002469	0.172899
-8	-0.005458	0.023445	-0.012226	-0.012054	-0.006293	-0.001573	-0.185368
-7	0.016145	-0.018574	0.014592	0.063316	0.075479	0.018870	1.120510
-6	0.001298	0.000145	-0.019800	0.031197	0.012841	0.003210	0.305408
-5	-0.006487	-0.014068	-0.014373	0.037877	0.002949	0.000737	0.058907
-4	0.018510	-0.002899	-0.002179	0.121264	0.134696	0.033674	1.137030
-3	0.007238	-0.016049	0.014337	0.090167	0.095693	0.023923	1.039458
-2	-0.008881	0.042742	-0.030566	0.045280	0.048575	0.012144	0.641487
-1	-0.001170	0.008269	-0.034870	0.081679	0.053908	0.013477	0.549029
0	0.045636	0.034032	0.176933	0.083524	0.340124	0.085031	2.624002
1	-0.022048	-0.003837	0.144409	0.008312	0.126836	0.031709	0.832667
2	0.004841	0.028362	-6.745519	-.064574	-6.776890	-1.694222	-1.006141
3	-0.019672	0.016744	0.696528	0.046292	0.739892	0.184973	1.081392
4	-0.029676	-0.044091	0.019976	-.008941	-0.062731	-0.015683	-1.127931
5	0.014995	0.000746	0.040358	0.005892	0.061991	0.015498	1.762203
6	-0.011997	-0.029670	0.001677	0.066688	0.026698	0.006675	0.317715
7	0.023911	-0.016545	0.065073	-0.175980	-0.103541	-0.025885	-0.490876
8	-0.008102	0.027653	0.015668	-0.053037	-0.017818	-0.004454	-0.250007
9	-0.002409	-0.001579	-0.002096	0.059441	0.053357	0.013339	0.867980
10	-0.017054	-0.017411	-0.017121	0.069630	0.018044	0.004511	0.207813
(*Significant at 5% level, table value is 1.94)							

Source: Author Calculation using Excel

From the above table, we can clearly notice that there are more values of positive returns of Total AR (8/10) than the negative returns in the pre-stock split event window. With respect to the post-stock split event window also, positive returns are more than the negative returns(6/10) comparatively few than the pre-split event window. It indicates that the investors are getting positive abnormal returns in both, pre and post stock split event window.

The abnormal returns are calculated by deducting the expected returns from the actual returns earned. Day wise abnormal returns of all securities are averaged by dividing the sum of all securities abnormal returns by the total number of securities.

Figure 1: Average Abnormal Return (AAR)



It can be observed that the impact of stock split event was resulted to be positive returns for 15 days (-9, -7, -6, -5, -4, -3, -2, -1, 0, +1,+3, +5, +6, +9, +10) and the negative for 6 days (-10, -8, +2, +4, +7, +8). On the event day it can be addressed that the share price reaction was **0.085031,** which shows share has significant positive abnormal return on event day. Even after the event day also, the stock split resulted in abnormal returns for 6 days out of 10 days post-split event window. Hence, the Null Hypothesis (H_0) is rejected. By this we can conclude that the there is an abnormal change in the share prices of capital goods companies listed at BSE during the stock split.

Conclusion

According to the results obtained, the researcher concludes that stock splits have a relatively positive and favorable impact on the stock prices of capital goods companies during the stock split event period. The analysis, based on the t-values of Average Abnormal Returns (AAR), confirms that the event led to abnormal returns on multiple days within the stock split-event window. These findings suggest that investors react positively to stock splits, often perceiving them as signals of future growth or improved liquidity. Hence, stock splits can serve as effective tools for generating abnormal returns, offering significant benefits and insights for short-term investment strategies.

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Appendix

Selected Companies of the study

Security Code	Security Name	Company Name	Ex -Date
500049	BEL	Bharat Electronics Ltd	16-Mar-17
540879	APOLLO	Apollo Micro Systems Ltd	04-May-23
532406	AVANTEL	Avantel Ltd	14-Aug-23
541143	BDL	Bharat Dynamics Ltd	24-May-24