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## Research Article

# IMPACT OF STOCK SPLIT ON SHARE PRICES

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**ABSTRACT**

This paper focuses on the effect on the share price of various corporate announcements like stock split. The study focuses on the abnormal returns on the stocks due to stock split announcements. The study shows that there is abnormal movements in the stock prices after the announcement of stock split and the effect of stock split.



## INTRODUCTION

A stock split or stock divide increases the number of shares in a public company. The price is adjusted such that the before and after market capitalization of the company remains the same and dilution does not occur.

Take, for example, a company with 100 shares of stock priced at Rs. 500 per share. The market capitalization is 100 × Rs. 50, or Rs. 50000. The company splits its stock 2-for-1. There are now 200 shares of stock and each shareholder holds twice as many shares. The price of each share is adjusted to Rs.250. The market capitalization is 200 × Rs. 25 = Rs. 50000, the same as before the split.

Ratios of 2-for-1, 3-for-1, and 3-for-2 splits are the most common, but any ratio is possible. Splits of 4-for-3, 5-for-2, and 5-for-4 are used, though less frequently. Investors will sometimes receive cash payments in lieu of fractional shares.

It is often claimed that stock splits, in and of themselves, lead to higher stock prices; research, however, does not bear this out. What is true is that stock splits are usually initiated after a large run up in share price. Momentum investing would suggest that such a trend would continue regardless of the stock split. In any case, stock splits do increase the liquidity of a stock; there are more buyers and sellers for 10 shares at Rs. 500 than 1 share at Rs. 500.

Other effects could be psychological. If many investors believe that a stock split will result in an increased share price and purchase the stock the share price will tend to increase. Others contend that the management of a company, by initiating a stock split, is implicitly signaling its confidence in the future prospects of the company.

### LITERATURE REVIEW

The question of why stock splits are issued, given that they are purely cosmetic accounting changes, has been raised by various researchers across several countries. Two complementary approaches have been followed to learn about what motivates the stock split decision. The first approach is to get an insight into managements' view regarding stock splits and the second is to study how the issuing company's stock reacts to stock splits in terms of returns, liquidity and volatility.

Management surveys have been conducted to gain insight about stock splits and manager's motives for issuing them. The survey research on stock splits dates back to the early twentieth century. Dolly (1933) surveyed managers of eighty-eight companies issuing stock splits; the finding of the survey was that the main motive for issuing stock splits is to widen the distribution base among the shareholders. This leads to increased marketability of the share and enhanced advertising value of the company. Corporate managers believe that a wider distribution of shares leads to a steadier volume of trading. The other reasons for issuing stock splits are to receive higher effective dividend rates, to facilitate the sale of stocks, to permit listing of the stocks and to create goodwill in the stock market.

Baker and Gallagher (1980) surveyed 100 chief finance officers on their perceptions about stock splits. The conclusion drawn from the 63 responses received was that stock splits serve to

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keep the stock price in an optimal range, thereby, increasing liquidity and the number of shareholders.

Baker and Powell (1993) surveyed 251 New York Stock Exchange and American Stock Exchange firms that issued stock splits. The responses of 136 firms reveal that the primary motive for issuing a stock split is to move the share price to a better trading range, resulting in 4 improved trading volumes. Some other important motives include signaling better future prospects to attract potential investors. The respondents also expressed the view that the preferred trading range for their stocks is $20 to $35.

Empirically, the market reaction to these decisions, in the form of changes in stock returns, trading volumes and volatility of stock prices, has been investigated by various researchers (Fama *et al*., 1969; Copeland, 1979; Reilly and Drzycimski, 1981; Murray, 1985; Ohlson and Penman, 1985; Lakonishok and Lev, 1987; Dravid, 1987; Sloan, 1987; Brennan and Copeland, 1988; Dubofsky, 1991; Kryzanowski and Zhang, 1991; Wiggins, 1992; Masse *et al*., 1997; Wulff, 2002; Dennis and Strickland, 2003; Reboredo, 2003; Ariff *et al*., 2004; Mishra, 2007; Kalotychou *et al*., 2008).

On the theoretical front, three major hypotheses have been put forward to explain the motives for and the impact of issuing stock splits. They are the **Signaling hypothesis, the Trading Range hypothesis and the Liquidity hypothesis**. These hypotheses are not mutually exclusive (Baker *et al*., 1995), and are summarized below:

The **Signaling hypothesis** (Fama *et al*., 1969; Grinblatt *et al*., 1984; Lakonishok and Lev, 1987; Brennan and Copeland, 1988; McNichols and Dravid, 1990; Ikenberry *et al*. 1996; Mohanty and Moon, 2007) suggests that the announcement of stock splits provides signals about the optimistic future of the splitting firm to the market. The signaling model assumes managers, as company insiders, usually have better estimates about the future prospects of their company than current and prospective shareholders (Baker *et al*., 1995).

The **Trading Range hypothesis**suggests that stock splits realign share prices to a preferred price range (Lakonishok and Lev, 1987). This makes the shares more affordable to small investors enabling them to trade in the shares. Management also prefers such a situation as 5 it creates a more controllable ownership mix (Powell and Baker 1993/1994). The empirical literature also suggests that the ownership base is enlarged after stocks are split (Easley *et al*., 2001; Dhar *et al*., 2003). Thus, stock splits are justified if stock prices are at high levels (McNichols and Dravid, 1990).

The trading range hypothesis leads to another hypothesis called the **Liquidity hypothesis** (Lakonishok and Lev, 1987). When the trading price of a share is very high, its liquidity may decline. In such a situation a stock split brings the share price into an optimal trading range, making the stock more attractive to investors. This, in turn, enhances liquidity by increasing the volume of shares traded and decreasing the bid-ask spread. An increase in trading activity following stock splits has been observed in prior studies (Murray 1985; Desai, *et al*., 1998), providing support to the liquidity hypothesis. Anshuman and Kalay (2002) also present a model that shows that firms split their stocks to create liquidity. However, Conroy *et al*. (1990) conclude that the shareholders' liquidity, measured by percentage bid-ask spread, is worse after stock split announcements.

## RESEARCH METHODOLOGY

### *Objectives of the research*

The main objective behind this research is to study one of such corporate action which is very puzzling and does not change any valuation of the firm, still many companies following such practices of splitting their shares. Our objective is to check to what extend such event affect the share price and volume traded by the investors. We also want to check the cumulative effect of such event and also the impact each company. We also want to check whether any insider information play any part in abnormal trading and abnormal price effect of the firm.

### *Scope of the research*

For our research the scope is all those listed companies of BSE 200 in which Stock Split has taken place during last five years (From 2001 to 2006). The scope is limited to those companies only in which daily share price data is available for the required period.

### *Research Data*

Our basic sample is comprised of all BSE 200 common stocks that had splits between 2001 and 2006. We focus on BSE 200 stocks since the simple regression model we use for the estimation describes pricing in a specialist-operated market like the BSE 200. In addition, stocks that are traded on different exchanges may exhibit different patterns before and after splits (Dubofsky (1991)). By restricting our sample to BSE 200 stocks, we neutralize any nuisance effects introduced by the trading locale. We selected all the present companies of the index which had split in the above stated period. We found the total 55 companies in which split took place, but due to non-availability of data or some other reasons we had to eliminate 11 companies of them and we end up selecting 44 companies for our research. We selected companies with any kind of split ratio, as we were comparing the script return with the market return. To make our research more homogeneous and worth comparing we gather data of adjusted effect of split. Means if company has 2:1 split ratio, then the price of the share tends to be half theoretically but we just combined the two shares into one to check the real effect, so can't see any execrable effect of the event. We have also gathered data of daily price change to make meaningful evaluation. To frame a regression line we selected the index return for the same period.

Ideally, we would like to compare a stock's trade process in two steady states: one before and one after the split. A split announcement may change the market's perception of a firm, dictating that the pre-split estimation period must precede the announcement date. Previous research shows an abnormal increase in trading activity beginning ten days prior to the split announcement (Maloney and Mulherin (1992)), so we end the pre-split estimation period 30 days prior to the announcement day. In light of evidence that an abnormal imbalance of trades can last for about ten days after the ex-date (Conrad and Conroy (1994)), our post-split estimation period consist of 30 days after the split takes place. We wanted to check long term

and short term effect of the split so we frame different trading windows, they are as follows.

| No. | Time Period | Window |
|---|---|---|
| 1 | 30 days before announce date to 1 day before announce date | **AD-30 to AD-1** |
| 2 | 10 days before announce date to 1 day before announce date | **AD-10 to AD-1** |
| 3 | The announcement date | **AD** |
| 4 | 1 day after announce date to 1 day before split date | **AD+1 to ED-1** |
| 5 | The split date | **ED** |
| 6 | 1 day after split date to 10 days after split date | **ED+1 to ED+10** |
| 7 | 1 day after split date to 30 days after split date | **ED+1 to ED+30** |

The formulation of the window is same for price and volume effect that we checked. The days are counted not as trading days but by normal day's calculation so it might be possible that there are different numbers of trading days for two firms in the same window.

Detailed trade data was obtained from the Capital line database. We use only BSE 200 transactions and quotes. For our research we require data of daily closing price of the script, BSE 200 Closing price for the same day and daily volume traded for the script. For each script we collected data for 6 months before the announcement of the split, 1 month after the split took place and also the data from the announcement date to split date.

### *Data Analysis*

In order to find out the abnormal price effect, first of all the daily script return and daily market return was calculated. Then the regression between script return and market return was calculated. On the basis of Y intercept and expected return, the abnormal return was calculated.

$$CAR_i(t_1,t_2) = \frac{1}{T}\sum_{j=t_1}^{t_2} ARij$$

***Cumulative Abnormal Return (CAR):*** cumulative sum of stock i's prediction error (abnormal returns) over the window ($t_1$, $t_2$)

$$AAR_i(t_1,t_2) = \frac{CAR_i(t_1,t_2)}{n_i(t_1,t_2)}$$

***Average Abnormal Return (AAR):*** stock i's cumulative abnormal return divided by the number of days in the window (t1, t2)

$$MCAR(t_1,t_2) = \frac{1}{N}\sum_{i=1}^{N} CAR_i(t_1,t_2)$$

***Mean Cumulative Abnormal Return (MCAR):*** average of the cumulative abnormal returns across observations (firms); it is a measure of the abnormal performance over the event period,

$$MAAR(t_1,t_2) = \frac{1}{N}\sum_{i=1}^{N} AAR_i(t_1,t_2)$$

***Mean Average Abnormal Return (MAAR)****:* sample average of firm AARs. This measure of abnormal performance takes into account the fact that the number of days in that window ($t_1$, $t_2$) may be different across firms and gives therefore a greater weight to the ARs of firms for which this window is shorter. On the contrary, MCAR gives same weight to every ARs. This implies that MAAR is more powerful when the "abnormal behavior" of returns is concentrated in short window, while MCAR is more powerful in detecting abnormal performance over long window.

### *Name of the Companies and Their Split Details*

First of all we found that many companies in which split took place in years (From 2010 to 2011), and we found out total 5 companies. The following data represent the brief overview of companies and their split details.

| No. | Company's Name | Source Date | Split Date | Split Ratio |
|---|---|---|---|---|
| 1 | Bhusan Steel | 26/08/2010 | 23/09/2010 | 5:1 |
| 2 | LIC housing Finance. | 21/12/2010 | 31/12/2010 | 1:5 |
| 3 | MMTC. | 11/06/2010 | 30/07/2010 | 10:1 |

The detail analysis of each of the above mentioned companies is given in following section.

### *Bhusan steel Ltd. Split and Other Statistical Details*

| Source Date | Split Date | Split Ratio | Ex Split FV | R Square | Alpha | Beta |
|---|---|---|---|---|---|---|
| 26/08/2010 | 23/09/2010 | 1:5 | 2 | 0.013 | -0.006 | 1.523 |

### *Abnormal Return (Price): (In Percentage)*

| | *AD-30 to AD-1* | *AD-10 to Ad-1* | *AD* | *AD+1 to ED-1* | *ED* | *ED+1 to ED+10* | *ED+1 to ED+30* |
|---|---|---|---|---|---|---|---|
| **Cum. AB Return** | 0.44 | 0.23 | 0.01 | -0.49 | 0.01 | 0.21 | 0.45 |
| **Mean Daily AB Return** | | | | **0.01%** | | | |

### *LIC Housing Finance*

### *Split and Other Statistical Details*

| *Source Date* | *Split Date* | *Split Ratio* | *Ex Split FV* | *R Square* | *Alpha* | *Beta* |
|---|---|---|---|---|---|---|
| **21/12/2010** | **31/12/2010** | **1:5** | **2** | **0.0022** | **0.020** | **0.54** |

### *Abnormal Return (Price): (In Percentage)*

| | *AD-30 to AD-1* | *AD-10 to Ad-1* | *AD* | *AD+1 to ED-1* | *ED* | *ED+1 to ED+10* | *ED+1 to ED+30* |
|---|---|---|---|---|---|---|---|
| **Cum. AB Return** | 0.13 | 0.07 | 0.02 | -0.60 | 0.02 | 0.03 | 0.39 |
| **Mean Daily AB Return** | | | | **0.00%** | | | |

### *MMTC*

### *Split and Other Statistical Details*

| *Source Date* | *Split Date* | *Split Ratio* | *Ex Split FV* | *R Square* | *Alpha* | *Beta* |
|---|---|---|---|---|---|---|
| 29/06/2010 | 30/07/2010 | 1:10 | 1 | 0.0017 | -0.018 | 0.66 |

| | *AD-30 to AD-1* | *AD-10 to AD-1* | *AD* | *AD+1 to ED-1* | *ED* | *ED+1 to ED+10* | *ED+1 to ED+30* |
|---|---|---|---|---|---|---|---|
| **Cum. AB Return** | -13.56 | -4.57 | -0.66 | -15.32 | -0.03 | 0.09 | 0.36 |
| **Mean Daily AB Return** | | | | **-0.00%** | | | |

### *Abnormal Return (Price): (In Percentage)*

## CONCLUSION

Ever since Fama, Fisher, Jensen, and Roll's seminal paper [1969], financial economists have sought to understand why markets react to stocks split announcements, since a stock split appears to be merely a cosmetic transaction that increases the number of shares outstanding and reduces the share price by the split factor. Taken together, our evidence shows that the abnormal returns around split announcements are consistent with an earnings information-based explanation.

We find that analysts increase their earnings estimates around stock split announcements, and that the revision is greater for firms with more opaque information environments. Furthermore, the earnings forecast revisions for splitting firms is significantly higher than that for matched firms, indicating that the observed increase in earnings estimates does not result from analysts sluggishly revising their forecasts in response to the splitting firms' past performance. The results also show that the cross-sectional variation in the analyst forecast revisions is positively correlated with the cross-sectional variation in announcement returns.

Finally, we find that the future earnings growth of the splitting firms is higher than that of matched firms with similar past earnings growth, for up to two years following the split.

While both the splitting firms and the matched firms experience lower earnings growth in future periods after the split compared to their own past earnings growth, the future earnings growth of the splitting firms is nevertheless higher than that of the matched firms. This result implies that the earnings growth experienced by the splitting firms before the split is less transitory in nature than the pre-split expectations (as proxied by the performance of ex-ante comparable firms). This result helps explain why analysts revise their expectations of future earnings following a split announcement and increase their earnings estimates. This positive change in expectations is likely to be a primary reason why the market views a stock split announcement as favorable news.

Our evidence supports the hypothesis that while managers often state various motivations for splitting their stock, the market's reaction to stock split announcements is likely driven by information related to the firm's earnings, which the market infers from the split announcement and views as favorable news. An earnings information hypothesis therefore warrants renewed attention as an explanation for the market's reaction to stock split announcements.

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