



Impact of Stock Split on Stock Return in Companies Listed on the India Stock Exchange

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Abstract

The aim of this research is to evaluate the impact of a company's announcement, which in this case is a stock split, on the return of a company's stock listed on the Indian stock market. basing on this, the extent and significance of the effect is measured and examined through parametric and non-parametric tests. due to the aim of the paper is to test if the stock split will have a positive influence on the stock price around the implementation of the policy, we use the event study method and set regression model. In order to test the effect of the strategy, we picked estimation period and event period from each stock, and conduct regression analysis respectively. As suggested by the cumulative average AR value, the precision weighted CAAR and the ABHAR, the results imply that during the short window event of pre- and post-10 days of stock splits, the selected company have witnessed significant ARs so we reject H0 and accept H1, which suggests the presence of ARs within the event window. Similarly, other tests such as Patell_z, Cross-sectional Test-t, Generalized Sign_z, Std. Cross-sectional Test_z and Adjusted Patell_z also suggest to reject H0 stating that there are ARs during the study window of the stocks splits. However, these findings are based on the 10-days event and 90-days estimation windows used for analysis and impact of the stocks splits on the stock returns of the selected company.

Keywords: Stock Return; Stock Exchange; Stock Split; Stock Price

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SDGs: Quality Education (4); Decent Work and Economic Growth (8); Peace, Justice and Strong Institutions (16)

1.0 INTRODUCTION

Investors' behavior changes from time to time. Few of them realize that the trading prices of a particular stock are lower than expected. They are also tend strongly to trade securities at the lowest prices due to uncertainty, financial transaction costs, taxes, etc. Therefore, if stock prices are at higher levels than their expectation is that most of them may not like buying and investing in stocks, On this basis, managers will impose many procedures, including dividing the nominal value of shares in certain proportions (Renaldo, Andi, et al., 2021). These proportions will be in accordance with the guidelines of the financial market. No company can reduce the nominal value to less than the guidelines of that market in order to provide opportunities for investors to achieve some gains. It is often said that stock splits are purely cosmetic events (Stevany et al., 2022). However, studies have found many stock market effects associated with stock splits (Satyajit& Sweta, 2008).

With the progress and development of the economy, the term stock split appeared in the last years of the twenty-first century, which refers to the fact that the share price of a company rises to a nominal level that may make most investors uncomfortable or that the price of that company may exceed the share prices of similar companies in the same sector. In this the situation is that the company board of may decide to divide the company's shares, which could make its shares more affordable for foreign investors, and on the other hand, generate for the company an increase in the liquidity of its shares (Ge et al, 2023). When a stock split occurs, this action will also lead to an increase in the price of the stock even though its price will decrease immediately after the split. This is because small investors may view the stock as less expensive than its true value and therefore, buy it, which effectively enhances demand for the stock and raises its price in the financial markets (Renaldo, Suhardjo, et al., 2022). The other possible reason for the increase in the share price is that the stock split provides a signal to the financial market that the company's share price is rising despite its split (SPLIT), and this is a possibility whereby investors may assume that this rise in price will continue in the future, which leads to an

increase in demand for the stock. This reflects an increase in its price (Hogg, 2022). On this basis, the researcher infers that investors in the financial markets seek to achieve higher returns (Infante et al., 2024). Many companies use pricing strategies for their stocks to influence their returns. Stock split is one of these strategies, which is tantamount to passing a positive signal about the company's development prospects in the market, which is reflected in improving investors' confidence in the company and attracting their attention.

Consequently, the study supported positive signaling theory and corporate stock image enhancement theory as the rationale for Indian companies seeking stock splits and the resulting positive market reaction. While the study which was implemented by (Riantani & Hendayana, 2020) which presented the analysis of stock performance (Renaldo, Fadrul, et al., 2022; Renaldo, Junaedi, et al., 2022), which is measured through abnormal returns before and after the stock split event and its reflection on the company's stock. The results of the study showed that the average abnormal returns for stocks increased after the stock split. The results also showed that the research sample market reacts positively to the stock split. Stock abnormal returns also showed significant differences between pre- and post-stock splits. Therefore, the process of stock split simply means that the company changes the number of its outstanding shares and adjusts the share price in a way that is proportional to the trading of more shares in the financial market (Fadrul et al., 2024), in addition to the remaining budget sheet items, it is the same except that the total number of outstanding shares of the company increases proportionally to the stock split ratio (Renaldo, Rozalia, et al., 2023).

From the above, stock splits can be viewed as a decorative change without having many tangible financial implications. To gain a better understanding of this. (Pandow& Butt, 2019) pointed out that splitting the stock into four for one will result in the holder of one share obtaining four shares after the company divides its shares. However, they are entitled to only a quarter of the company's financial holdings. While the actual importance of the stock split is the size (Fadrul et al., 2023; Sari et al., 2021; Wijaya et al., 2023) of the company's brand, which is supposed to rise as a percentage of the stock price after the split (Ibrahim & Panjaitan, 2020).

2.0 LITERATURE REVIEW

Stock Splits

Stocks are securities that represent ownership in a company. An investor's ownership is determined by the number of shares he holds. Shares are a form of participation by entities or individuals in the ownership of a company that takes the form document indicating that its owner is the owner of the security that has been issued. On this basis, a stock split or stock split can be defined as an institutional procedure undertaken by the issuer to increase the number of its issued stock (Putra& Suarjaya, 2020). stock split performed when the stock price is very high, which affects the ability of investors to buy shares, especially small investors. According to this process, the share price will be lower so that small investors can access it more easily, which reflects the increased demand for split shares. Or diatom. The purpose of investors in investing in split stocks is to obtain the maximum possible return, and the returns of these stocks are considered risk reward to the courage of investors bear the risk their investment (Muna& Khaddafi, 2022).

stock split one of the actions company can take to reduce the face value of a stock price (Kumalasari & Endiana, 2023). A stock split is done by increasing the number of shares outstanding to encourage more trading of shares (Manik et al, 2023). In case of a stock split, the company announcing the stock split notifies the Stock Exchange of the registration date, after completing all legal and procedural procedures. Accordingly, the Stock Exchange sets the previous dates, which generally come a few days before the registration date, on the previous date and after, and the market is Financial is the only determinant of the stock price after the split (Satyajit& Sweta, 2008). Stock splits are also considered cosmetics, that is, they are a way to increase the luster of stocks, although they do not increase investors' wealth, but they make them appear more attractive (Datta& Banerjee, 2012). Holding more shares through a stock split will make investors' investment portfolios more volatile. Therefore, a stock split is an action that has no economic value.

However, many stock splits in the stock market show attractive signs only from a practical standpoint, because the possibility Splitting shares will lead to a reduction in their prices (Rukmana, 2020). Therefore, it is expected that this will attract investors from different investment backgrounds, which may be reflected in an increase in its liquidity and returns. Consequently, investors will be more interested in participating in the supply and demand mechanism in the stock market, as the higher the trading mechanism in a stock, the higher the stock price. The potential for returns has increased (Fauzi& Hidayat, 2016). Therefore, a stock split must not have any direct economic value to the company, nor have any effect on the value of the company's assets. However, stock split is one of the efforts made by the company to increase the number of shares to face limited capital for medium and small investors, and on this basis the company implements a stock split policy, which is to maintain the trading of its shares within an ideal trading range and to carry and transmit information related to investment opportunities in the form of increased profits and cash profits (Hutahuruk et al., 2024; Lasrya et al., 2021; Renaldo, Sudarno, et al., 2021).

It should be noted that share splits contain costs that must be borne, especially by companies that are able to bear these costs. As for a weak company that is unable to bear these costs, splitting the shares will only reduce the price of its securities (Sari, 2023). The phenomenon of stock splits is considered one of the literatures

related to the economics of corporate finance, meaning that stock splits mean dividing shares into shares, which leads to an increase in the number of companies shares without the need for buying and selling operations that change the amount of capital (Vina et al., 2021). This naturally has an impact on investor sentiment, as investors will feel as if they are more powerful by owning a larger number of shares (Marwata, 2012). In this regard, it can be noted that stock splits are in fact a procedure for the company that has no economic value to it. Based on what was mentioned, managers claim that stock splits aim to attract more investors and improve stock liquidity. However, many studies questions whether liquidity improves after stock splits.

In practice, it turns out that while stock splits lead to lower stock price levels, in addition, turnover decreases after a stock split (Hocky et al., 2023), leading them to believe that splits lead to permanent reductions in liquidity (Lin et al, 2009). In line with what was mentioned, the stock splits of most companies have received comprehensive examination for a long time, but the causes of the splits and the abnormal returns associated with them are still unclear (Ansorimal et al., 2022; Chandra et al., 2018; Lumbantoruan et al., 2021). It is clear that stock splits do not affect the cash flows (Renaldo et al., 2024; Renaldo, Sally, et al., 2023) nor the capital structures of companies (Renaldo, Suyono, et al., 2023). These factors may work to boost stock prices and achieve positive returns, whether when the split is announced or when the split is implemented (Nguyen et al, 2017). Stock splits are always of special interest to academics and professionals because company stock prices usually rise, but the fundamental value of the company does not change after the stock split is announced. Many researchers try to find plausible reasons why companies split their shares and why there is an increase in stock prices and the returns associated with that (Beladi et al, 2016).

There is no doubt that there are many behavioral explanations that can be provided to explain the results, but this is left to future research, as stock splits in general have a temporary and short-term effect on shareholder value when the company announces the split of its shares, while the benefits that are generated from the stock split Not clear in the long term.

Stock Return

Return is a measure of the additional value generated by investing over the amount invested in a particular stock (Sheeba,2011). Or it is the total profit earned on the investment during a certain period (Gitman& Zutter, 2012). Or it is a cash flow resulting from investing in an asset, thus generating cash flows for at least a financial year (Broyles, 2003). Common shares are among the most common issued shares in the financial markets. Joint stock companies issue these shares for investment by individuals and companies (Suharti & Murwaningsari, 2024). On this basis, common shares can be defined as a form of long-term external financing available to the company and the primary source during its establishment stage. The values of common shares also change depending on the financial market conditions (Anton et al., 2023), the company's conditions, or its level of performance, and he pointed out (Vasigh et al, 2010) there are five types of ordinary shares: Par Value, which means the legal value printed on the share certificate, and Market Value. This type of shares represents the value that the investor actually pays to buy the share, and reflects the value of the share's trading in the financial markets at a certain time, and the liquidation value.

Value refers to the remaining balance to be distributed to common stock shareholders in the event of terminating the company's business and selling its assets after paying all the company's debts at the beginning of the company's approach to bankruptcy, as for the book value, it refers to the ownership of a single shareholder in the company's net assets, while the real value means the fair value of the share, which is justified by analysis of the basic factors of the share's value. Perhaps it is useful to emphasize that the forms of stock returns take several forms. The first form is the distribution of profits to the shareholder and his receiving a percentage of the profits in addition to bearing a portion of the loss if the company's investments suffer a loss in a given year. The second form takes the form of interest. When returns are paid in the form of interest on assets represented by debt instruments such as bonds (Howells& Bain, 2007). The primary purpose that investors seek when investing in stocks is to obtain the maximum possible return after splitting the shares, as this is expected to affect stock returns positively.

This return is considered a risk reward for the courage of investors to bear the risks of their investments (Gilli& Schumann, 2011). In addition, (How& Tsen, 2019) has studied the effect of stock splits on their returns. They found that the stock split procedure affects stock returns in terms of abnormal returns. Therefore, there is a big difference between the stock returns in the event period and the stock returns in the estimation period calculated with the abnormal return. According to (Scott, 2005), holders of ordinary shares can benefit from investment and obtain returns in two ways. The first is to achieve a revenue return represented by the company distributing a portion of its profits to investors in ordinary shares, and the second is to achieve a capital return, which is achieved by an increase in the value of the ordinary share during the period of investor ownership. What's that arrow? In line with what was mentioned, it can be said that the return on common shares consists of the return that the shareholder expects, depending on the quality of information obtained by shareholders, and based on (Titman et al, 2011), the expected return can be calculated through the equation:

$$E(R)=\sum ri \times pi$$

whereas:

$E(R)$ = expected risky return

ri = expected return

P_i = probability of the expected return occurring

As for the unexpected return, its collection depends on the ability of those who continue to read the information that is circulated during the year about the rise or fall in the value of stocks more than expected, and therefore the total expected return consists of summing the expected return with the unexpected return, and accordingly the total return can be calculated from through the equation (Ross et al, 2010).

$$Tr = E(R) + U$$

whereas:

R_r = total return

$E(R)$ = expected risky return

U = Unexpected return from unexpected events

Signal Theory

The concept of signaling theory is based on the action taken by the company's management to give the investor or group of investors evidence about its direction in the future. This evidence results in decisions related to financing (Brigham & Houston, 2015). This theory emphasizes that debt financing serves signal to investors the company cash expectations, and in some cases, managers make changes in the capital structure to deliver a signal to external investors with the aim of attracting their investments (Alipour et al, 2015). (Zhu 2015) pointed out that signaling theory includes three elements:

- A. The sender: refers to managers who have information about various companies.
- B. Signal: refers to a piece of information that managers possess, which is communicated to the general public.
- C. The future: It includes a group of investors who have multiple transactions with several parties to achieve profits.

Trading Range Theory

States that a high stock price can decrease the volume of active stock trading, which can lead to a stock split being performed by the company. It is believed that more investors will become active due to the stock split, which will cause the stock price to rise.

Liquidity Theory

States stock split can encourage stock price to fall to more affordable and attractive level for investors, making the stock more liquid. A stock split will increase investors' buying power, making it easier to trade the stock. Additionally, stock split will increase the liquidity of the company stock trading, which is indicated by an increase stock trading volume.

3.0 METHODOLOGY

Hypothesis

The research is based on two main hypotheses that stipulate (Renaldo, James, et al., 2023; Renaldo, Suhardjo, et al., 2023):

hypothesis (H_0) which upholds that there are no unusual returns during the period of the event window?

hypothesis (H_1) proposes the existence of ARs during the period of the event window?

Model

The aim of the research is to test if the stock split will have a positive influence on the stock price around the implementation of the policy. To solve the problem, we use the event study method and set regression model as following:

$$R_t = \beta_0 + \beta_1 R_{mt} + \mu \dots (1)$$

Where:

R_t = individual stock return.

$\beta_1 R_{mt}$ = contemporaneous market return.

μ = regression error term.

In the model, we use stock's daily closing price to calculate stock return, and select S&P500 index on behalf of the market return. The variables are represented as following:

$$R_t = \ln P_{t+1} - \ln P_t \dots (2)$$

$$R_{mt} = \ln I_{t+1} - \ln I_t \dots (3)$$

Where:

P_t = stock closing price on day t.

I_t = Index closing price on day t.

In order to test the effect of the strategy, we pick estimation period and event period from each stock, and conduct regression analysis respectively. If we set the implement day as $t = 0$, the event period should consist of $t = -E, \dots, 0, \dots, E$, and the estimation period should even add some "quarantine" period before the event period. We predict the returns that should occur during the event window a following:

$$\hat{R}_t = \beta_0 + \beta_1 R_{mt} \dots (4)$$

and then compare with the actual returns that happened R_t . To do the comparison, we establish the following two formulas:

$$A_{it} = R_t - \hat{R}_t \quad (t = -E, \dots, E) \dots (5)$$

$$CAR_t = \sum_{s=-E}^t ARS \dots (6)$$

Event studies may include a hierarchy of estimates in which the ARS is multiplied by the CARs, which are averaged to the CAAR in cross-sectional studies. While in studies of long-term events, BHAR is widely used instead of CAR according to Equation 7.

$$BHAR_i = \prod_{t=T_1+1}^{T_2} (1 + R_{i,t}) - \prod_{t=T_1+1}^{T_2} (1 + E[R_{i,t} | \Omega_{i,t}]) \dots (7)$$

While the BHAR can also be averaged to ABHAR in the cross-sectional studies, it is represented in Equation 8.

$$ABHAR = \frac{1}{N} \sum_{i=1}^N BHAR_i \dots (8)$$

In addition to using the above-mentioned parametric statistical tests, such as t-statistic, and non-parametric statistical testing Corrado Rank Test, Generalized Rank Test and Generalized Sign Test, are calculated to check the sign- finance and robustness of AR, AAR and CA.

4.0 RESULTS AND DISCUSSION

To calculate the length of the rendering window, the following equation was used:

$$L_1 = T_1 - T_0 + 1$$

Where:

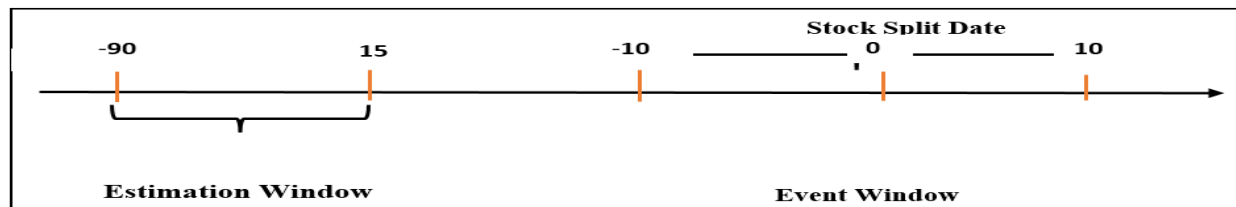
T_0 : event day of the estimation window.

T_1 : following event day.

The t-statistics of the CARs for each company and the t-statistic under $H_0: CAR_i = 0$ is given below:

$$t_{CAR} = CAR_i / SCAR$$

In this market return model, the event studies use event window of (-10,10) and estimation window (-90-15) and can be seen the Figure 1. Also, the study uses forecast normal returns with regression enquiry that regresses company returns on the market returns over the estimation window. This analyses the distinctive association



among the scrip and its reference index India which is captured in two parameters that is alpha(a) and beta (β).

Figure 1. Timeline for Event Study and Research Design

Table 1. Price Effect Associated with Post Effective Day (ED to ED+90)

Event ID	Company	Stock Split Data	Actual Stocks Return	Actual Market Return	Alpha	β	Old FV	New FV	Residual Standard Deviation
1	Ravalgaon	24-11-2023	-0.67	0.009	0.003	0.4	50	10	0.022
2	Atal Realtech	16-11-2023	-2.24	-0.02	0.003	0.5	10	2	0.02
3	Avance Technologies	10-11-2023	0.05	0.018	0.0001	0.8	5	1	0.03
4	Hindcon Chemicals	10-11-2023	-1.54	-0.06	0.003	0.8	10	2	0.015
5	M K Proteins	10-11-2023	-0.02	-0.006	0.006	0.2	10	1	0.21
6	HP Adhesives	9-11-2023	0.0223	0.004	0.003	-0.1	10	2	0.03
7	Cantabli Retail	2-11-2023	0.001	0.003	0.012	-2.0	10	2	0.174
8	Mittal Life Style	1-11-2023	-0.001	0.001	0.014	0.03	10	1	0.013
9	BCL Industries	27-10-2023	-0.003	0.005	0.001	-7.0	10	1	0.067
10	Jay Bharat Maruti	26-10-2023	-0.004	-0.03	0.0241	-0.2	5	2	0.022

Note: Estimated search window length is 90 days.

Table 2. Price Effects Associated with Stocks Splits

Event ID	Company	CAR _{value}	BAHR _{value}	CAR _{t-test}
1	Ravalgaon	-0.66	-0.72	-6.51
2	Atal Realtech	-2.29	-2.33	-24.33
3	Avance Technologies	-2.3	-2.37	-19.001
4	Hindcon Chemicals	-1.99	-1.33	-29.001
5	M K Proteins	-0.12	-0.13	-1.22
6	HP Adhesives	-0.03	-0.03	-0.25
7	Cantabli Retail	2.001	6.45	2.45
8	Mittal Life Style	-0.017	-0.021	-0.26
9	BCL Industries	0.56	-0.524	0.114
10	Jay Bharat Maruti	-0.02	-0.034	-0.322

The CAR for selected company given in Table 2 within window of pre and post 10 days of stocks splits. On the contrary to the actual return, can be observed out of total Ten company, only Tow have positive CAR_{value} while rest, that eight company have witnessed negative AR. Moreover, case of the BHAR_{value}, one company have positive value only and respective CAR_{t-test} value can be found for the selected company. It clearly shows that the CAR of most company in the above-mentioned window is negative. Further, the study checked that the CAAR_{value} is -0.28, the precision weighted CAAR_{value} is -0.4 and the ABHAR is -1,85,60.1 which implies that during the short window event of pre- and post -10 days of stock splits, as can be seen in Table 3, the selected company have not witnessed significant ARs to reject H₀ and accept H₁ which suggests the presence of ARs within the event window.

Table 3. Model Specific Tests for the Event of the Stocks Splits

Parameter	Value
CAAR _{window}	(-10, 10)
CAAR _{value}	-0.28
Precision weight CAAR _{value}	-0.4
ABHAR	-1,85,60.1

Table 4. Model-specific Tests viz. Patell_z test

Parameter	Value	P-value
Patell _z	-27.4	000***
Cross section Test _t	-2.9	0.0667**
Generalize Sign _z	-2.4	0.0199**
Std. Cross-sectional Test _z	-3.1	0.00333***
Rank _z	-1.7	0.09444
Adjusted Patell _z	-18.6	000***
ABHAR Cross section Test _t	-1.1	0.311111

Note: *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

The Search has analyzed the model specific tests needs to be conducted in case the event Most research and studies such as Patell_z, Generalized Sign_z, Rank_z, and Skewness Corrected_t, the compiled analysis presented in Table 4.

Patell_z test is a broadly used test indicator the event studies like present study and then calculate the test measurement prediction error modified standard deviation which in this case is negative and the value is (-27.4).

Used the Cross section Test_t to check whether average AR is equal to zero and for the sample company, we found that the Cross-sectional Test-t is at (-2.9) which way means that there is a negative AR of sample company in the given study window time period.

Besides, the Current research has employed Generalize Sign_z test to check whether there is a positive abnormal residual to be different from 0.5 which in this case is (-2.4) hence showing the negative AR in the above set study window.

5.0 CONCLUSION

Conclusion

there are several theories that explain the stock split and among some of the signaling ones are significant, liquidity, trading range and neglect company. The conclusions are drawn based on the market model used the analysis and interpretations. As suggested by cumulative average AR value, precision weighted CAAR and the ABHAR, the results imply during the short window event of pre- and post-10 days of stock split, the selected company have witnessed significant ARs so we reject H₀ and accept H₁, which suggests the presence of ARs within the event window. Similarly, other tests such as Patellz, Cross-sectional Test-t, Generalized Signz, Std. Cross-sectional Testz, and Adjusted Patellz also suggest to reject H₀ stating that there are ARs during the study window of the stocks splits.

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