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IMPACT OF SHARE SPLIT ON RETURNS, VOLATILITY AND LIQUIDITY

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ABSTRACT

A share split is a decision by the board of directors of a company to divide each of its existing shares into multiple new shares. Share split decision does not involve any cash flow. This is just a subdivision of shares. Thus share split is only an accounting entry in the company books with no effect on the assets and liabilities. This paper studies the impact of share split on return, volatility and liquidity of shares around share split announcement date and execution date. The study analyses the data of 318 companies which announced stock split in India during four years from 2021 to 2024. The results indicate the significant positive abnormal returns around the stock split announcement but shows significant negative abnormal returns around the execution date. The liquidity and volatility increases significantly around the stock split announcement as well as around execution date.

KEYWORDS: *Share Split, Liquidity, Returns, Volatility.*

INTRODUCTION

A share split is a decision by the board of directors of a company to divide each of its existing shares into multiple new shares. Share split decision does not involve any cash flow. This is just a subdivision of shares. Thus share split is only an accounting entry in the company books with no effect on the assets and liabilities. Globally, share splits are now a widespread financial strategy, with companies in advanced nations increasingly using them. In India, this is further reflected in the large number of companies adopting share splits after the removal of the par-value concept by SEBI in 1999, with more than two dozen splitting their shares within a year.

Theoretically the share split do not have any impact on the par value of share price as the number of shares held by the shareholders would increase proportionately and the par value of the share held would decrease proportionately. So there is no gain or loss for the shareholder as they continue to hold the same capital asset but in increased number. However, the shareholders might gain or loss due to the increase or decrease in the market value of the shares.

It is believed that a company goes for share split when the share price has risen to a very high level and due to which its liquidity decreases. The share split reduces the price and it becomes more affordable to small investors. Another popular belief is that Share splits also result into wider market for the company. As the number of shares increases after split, it leads to greater

number of transactions leading to increased volume. Through share splits, the companies by reducing the par value of their shares make them comparable with other firms in the industry.

However theory and practice have contradictions. Theoretically there is no change in the share price but various researches have shown that the share split have impacts. This study aims to investigate the impact of share split on return, volatility and liquidity of the share.

LITERATURE REVIEW

The impact of split on share prices has been the focus of various studies, resulting in a comprehensive body of literature covering both theoretical and empirical aspects. The literature available focuses on two aspects of this topic. Some studies discuss about the motivations of having share split and other discuss the impacts of share splits. Many studies have tried to explain the positive signaling hypothesis as the main motivation of share split. Under this hypothesis the managers try to signal the insider information about the future performance of the company through share split. Investors take the share split as an indication of future value of the company and purchase the share, which increase the share price. This hypothesis was given by Fama et. al. (1969) and has been supported by numerous studies over the years (Ross (1977), Leland and Pyle (1977), Grinblatt et. Al. (1984), Brennnan and Copeland (1988), Brennan and Hughes (1991))

Another motivation for share split supported by various studies is the reduction in share price due to the subdivision of shares. The share split reduces the price and it becomes more affordable to small investors. This increases the liquidity of the shares. Various studies support this hypothesis such as Baker and Gallagher (1980), Lakonishok and Lev (1987), McNichols and Dravid (1990) and Baker and Powell (1993).

Ignored firm hypothesis which was suggested by Arbel and Swanson (1993) suggest that the main reason for share split is to pull the attention of shareholders in the company. As per this hypothesis due to the high price of shares, the company was being ignored by the investors. Share split provide the spotlight to the company and increase the visibility of the shares which in turn help to increase the liquidity.

Besides these studies there are many more recent studies which focus on the impact of share split on the returns, risks and liquidity of the shares. The results shown by these studies are mixed as some studies conclude the positive returns associated with the share splits while others show no results. Rohit et al., (2016) concluded insignificant abnormal returns around announcement dates while Hendra, et al. (2020) concluded abnormal returns around exercise dates. Similarly, Podgorski and Pasierbek (2020) found a positive market reaction to the first split information observed through increases in abnormal returns.

The review of literature provides clear gap related to impact of share splits in emerging markets like India. This study has been undertaken to fill this gap by studying the impact of share split on return, volatility and liquidity of shares around share split announcement date and execution date.

RESEARCH METHODOLOGY

Data and Sample

The period of study was four years i.e. 2021 to 2024. During these four years 426 companies announced share split. The study excluded the companies having market cap below 100 crores

and companies whose share price was below Rs 10 at the time of split announcement. The companies with low market capitalization and very small market price can be subject to manipulation, which in turn can affect the results. After eliminating these companies the study used the data of 318 companies. These companies had minimum share split ratio of 2:1 and maximum split ratio being 10:1. The closing share price, daily minimum and maximum share prices, and daily volume data of the companies in the sample have been downloaded from nse.com. Information regarding share splits, announcement date and execution date has been taken from moneycontrol.com

Event Study Approach

Event study approach has been used in this study to analyze the impact of share split on the market prices of the shares, volatility and volume around announcement date and around execution date. The announcement date is the date on which the company announces the share split whereas the execution date is the date on which the share is actually has been split.

In order to analyze the impact of share split on the returns, Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) has been calculated for window period of 61 days i.e. event day and thirty day before event and thirty days after the event. Event day here is announcement day and execution day.

The return of security i on day t has been calculated as follows:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} * 100$$

Abnormal return of security i on day t has been calculated through the following formula:

$$AR_{it} = R_{it} - R_M$$

Where R_M is the daily return of Nifty 50 index

The average abnormal return of 318 companies has been calculated as follows, where n is equal to 318:

$$AAR_t = \frac{\sum_{i=1}^{n} AR_i}{n}$$

Two tailed t test has been applied to study the statistical significance of AAR:

$$t_{AAR_t} = \frac{AAR_t}{\frac{S_{AAR_t}}{\sqrt{n}}}$$

Cumulative average abnormal returns have also been calculated to analyze the cumulative effect:

$$CAAR_t = \sum_{t=-30}^{30} AAR_t$$

Volatility of security i on day t have also been calculated to analyze the impact of share split on volatility both for announcement day and on execution day.

$$\text{Volatility}_{it} = \frac{P_{itmax} - P_{itmin}}{WAP_{it}} * 100$$

Further change in volatility and average change in volatility was also calculated:

$$\text{Change in Volatility}_{it} = (\frac{\text{Volatility}_{it}}{\text{Volatility}_{it-1}} - 1) * 100$$

$$\text{Average Change in Volatility (ACV)}_t = \frac{\sum_{i=1}^{n} \text{Change in Volatility}_i}{n}$$

Two tailed t test has been applied to study the statistical significance of change in volatility:

$$t_{ACV\,t} = \frac{ACV_t}{\frac{S_{ACV\,t}}{\sqrt{n}}}$$

Change in volume and average change in volume of security i on day t was calculated for testing the impact of share split on volume around announcement day and around execution day.

$$\text{Change in Volume}_{it} = (\frac{\text{Volume}_{it}}{\text{Volume}_{it-1}} - 1) * 100$$

$$\text{Average Change in Volume (ACVol)}_t = \frac{\sum_{i=1}^{n} \text{Change in Volume}_i}{n}$$

Two tailed t test has been applied to study the statistical significance of change in volume:

$$t_{ACVol\,t} = \frac{ACVol_t}{\frac{S_{ACVol\,t}}{\sqrt{n}}}$$

The t-statistics calculated for the -30 and +30 days around the announcement and execution dates are used to test the hypotheses of whether the daily average abnormal returns, changes in volatility, and changes in volume are significantly different from zero.

ANALYSIS

Impact of Share Split Around Announcement Date

The paper tries to study three fold impact of share split around announcement date i.e. impact on returns, impact on volatility and impact on volume for 30 days before and 30 days after the announcement date. Statistical significance of these impacts has also been tested by using two tailed t-test for 30 days before and 30 days after the announcement date.

Figure-1 shows the average abnormal returns for 30 days before and 30 days after the announcement date. In order to show the snowball effect the CAAR has also been shown in Figure-2. The data related to AAR, CAAR and values of t-test has been shown in Table-1 only for 5 days before and 5 days after the announcement date due to space constraint. As is clear from Figure-1 the AAR are highest on the day of announcement where it is around 4.3%. The

CAAR is also increasing at a higher pace before the announcement date and it is flat after the event.

Figure-1: Average Abnormal Returns Around Announcement Date

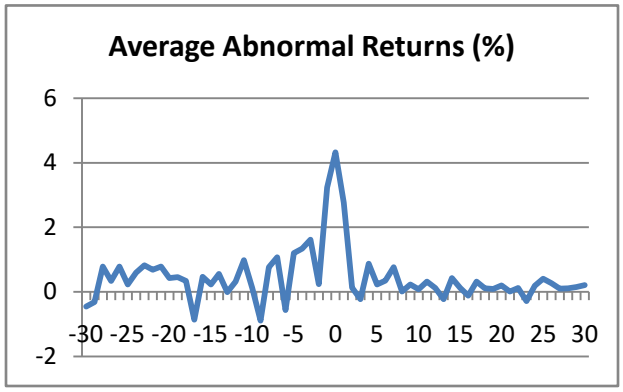
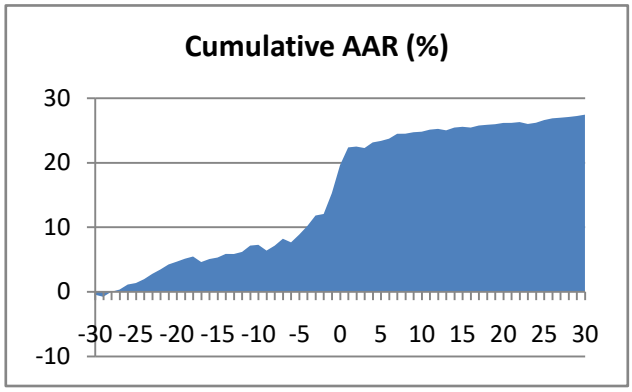


Figure-2: CAAR Around Announcement Date



As far as the statistical significance of AAR, the values of t-test has been calculated and the values of t-test are significant with at least 10% level of significance for 16 days in total during the window period, which includes only two days after the event. As is clear from Table-1 the AAR are significant at 1% level of significance for day -1, day 0 and on day 1. The values on day -5 and -4 are significant at 10% level of significance.

Table-1: AAR, CAAR and t-test for AAR before and after 5 days of Announcement

Day	AAR (%)	t-test	CAAR (%)
-5	1.2	1.87*	8.86
-4	1.34	1.76*	10.2
-3	1.62	1.45	11.82
-2	0.24	1.23	12.06
-1	3.23	1.97**	15.29
0	4.32	2.04**	19.61
1	2.76	1.98**	22.37
2	0.13	0.98	22.5
3	-0.23	1.21	22.27
4	0.87	1.11	23.14
5	0.23	0.09	23.37
*Significant at 10%, **Significant at 5%, ***Significant at 1%			

Average change in volatility around announcement date has been summarized in Figure-3 for a window period of 61 days. As is clear from the figure the volatility is highest near the event day, where it touches 98%. Before and after the event the average volatility is from 10% to 45%.

Figure-3: Average Change in Volatility Around Announcement Date

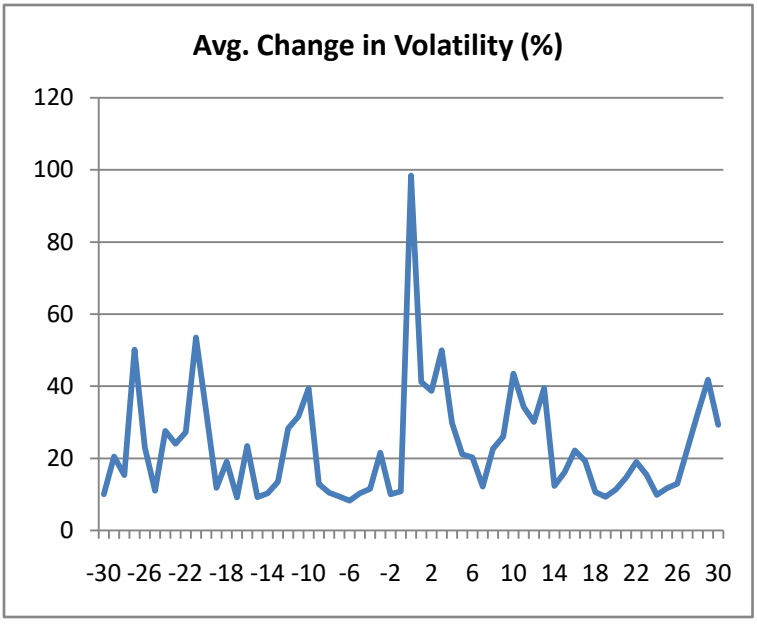


Table-2: Average Change in Volatility and t-test Before and After 5 days of Announcement

Day	Avg Change in Volatility (%)	t-test
-5	10.26	0.23
-4	11.48	1.21
-3	21.57	1.87*
-2	9.97	1.35
-1	10.75	2.24**
0	98.36	2.76***
1	41.17	1.98**
2	38.65	1.34
3	49.91	1.12
4	29.74	0.86
5	21.09	0.27
*Significant at 10% **Significant at 5% ***Significant at 1%		

As far as statistical significance of change in volatility is concerned, it is statistically significant at least at 10% level of significance for 38 days, which includes 12 days after the event. The average change in volatility is statistically significant at 5% level of significance for 29 days and it is statistically significant at 1% level of significance for 9 days. The data for average change in volatility and t-test is given in Table-2 for -5 and +5 days around the event.

Another indicator used for studying the impact was change in volume. The average change in volume around the announcement date is given in Figure-4. The average change in volume was highest around the date of announcement, as can be seen from the figure.

Figure-4: Average Change in Volume Around Announcement Date

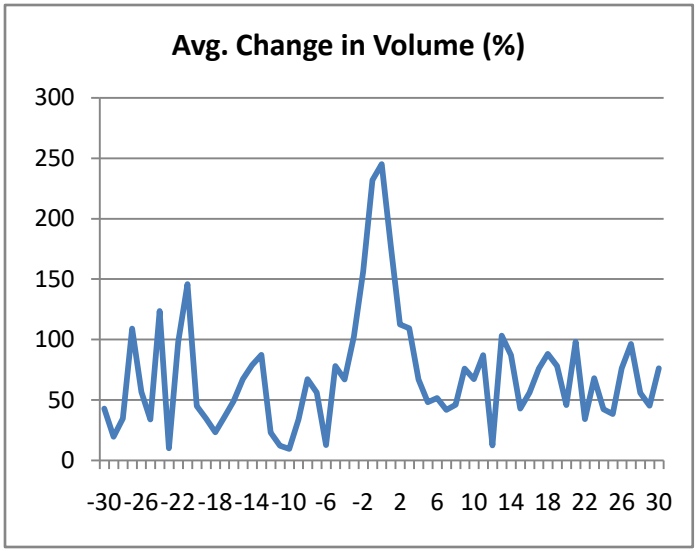


Table-3: Average Change in Volume and t-test Before and After 5 days of Announcement

Day	Avg Change in Volume (%)	t-test
-5	78.3	1.20
-4	67.09	0.67
-3	102.62	2.76***
-2	156.33	2.12**
-1	231.87	1.99**
0	245.23	2.07**
1	178.46	1.87*
2	112.76	1.45
3	109.38	0.76
4	67.1	1.23
5	48.23	0.26
*Significant at 10% **Significant at 5% ***Significant at 1%		

As far as the statistical significance of average change in volume is concerned, it was statistically significant at least at 10% level of significance for 20 days during the window period which include 5 days after the event. The average change in volume is statistically significant at 5% level of significance for 17 days and it is statistically significant at 1% level of significance for 3 days. The data for average change in volume and t-test is given in Table-3 for -5 and +5 days around the event.

Impact of Share Split Around Execution Date

The impact of share split has also been tested around execution date for impact on returns, impact on volatility and impact on volume for 30 days before and 30 days after the execution date. Statistical significance of these impacts has also been tested by using two tailed t-test for 30 days before and 30 days after the execution date.

Figure-5: Average Abnormal Returns Around Execution Date

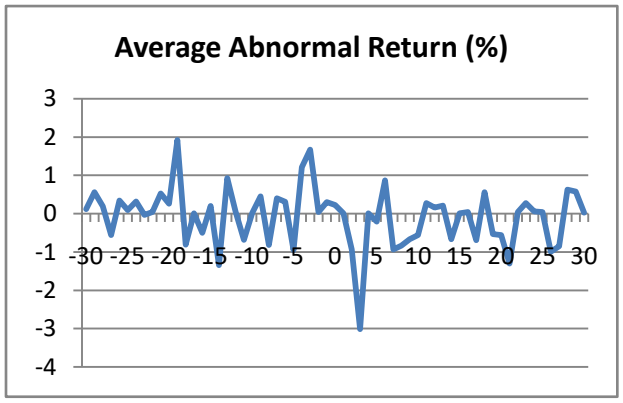


Figure-6: CAAR Around Execution Date

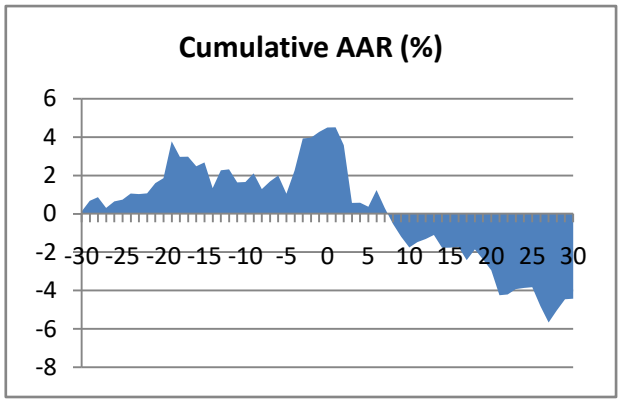


Figure-5 shows the AAR for 30 days before and 30 days after the execution date. The CAAR has also been shown in Figure-6. The data related to AAR, CAAR and values of t-test has been shown in Table4. As is clear from Figure-5 that AAR are mainly negative after 1st day of the event. The CAAR are increasing before the event but turn negative after the event.

Table-4: AAR, CAAR and t-test for AAR before and after 5 days of Execution

Day	AAR (%)	t-test	CAAR (%)
-5	-0.95	1.29	1.05
-4	1.21	1.91*	2.26
-3	1.67	1.85*	3.93
-2	0.04	.092	3.97
-1	0.3	1.12	4.27
0	0.23	.62	4.5
1	0.01	1.81	4.51
2	-0.93	1.99**	3.58
3	-3.01	2.01**	0.57
4	0.02	1.09	0.58
5	-0.21	1.73*	0.37
*Significant at 10%, **Significant at 5%, ***Significant at 1%			

As far as the statistical significance of AAR are concerned, the values of t-test has been calculated and the values of t-test are significant with at least 10% level of significance for 12 days in total during the window period, which includes eight days after the event. As is clear from Table-1 which shows the data for 5 days before and 5 days after the event, the AAR are significant at 5% level of significance for day 2 and 3 and are significant at 10% level of significance on day -4,-3 and on day 5.

Figure-7: Average Change in Volatility Around Execution Date

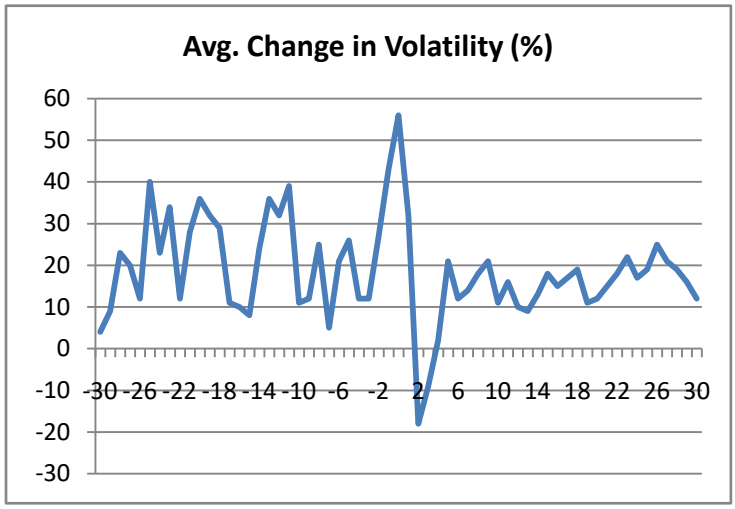


Table-5: Average Change in Volatility and t-test Before and After 5 days of Execution

Day	Avg Change in Volatility (%)	t-test
-5	26	1.83*
-4	12	.822
-3	12	.762
-2	27	1.84*
-1	43	1.98**
0	56	1.87*
1	32	1.72*
2	-18	2.023**
3	-9	.871
4	2	.021
5	21	1.70*
*Significant at 10% **Significant at 5% ***Significant at 1%		

Average change in volatility around execution date has been summarized in Figure-7 for a window period of 61 days. As is clear from the figure the volatility is highest near the event day, where it touches 56%. The figure indicates volatile nature of the share before and after the event.

As far as statistical significance of change in volatility is concerned, it is statistically significant at least at 10% level of significance for 31 days, which includes 14 days after the event. The average change in volatility is statistically significant at 5% level of significance for 14 days and it is statistically significant at 1% level of significance for 1 day. The data for average change in volatility and t-test is given in Table-5 for -5 and +5 days around the event.

Another indicator used for studying the impact was change in volume. The average change in volume around the execution date is given in Figure-8. The average change in volume was highest around the date of execution, as can be seen from the figure.

Figure-8: Average Change in Volume Around Execution Date

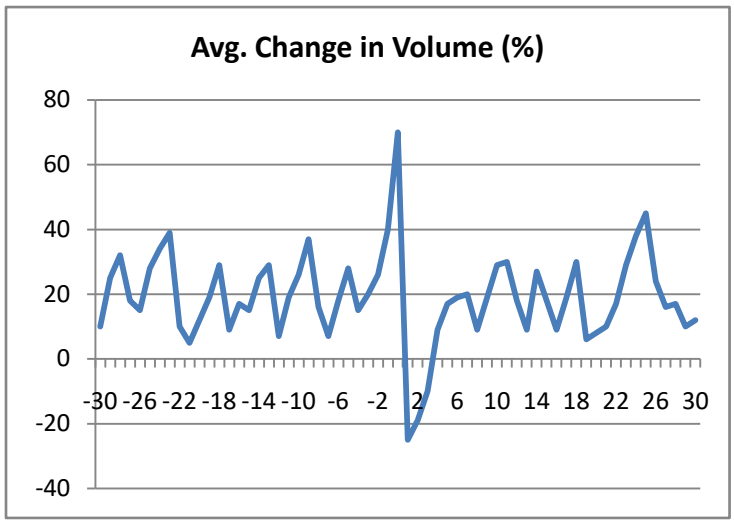


Table-6: Average Change in Volume and t-test Before and After 5 days of Execution

Day	Avg Change in Volume (%)	t-test
-5	28	1.67*
-4	15	1.20
-3	20	1.78*
-2	26	1.72*
-1	40	1.97**
0	70	2.01**
1	-25	1.87*
2	-19	1.53
3	-10	.092
4	9	.024
5	17	1.65*
*Significant at 10% **Significant at 5% ***Significant at 1%		

As far as the statistical significance of average change in volume is concerned, it was statistically significant at least at 10% level of significance for 26 days during the window period which include 10 days after the event. The average change in volume is statistically significant at 5% level of significance for 17 days and it is statistically significant at 1% level of significance for 3 days. The data for average change in volume and t-test is given in table 3 for -5 and +5 days around the event.

FINDINGS AND CONCLUSION

The analysis of share split and its impact displays different results around announcement date and around execution date. The result shows that around the announcement date of share split the returns are positive and statistically significant. The volatility and volume are also higher and statistically significant around the announcement date.

Whereas after the announcement date the returns are slightly positive but are not statistically significant. The shares remain volatile after the event and are statistically significant also. As far as volume after the announcement date is concerned it is significant only for 5 days. So we can conclude that the returns, volatility and volume are positive and statistically significant around the announcement date but these variables are less significant after the announcement date.

At the execution date the returns are statistically insignificant. The AAR turns statistically significant and becomes negative after the execution date. The pattern followed by volatility and volume is same as was at the announcement date. There is huge volatility and volume around execution date, which is statistically significant also. The volatility and volume decreases after the date of execution of share split.

The analysis suggest that the announcement of a share split often leads to increased investor interest and positive abnormal returns in the short term, suggesting that the market perceives this corporate action as positive news. Whereas once the news of share split is announced the impact disappears around execution date. In addition, the increase in the volume at both announcement and execution dates provides supportive evidence for the liquidity hypothesis of share splits.

The results of this study support the established theories that share splits send positive signals to the market and improve share liquidity, aligning with previous empirical research. Essentially, the findings suggest that share splits are not just a cosmetic change, but they do have a noticeable impact on market perception and trading dynamics.

The newly presented evidence suggests that share splits are not efficiently priced in the market, contradicting the semi-strong form of market efficiency. This means that the market, while incorporating all publicly available information, does not fully reflect the implications of share splits, potentially creating opportunities for investors to profit.

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