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Do stock splits matter for returns, volatility, and liquidity? New Evidence from Borsa Istanbul



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ABSTRACT

The purpose of this study is to investigate the impact of stock splits on the return, riskiness, and liquidity of stocks. Utilizing a sample of 94 stock splits taken place between 2010 and 2019 at Borsa Istanbul, the study analyzes the daily abnormal returns, change in volatility, and changes in volume around the stock split announcement and execution dates. The results display significant positive abnormal returns around the announcement date but not significant abnormal returns around the execution. The volatility and liquidity of stocks increase significantly around both announcement and execution dates. The findings are in line with the positive signaling, and liquidity hypotheses of stock split and with most of the observations reported in the empirical literature. The new evidence provided points out the lack of semi-strong form of market efficiency at Borsa Istanbul as far as the stock splits are considered.

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Introduction

The behavior of asset prices after stock splits has attracted the interest of many researchers and extensive literature emerged that approaches the subject from both theoretical and empirical aspects. However, the issue remains to be a puzzling phenomenon where theory and practice contradict in some cases. The theory predicts no change in share prices, as stock splits are nothing but a “cosmetic” change creating no tangible benefit for shareholders and no change in firm value. On the other hand, some of the empirical studies have reported abnormal returns around stock splits.

The question of whether and/or why we observe abnormal returns with stock splits is a puzzle that remains unsolved. A stock split is simply an accounting change and it does not affect firm value. In other words, it does not change the size of the “pie” but it is “slicing the pie” into smaller and smaller pieces. However, for a couple of reasons that will be explained below, they are considered as a positive change by investors and followed by positive returns.

Several hypotheses are attempting to explain why stock splits leads to a perception of positive change in the eyes of the investors despite creating no value for the firm. The first category hypothesizes that stock splits reduce information asymmetry between shareholders and managers and make investors learn information about fundamentals. The second category of hypotheses explains the phenomenon with increased liquidity associated with stock splits.

According to the “Positive Signaling Hypothesis”, managers use stock splits as a signal of future positive performance. Investors take stock splits as an indication of executives’ possession of private information about firms’ future value and will purchase stocks and thus cause a rise in stock prices. “Optimal Trading Range Hypothesis” states that investors prefer to purchase stocks that trade

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within a certain price range with the idea that more shares are better than fewer although they have the same value. Moreover, thanks to lower share prices, smaller investors can hold shares. Therefore, stock splits lead to more liquidity. Similarly, the “Catering Hypothesis” asserts that managers split their stock to supply low-priced shares when investors perceive such shares as more valuable. According to the “Relative Tick Size Hypothesis”, splits are intended to move tick size to desired levels.

Alternatively, the “Neglected Firm Hypothesis” takes stock split as a tool that firms use to attract attention to their stock. The idea is that if there is little known about a particular firm, its shares will be traded at a discount leading the firm to use stock split as a way to increase liquidity and attract more shares that will ultimately increase share prices. Another idea is the “Retained Earnings Hypothesis” which claims that although retained earnings per share will decline with a stock split, managers of the firm are confident that earnings will increase in the future and retained earnings will be replenished.

The ultimate purpose of this study is to investigate the impact of stock splits on return, riskiness, and liquidity. Based upon the existing hypotheses explaining the phenomenon, the study questions the availability of the impact of stock splits on the return, risk, and liquidity behavior of stocks quoted at Borsa Istanbul. The study takes a sample of 94 stock splits taken place between 2010 and 2019 at Borsa Istanbul, employs the daily abnormal returns, change in volatility, and change in volume around the stock split announcement and execution dates as the proxies for return, risk, and liquidity, respectively. The analysis of the data concludes that there are significant positive abnormal returns around the announcement date but not significant abnormal returns around the execution. A significant increase is observed in the volatility and liquidity of stocks around both announcement and execution dates. The findings are in line with the positive signaling, liquidity, and optimal tick size hypotheses of stock splits and with the general observations reported in the empirical literature. The new evidence provided points to the lack of semi-strong form of market efficiency at Borsa Istanbul as far as the stock splits are considered.

The contribution of this study to the literature is twofold. First, it provides additional evidence from an emerging market stock exchange regarding the existence of a market anomaly. Borsa Istanbul, being one of the important emerging market stock exchanges both in terms of market capitalization and in terms of total volume traded, is a representative candidate for testing the hypothesis on the availability of the impact of stock splits on stock price behavior. The second contribution of the study is that it adds specifically to the literature of market microstructure at Borsa Istanbul by combining the analysis of return, risk, and liquidity behavior for both announcement and execution dates of stock splits in one analysis.

The study is structured as follows. The second part reviews the theoretical and empirical literature on the subject. The third part includes the description of the data and methodology followed by the analysis results. The study concludes after an overall discussion of the analysis results.

Literature Review

Theoretical and Conceptual Background

Starting with the famous article of Fama et al., (1969), there have been numerous studies trying to investigate the existence and underlying reasons for stock splits. The literature on stock splits mainly focuses on two aspects of the phenomenon. While a set of studies focuses on the motivations underlying stock splits, a huge bunch of studies handles the effects of stock splits on different indicators such as stock return, liquidity, and risk. Most of those studies have found positive returns and increases in the trading volume around the dates of announcement and exercise dates of stock splits. In the same manner, while some studies have provided evidence for the positive impact of stock splits on the liquidity of stocks, some have supported the negative impact of stock splits on liquidity through the increased bid-ask spread.

On the theoretical spectrum of the literature, the main hypothesis explaining the motivation for stock splits is the “Positive Signaling Hypothesis”. Managers may prefer to signal the insider information they have about the future performance of companies through financial decisions such as stock splits (Ross (1977), Leland and Pyle (1977)). Investors take stock splits as an indication of executives’ possession of private information about firms’ future value and will purchase stocks and thus cause a rise in stock prices. Introduced firstly by Fama, Fisher, Jensen, and Roll (1969), this hypothesis has been supported by a remarkable amount of empirical research (Grinblatt, et.al. (1984); Brennan and Copeland (1988); Asquith, et.al. (1989); Brennan and Hughes (1991)).

The optimal trading range hypothesis explains the motivation underlying stock splits as an attempt to reduce the price of a stock so that it becomes preferable by the investors. Investors prefer to purchase stocks that trade within a certain price range with the idea that more shares are better than fewer although they have the same value. Moreover, thanks to lower share prices, smaller investors can hold shares. Therefore, stock splits lead to more liquidity. This hypothesis is supported by some empirical work such as Baker and Gallagher (1980), Baker and Powell (1993), Lakonishok and Lev (1987), and McNichols and Dravid (1990).

Combining “Optimal Trading Range Hypothesis” and “Positive Signaling Hypothesis”, Ikenberry et al. (1996) offer a “Self-selection Hypothesis” explaining that managers want to realign their stock prices to an optimal level that they believe will increase liquidity and they also believe that stock price will not otherwise decline to the optimal level so they prefer to issue splits. In other words, managers “self-select” to split when they are optimistic about the firm’s future performance.

Another version of the optimal trading hypothesis is the “Optimal tick-size hypothesis” arguing that the companies, through stock splits, can change the tick sizes and increase the number of liquidity providers by attaining the optimal tick size for their shares. Studies providing evidence for this hypothesis are to Angel (1997) and Schultz (2000).

According to the liquidity hypothesis, firms split their shares to increase their liquidity. There are many empirical studies in the literature to test the impact of stock splits on the liquidity of shares. The results of those studies vary mainly due to the methodology used in measuring liquidity. While some studies show that both the trading volume and investor base of the stocks increase after stock splits, others conclude that the liquidity decreases after stock splits due to increased bid-ask spread and transaction cost (Copeland (1979); Lamoureux and Poon (1987); Kryzanowski and Zhang (1996)).

Arbel and Swanson (1993) developed the “Ignored Firm Hypothesis” suggesting that the underlying reason for the stock splits is to pull the attention and interest of the investors in the company’s shares. If the investors ignore the shares of a firm, the shares will be usually traded below their fair value. Stock splits put the shares of a company into the spotlight and increase their visibility thereby making the investors learn more about the firm. Ford, et.al. (2012) have supported those results with more updated data by finding a negative relationship between the number of times the shares of a firm are included within analysis reports and the abnormal returns after stock splits.

Besides the theoretical and empirical studies investigating the validity of those hypotheses, numerous studies are focusing on the effect of stock splits on the returns, risks, and liquidity of stocks. Recent studies on emerging markets provide mixed results. While a bunch of studies documents positive abnormal returns associated with stock splits, others provide no such evidence. For instance, Rohit et al., (2016) studied stock splits for the Bombay Stock Exchange and reported insignificant abnormal returns around announcement dates of stock splits. On the other hand, Hendra, et al. (2020) showed that there are abnormal returns around exercise dates of stock splits in Indonesia Stock Exchange. Similarly, studying a sample of 75 stock splits between 2003 and 2007 at Warsaw Stock Exchange, Podgorski and Pasierbek (2020) found a positive market reaction to the first split information observed through increases in abnormal returns.

When it comes to the case of Borsa İstanbul, Yildiz (2003) has provided one of the very first examples of stock split analysis for Borsa Istanbul, by referring to their impact on liquidity and testing of the optimal trading range hypothesis for firms with different sizes. The study concluded with a slight decline in liquidity in the post-split period. While a positive effect of stock splits on share prices is found for bigger firms, the testing of the optimal trading ranges hypothesis ended up in insignificant results. Analyzing stock splits between 2012 and 2014, Küçükşille and Mizrahi (2015) found out that it is possible to get cumulative abnormal returns around the announcement date of stock splits. Erol and Aytakin (2018), by specifying the event date as Capital Market Board’s approval of the split, showed the existence of significant positive abnormal returns on the very first day of the stock split. However, the study observed significant negative abnormal returns on the days following the stock splits.

The review of the literature indicates that there is a gap in the literature on the stock splits taking place in emerging markets, specifically at Borsa Istanbul. The existent studies focus on the impact of stock splits on price behavior by mainly considering the availability of abnormal returns. There is a lack of studies that take into consideration the risk and liquidity effects at the same time with returns. In addition, most of the studies consider just one date as the event date. This study intends to fill this gap by analyzing the impact of stock splits not just on the returns but also the volatility and liquidity of the stocks for both dates when the splits are announced and executed.

Research and Methodology

Data and the Sample

The data set used in the study covers a sample of the stock splits taken place at Borsa Istanbul between 2010 and 2019. The sample consists of 94 stock splits with stock splits ratios equal and higher than 1.5. Table 1 provides some descriptive statistics concerning the sample.

Table 1: Summary of the analysis sample: total number of stock splits and split ratios by year

Year	Number of Stock Splits	Split Ratio		
		Minimum	Maximum	Average
2010	16	1.50	25.00	4.21
2011	11	1.50	13.00	2.97
2012	11	1.50	41.00	6.33
2013	11	1.50	5.00	2.67
2014	3	1.50	3.00	2.18
2015	4	2.00	9.89	4.47
2016	9	1.50	22.66	4.98
2017	7	1.50	3.30	2.04
2018	16	1.50	80.00	8.64
2019	6	1.85	5.00	2.90
Aggregate	94	1.50	80.00	4.67

The minimum split ratio used in the selection of the sample is 1.5. On the other hand, the maximum stock splits ratio is 80, which is executed in 2018. The average split ratio of the sample is found to be 4.67. The daily-adjusted closing price, daily minimum and maximum prices, and daily volume data of the stocks in the sample are downloaded from Yahoo Finance. Information regarding stock splits are taken from the website of İş Yatırım and announcement dates of stock splits are compiled from the website of Public Disclosure Platform.

Event Study Approach

An event study approach is pursued to analyze the impact of stock splits on the behavior of stock prices. Two important dates considering the analysis are the announcement date and execution dates of the stock split. The announcement date is the date on which a company declares its decision for the stock split. If the announcement of the stock split is made at the first session of trading, the announcement date is regarded as the same day of the declaration. If the announcement is made at the second session of the trading, the announcement date is regarded as the day following the declaration. The execution date is the day on which the company implements stock split after taking necessary permission from the Capital Market Board of Turkey.

To investigate the impact of stock splits on the price behavior of the selected sample stocks, three measures are calculated, namely the daily average abnormal return (AAR), the daily average change in volatility, the daily average change in trade volume. The calculations are made for -30 and +30 days around the announcement and execution dates, respectively.

Daily return on a specific stock i for a specific day t is calculated as;

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

Abnormal return for a specific stock i at a specific day t is calculated using the following formula;

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

Where R_M is the daily percentage change in the BIST 100 Index.

On the other hand, the daily average abnormal return at a specific day t for 94 stock used in the sample is found as;

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

Where n is equal to the sample size of 94.

The AAR_t is, then subjected to the hypothesis testing process using a two-tailed t-test to figure out whether it is significantly different from zero via the test statistic of;

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

Based upon the average abnormal return, cumulative average abnormal return is calculated to analyze the cumulative trend in abnormal returns around stock split announcement and execution dates.

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

The impact of stock splits on the risk is measured by referring to the volatility in the stock price. Volatility in the price of a specific stock i at a specific day t is measured using the daily price range as a percentage of weighted average price during the day.

$$Volatility_{it} = \frac{P_{itmax} - P_{itmin}}{WAP_{it}} * 100$$

Percentage change in volatility of a specific stock i at a specific day t is found as;

$$Change\ in\ Volatility_{it} = \left(\frac{Volatility_{it}}{Volatility_{it-1}} - 1 \right) * 100$$

Finally, the average change in volatility for all stocks at a specific day t is calculated as;

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

The average change in volatility for a specific day t is tested to figure out whether it is significantly different from zero by the test statistic of;

$$t_{ACV_t} = \frac{ACV_t}{\frac{s_{ACV_t}}{\sqrt{n}}}$$

Finally, the impact of stock splits on liquidity is measured through the change in trading volume. Volume is measured as the Turkish Lira amount of total trade taken place during a day for a specific stock. Accordingly, the percentage change in volume for a specific stock *i* at a specific day *t* is calculated as;

$$Change\ in\ Volume_{it} = \left(\frac{Volume_{it}}{Volume_{it-1}} - 1 \right) * 100$$

Based upon the percentage change in daily volume, the average change in volume at a specific day *t* is found as;

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

In the same manner, as other measures used in the study, the daily average change in volume is also tested using the following test statistic;

$$t_{ACV_t} = \frac{ACVol_t}{\frac{s_{ACVol_t}}{\sqrt{n}}}$$

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.

The following part includes the results of the analysis about the impact of stock splits on the behavior of stock prices.

Analysis

The effect of stock splits around the announcement date

The effect of stock splits around the announcement date is analyzed based upon three main criteria, namely whether there is an average abnormal return and positive average cumulative abnormal return concerning the market return, whether there is a significant change in price volatility, and trade volume.

As far as all stock splits in the sample are considered, Figure 1 displays the daily average abnormal returns (DAAR) and average CAR in the -30 days and +30 days before and after the announcement dates. It is observed that the amount of abnormal return increases around the announcement date reaching its highest level of 4.85% at the announcement day once the stock splits decision becomes publicly available. In addition, the average CAR increases by its highest amount on the announcement day.

Within these 61 days including the announcement date, average abnormal returns that are significantly different from zero with at least a 10% level of significance are observed for just 11 days in total. There are just 5 days for which the abnormal returns are significant at 5% and three of those days are within the one-day range of the announcement date.

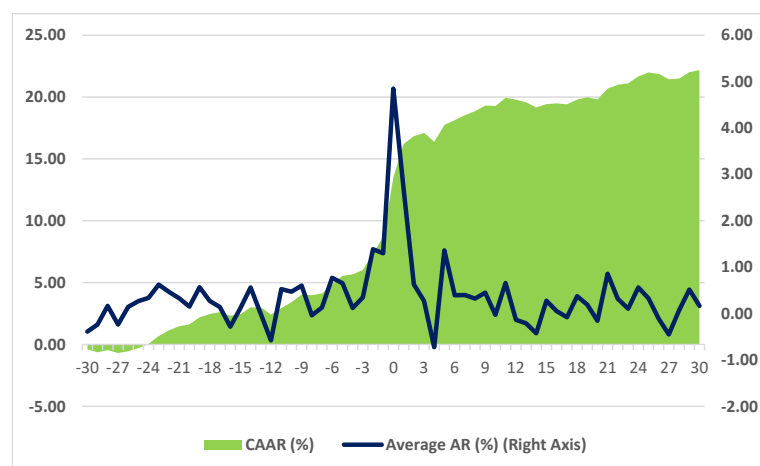


Figure 1: Average abnormal return (AAR) and cumulative average abnormal return (CAAR) around the stock split announcement date (-30 days; +30 days) (%)

Table 2: t-test for average abnormal return (AAR) and cumulative average abnormal return (CAAR) around the stock split announcement date (-5 days; +5 days)

Days	Av. AR	t-test	ACAR
-5	0.65	2.15**	5.54
-4	0.12	0.38	5.66
-3	0.35	1.24	6.01
-2	1.38	0.98	7.39
-1	1.30	3.56***	8.69
0	4.85	5.92***	13.54
1	2.78	3.50***	16.21
2	0.66	0.94	16.83
3	0.28	0.51	17.10
4	-0.77	-1.24	16.38
5	1.44	1.48	17.74

* Significant at 10% ** significant at 5% *** significant at 1%

Table 1 shows the average abnormal returns and the t-test statistics for -5 and +5 days around the announcement date. At the announcement date, the average abnormal return is 4.85% and this number is found to be significant at 1%. The size of average abnormal returns closes to zero after the first day following the announcement date.

Figure 2 summarizes the daily average change in stock price volatility in the -30 days and +30 days before and after the announcement dates. As in the case of abnormal returns, the daily average change in volatility reaches its highest ratio at the announcement date. In fact, out of 61 days considered in the analysis, for 43 days the daily average change in stock price volatility is turned out to be significantly different from zero at the 10% level. The daily average change in volatility is significantly different from zero at 5% level for 30 days and 1% level for 13 days.

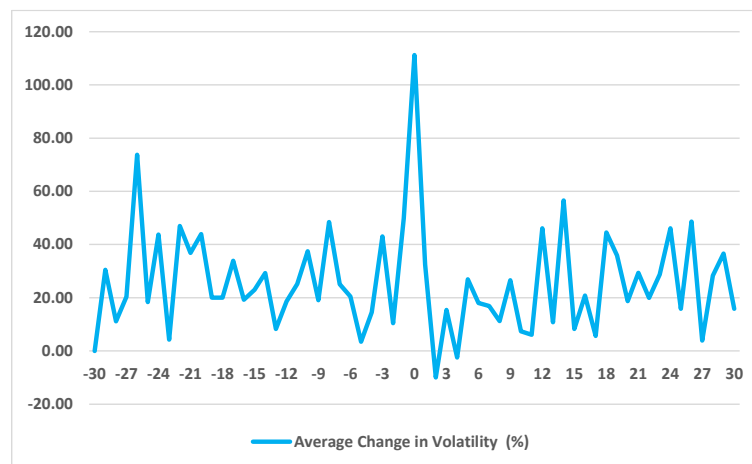


Figure 2: Average change in stock price volatility around the stock split announcement date (-30 days; +30 days) (%)

Table 3: t-test for the average change in stock price volatility around the stock split announcement date (-5 days; +5 days)

Days	Av. Change in Volatility around the Announcement Date (%)	t-test
-5	3.45	0.46
-4	14.54	1.86*
-3	43.06	3.59***
-2	10.46	1.03
-1	49.86	4.16***
0	111.17	5.16***
1	32.49	1.79*
2	-9.94	-1.94*
3	15.39	1.73*
4	-2.48	-0.44
5	26.88	2.07**

* Significant at 10% ** significant at 5% *** significant at 1%

As per the daily average change in stock price volatility around -5 and +5 days around the announcement date, Table 2 indicates that at the announcement date, the average change in stock price volatility for 93 stock splits is 111.17% as respect to the previous day and this is significantly different from zero at 1% level. After the announcement date, the change in volatility decreases but remains significant at the 10% level.

Another indicator considered to analyze the impact of stock splits on price behavior is the daily average change in the total volume of trade. For 93 stock splits in the sample, on average, volume increased significantly at the date of the stock splits announcement.

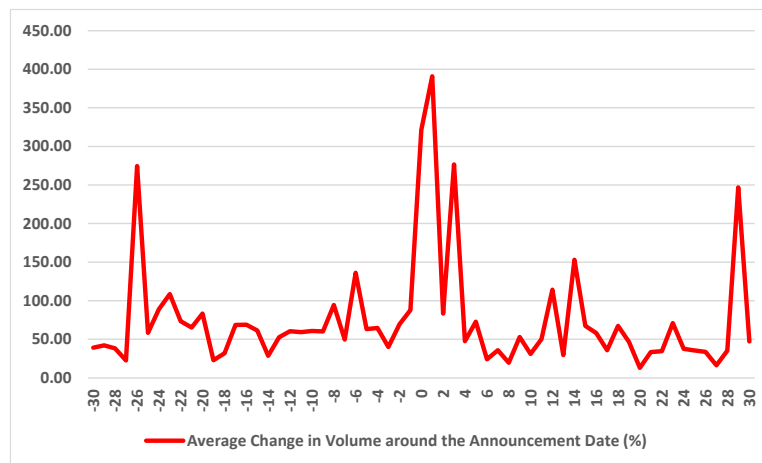


Figure 3: Average change in volume around the stock split announcement date (-30 days; +30 days) (%)

Table 4: t-test for the average change in volume around the stock split announcement date (-5 days; +5 days)

Days	Av. Change in Volume around the Announcement Date (%)	t-test
-5	64.53	2.33**
-4	68.29	2.60**
-3	41.39	2.78***
-2	70.88	2.08**
-1	91.88	3.84***
0	324.80	3.96***
1	395.12	2.99***
2	88.07	1.56
3	279.65	1.59
4	48.55	0.97
5	73.70	1.47

* Significant at 10% ** significant at 5% *** significant at 1%

As displayed in Table 3, the daily average change in volume starts to increase before the announcement date. All of the increases 5 days ahead of the announcement date are significantly different from zero at least at 5% level. The average change in the volume reaches its peak points at the announcement date and on the day following. Starting from the second day after the announcement, average changes in the volume become insignificant.

The effect of stock splits around the execution date

Another date that is important for analyzing the impact of stock splits on the behavior of stock prices is the execution date. For the availability of abnormal returns around the execution date, Figure 4 displays the daily average abnormal return and cumulative average abnormal return (CAAR) around -30 and +30 days of the execution date of the stock splits.

The average abnormal returns follow a volatile pattern before and after the execution date. Out of 30 days before the execution date, in 3 days, there is a positive average abnormal return that is significant at 5%. Close to the execution date, the average abnormal return turns to be negative as with CAAR. On the third day after the execution date, the CAAR becomes negative. In fact, after the execution date, there are 9 days for which there are significant average abnormal returns. In 8 of those nine days, the average abnormal return is negative.

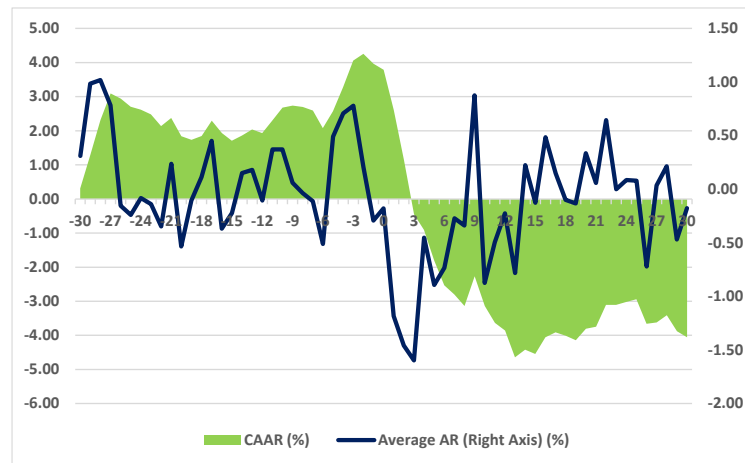


Figure 4: Average abnormal return and cumulative average abnormal return around the stock split execution date (-30 days; +30 days) (%)

When the -5 and +5 days around the execution date are considered, as displayed in Table 4, starting from the first day before the execution, the daily average abnormal return turns to be negative although being not significantly different from zero. On the other hand, in 4 of the 5 days following the execution, the average daily abnormal returns are significantly negative indicating the selling trend in the stocks after the execution of the split.

Table 5: t-test for average abnormal return and cumulative average abnormal return around the stock split execution date (-5 days; +5 days) (%)

Days	Av. AR	t-test	ACAR
-5	0.49	1.32	2.57
-4	0.71	1.68*	3.28
-3	0.78	1.27	4.05
-2	0.20	0.39	4.26
-1	-0.29	-0.57	3.97
0	-0.18	-0.31	3.79
1	-1.18	-2.62***	2.60
2	-1.46	-3.74***	1.14
3	-1.60	-3.77***	-0.45
4	-0.45	-1.17	-0.90
5	-0.89	-1.98**	-1.80

* Significant at 10% ** significant at 5% *** significant at 1%

The behavior of daily average change in stock price volatility between -30 and +30 days around the execution date is displayed in Figure 5. For this period, 33 and 14 positive changes in daily average volatility are significantly different from zero at 5% and 1% respectively. There is just one significant decrease in the daily average volatility on the very first day after the execution date.

As far as the -5 and +5 days around the execution date are considered, towards the execution date the average daily volatility starts to increase before the execution date and reaches its highest point. At the date of execution, the average change in volatility reaches its highest point of 90%. After the execution date, on the very first day, the average volatility decreases significantly and becomes insignificant at 5% level afterward.

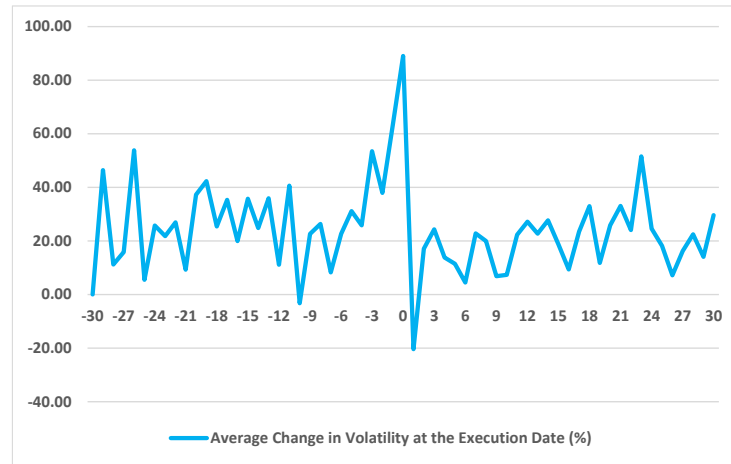


Figure 5: Average change in stock price volatility around the stock split execution date (-30 days; +30 days) (%)

Table 6: t-test for the average change in stock price volatility around the stock split execution date (-5 days; +5 days)

Days	Av. Change in Volatility around the Execution Date (%)	t-test
-5	41.30	2.60**
-4	25.78	2.54**
-3	54.11	3.04***
-2	38.84	3.05***
-1	62.75	2.17**
0	90.16	5.58***
1	-21.18	-3.81***
2	17.88	2.03**
3	24.45	1.93*
4	17.52	1.46
5	11.35	1.72*

* Significant at 10% ** significant at 5% *** significant at 1%

Finally, the analysis of the daily average change in volume shows that the pattern is similar to that of the daily average change in volatility. Figure 6 displays that the daily average change in volatility has been always positive during the -30 and +30 days before and after the execution date. However, only for 36 days, this increase is significant at 5% level of significance. For 19 days before and for 17 days after the execution date, the daily average change in volatility is significantly different from zero.

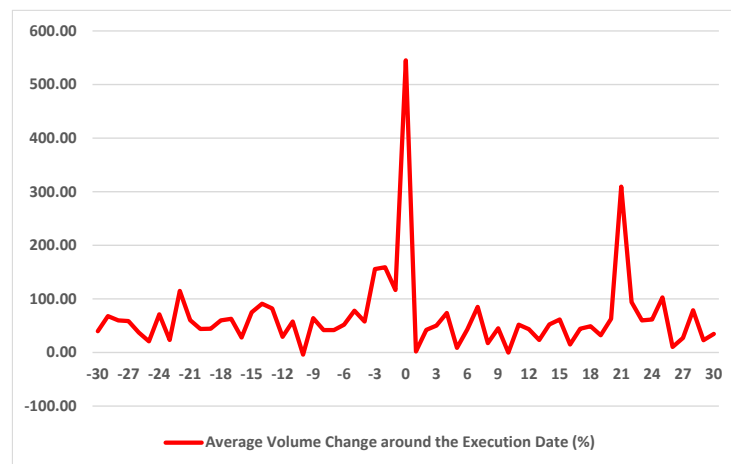


Figure 6: Average change in volume around the stock split execution date (-30 days; +30 days) (%)

Table 7: t-test for the average change in volume around the stock split execution date (-5 days; +5 days)

Days	Av. Change in Volume around the Execution Date (%)	t-test
-5	80.70	2.55**
-4	58.60	2.32**
-3	157.31	2.61**
-2	158.88	2.56**
-1	116.63	1.70*
0	550.98	1.90*
1	1.81	0.13
2	42.78	2.51**
3	51.29	3.08***
4	74.57	1.08
5	9.02	1.13

* significant at 10% ** significant at 5% *** significant at 1%

The daily average change in volume is 550% at the day of execution and this number is significantly different from zero. As in the case of the daily average change in volatility, the average increase in the volume calms down and becomes insignificantly different from zero on the fourth day after the execution.

Discussion

The analysis of the stock splits and their impact on those statistical measures of stock prices displays that there is a difference regarding the nature of the relationship depending on the announcement and execution dates of the stock splits. Figure 7 summarizes the analysis results for announcement and execution dates of stock splits.

Table 8: Summary of the Analysis Results

	Announcement Date	Execution Date
Daily Average Abnormal Return	Significant and positive around the announcement date Insignificant starting from the second day after the announcement	Not significant at the execution Significant and negative after the execution date
Daily Average Change in Stock Price Volatility	Significant and positive around the announcement date Insignificant afterwards	Significant and positive before and at the execution date Significant and negative at the second day after the execution
Daily Average Change in Volume	Significant and positive around the announcement date Insignificant starting at the second day after the announcement	Significant and positive before and at the execution date Insignificant at the second day after the execution

As per the date at which the firms announce their stock splits decisions, the analysis shows positive and significant daily average abnormal return, the average change in stock price volatility, and volume. Those variables become either insignificant or smaller after the announcement date.

On the other hand, the study points out that the daily average abnormal return is insignificant and not different from zero at the date when the stock split is implemented by the firms. Interestingly, the abnormal return turns to be significant and negative on the very first day after the execution. The daily average change in stock price volatility and volume follows a pattern before and at the execution date that is similar to that before and at the announcement date. There is a significant and positive change in both stock price volatility and volume before and at the execution date. The values of those variables become either lower or insignificant afterward.

The results of the study are in line with the propositions of the positive signaling hypothesis seeing the fact that the announcement of stock splits attracts the investors leading to abnormal returns. On the other hand, once the effect of stock splits on stock prices is reflected at the announcement date, this impact disappears at the execution date. In addition, the increase in the volume at both announcement and execution dates provides supportive evidence for the liquidity hypothesis of stock splits.

To conclude, the study points out the fact that stock splits do matter in the case of Borsa Istanbul especially at the date when the stock split is announced. This indicates the lack of semi-strong form efficiency in Borsa Istanbul seeing the abnormal returns and significant movements in stock price volatility and volume at the date of the announcement.

Conclusion

This study analyzes the effect of stock splits on the return, risk, and liquidity behavior of stocks. After a review of the literature on the hypothesis explaining the underlying motivations for firms to split their stocks and some empirical studies, the paper includes an event study of the Borsa Istanbul case. The study employs daily data concerning a sample of 94 stock splits taken place between 2010 and 2019. Three variables are taken into consideration to figure out the impact of stock splits on stock price behavior. Namely, daily average abnormal returns, daily average changes in volatility and volume are used to represent the return, risk, and liquidity, respectively. Two events considered for the sake of analysis are the stock split announcement and execution dates.

The analysis results find that stock splits lead to significant positive average abnormal returns, significant and positive changes in the average risks and liquidity at the date of the announcement. This impact disappears in the following days. On the other hand, the study provides evidence on insignificant abnormal returns, but still positive and significant changes in volatility and liquidity for the day when the stock split is executed. A correction seems to take place after the execution concerning the prices.

The findings are in line with the positive signaling and liquidity hypotheses of stock splits and with most of the observations reported in the empirical literature. The new evidence provided points out the lack of semi-strong form of market efficiency at Borsa Istanbul as far as the stock splits are considered.

Several limitations of this study create implications for further research. First, it just focuses on the availability of any impact of stock splits on returns, risk, and liquidity. However, it does not say anything about the reasons underlying that impact. Further models can be constructed to scrutinize the factors leading to the results found in this study. Second, the study uses a sample of 94 stock splits. This sample can be enlarged by changing the split ratio criteria used. Third, the number of proxy variables employed to measure the return, risk, and liquidity can be increased by using proxies with different calculation methods.

Although there are numerous studies on the subject of stock splits, the question of why such a “cosmetic” change creates such “magic” results is still a to-be-answered phenomenon. This question will always be there as an area to test the main arguments of efficient market hypothesis.

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