MARKET REACTION AROUND STOCK SPLIT ANNOUNCEMENT AND EXECUTION: EVIDENCE FROM INDIA

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ABSTRACT

Puzzling evidence is found regarding impact of stock split announcement and execution for generating positive abnormal return in Indian and foreign countries. This paper examines the study of 150 stocks considered for a time period of 2003 to 2013 to study stock market reaction pertaining to stock split announcement and execution. The research indicates positive abnormal return pre, on the day of announcement and post announcement period and thus confirms signalling and neglected firm hypothesis. However, it discards optimal tick size and liquidity hypothesis as there is no positive abnormal return is found on the day of execution and post execution period.

Key Words: *stock splits, abnormal return, event, stock split announcement, stock split execution*

1. Prologue and Extant Literature Review

As per theory stock splits are cosmetic corporate event as they simply increase the number of outstanding shares and decrease the price of each outstanding share. Thus, there should be no significant impact on the value of the firm. However, empirical evidence suggests that market generally reacts favourably to stock splits. The contradiction between theories and real world where former expects no change in firm value consequent to stock splits while later says significant market reaction elicit for this study. Stock splits are considered to be a mystifying event for the investors and market analyst as the reason for this announcement reaction is not fully understood (Asquith, Healey and Palepu, 1989). On the other hand, Wulff Christian (2002) evidenced that stock splits are associated with abnormal return on an around announcement day and execution day and also there is an increase in the variance after execution day. Chakraborty (2012) analysed 234 data set of stock splits for a period of March 1999 to December 2008. The result obtained by the researcher is in line with the previous researchers. The research shows that there is a significant positive abnormal return on the day of split execution. There is an abnormally high negative return for a post split period which wipes out much more than the positive gain during the split execution. Contrary to this Mishra (2007) has documented negative effect on price and return of stocks following splits. The research paper has reported positive effect on volatility and trading volume following the split events. Masse, Hanrahan and Joseph (1997) studied Canadian Stock Market reaction to stock splits, reverse splits and stock dividends. The evidence is consistent to

US findings in terms of positive effect of stock splits and stock dividend on Canadian Stock Market. US evidence shows negative effect of reverse split while Canadian Market shows positive effect of stock split. However, evidence from US and other market says that firms split their shares after a significant increase in earnings and before the announcement of stock splits, market assumes that there is a rise in the temporary earnings of the company and at the announcement of stock split this belief or assumption leads investors to conclude that their expectations about increase in past earnings are permanent (Asquith, Healey and Palepu, 1989). Rozeff and Byun (2003) have examined stock splits of 12, 747 stocks for a period of 1927 to 1996. Based on different sub periods and different tools, their research indicates that buyers and sellers of splitting stocks do not earn any abnormal return. Aduda and Caroline(2010) agreed that there is an increase in the volume of share traded was found surrounding stock split dates when stock splits were announced. They found positive abnormal return of 0.5473 significant at 0.05 level on the day of stock splits and positive cumulative abnormal return was found during the entire event window of 101 days. This is similar to the research reported by Grinblatt (1984) that stock splits realized positive results around the split announcement dates. In a similar path, Brennan and Copeland (1988) proved that managers would go for stock splits only if they are optimistic about consistent rise in the price of the stocks in future. Hemang and Prem (1997) have examined performance of stocks for a period of 1-3 years following 5596 stock splits and 76 reverse splits for a period of 1976 to 1991. For stock splits on an average for 1 and 3 years buy and hold abnormal returns after the announcement month are 7.05 percent and 11.87 percent respectively while for a reverse split, the corresponding returns are -10.76 percent and -33.90 percent. The positive and negative drift in stock split and reverse split respectively suggests that market under reacts to firm specific news.

Efficient Market Hypothesis: It is because as per the Efficient Market Hypothesis (EMH), any event which does not contain any information should not affect price; and a stock split as considered to be a just cosmetic event should not generate any abnormal return close to announcement and/or execution date (Joshipura, 2007). As stock splits do not directly affect a company' cash flows, yet the increase in the stock price on and around surrounding date of execution questions market efficiency and release of new information (Asquith, Healey and Palepu, 1989) which is in contradiction to Joshipura (2007). Further, result of Frank and Eugene (1981) supports semi-strong efficient market hypothesis, because as per their finding it is evident that stock prices adjusted prior to or very shortly after the public announcement of stock splits. Olowe (1998) have used stock splits as an information-generating event for the Nigerian Stock Market and the result shows that the Nigerian Stock Market is inefficient in semi strong form. Ray (2011) tried to study semi-strong form of efficiency in the Indian equity market and concluded that Indian market reacts to the stock splits announcements.

Dividend Hypothesis: This hypothesis is advanced by Fama et al (1969). It states that market interprets stock split announcement as increased probability to get near term dividend. Research by Fama et al (1969) says that 71.5 percent firms of total sample size have shown dividend announcement within a year of the stock split. Thus, as per this hypothesis market reacts to stock split announcement not actually because of stock split, but expected future dividend. Contradiction to Fama et al results, research by Grinblatt et al (1984) shows that only 11 percent of the sample firms considered for the research have given cash dividend in a year of stock-split.

Earning Information Hypothesis: Further research by Fama et al (1976) reveals that information revealed by stock splits is 'earnings' rather than 'dividend'. As per Fama et al and Grinblatt et al (1984) stock splits reveals pre-split earnings and improved future earnings. This is also confirmed by Lakonishok Lev (1987). Empirical evidence by Asquith, Healey and Palepu (1989) confirms that stock split conveys earning information. This research says that if managers can use their greater access to information before stock split, they can prove that stock splits prove permanence of past earnings. Maureen and Ajay (1990) provide empirical evidence that through stock splits and dividend firms signal their private information about their future earnings. As stock split is viewed as one of the signal about increased future earnings of the company, it is also known as signalling hypothesis. Research by Mcnichols and Dravid (1990) says that firms signal their private information about their future earnings by their choice of split factor and because of this reason investors revise their belief about firm value. The findings indicates that price changes at stock dividend and split announcements are significantly correlated with split factors holding other factors and earning forecast constant. Authors find strong statistical association between announcement returns and split factor signals which says that investors' inferences about firm value do corresponds to firms' split factor choices.

Liquidity Hypothesis: Research by Baker and Powell (1993) suggests that the motivation for stock splits for the managers is to move the stock prices in to better trading range, which in turn improves trading liquidity. Further, Lakonishok Lev (1987) empirically proved that stock splits makes the stock in more affordable trading range and thus increases trading activity which results in to positive abnormal return. This is also known as trading range hypothesis. However, empirical findings shown by Copeland (1979) and Conroy, Harris and Benet (1990) proved that trading activity decreases after stock splits. Maureen and Ajay (1990) strongly support the trading range hypothesis. Dash and Gouda (2007) analyzed the overall

impact of stock splits on returns. For that, mean and variances of the period prior to the announcement are compared with the returns after the execution of the split. The results indicated strong evidence for an increase in the liquidity of the stock after the split. Research by Christopher and Percy (1987) concludes that splits results in an increase in number of transactions along with the number of shares traded; which in turn increases the volatility of the share prices. Also liquidity is increased by the split and reduced by the reverse-split; but there is no clear cut evidence that market attaches any value to this change in liquidity.

The optimal Tick Size Hypothesis: Angel (1997) suggested that companies go for the stock splits in order to achieve optimal tick size. It is because larger tick size makes trading costly mainly for small investors. Schultz (2000) confirmed with the tick size hypothesis and concluded that through stock split company's management can influence relative tick size if there is an absolute constant tick size on the exchange. Jennifer (1998) has examined the relation between bid ask spread and variance of ex-stock split return. The research says that there is some evidence that bid-ask spread partially contributes to the increase in return volatility after split. This is also known as market maker hypothesis as stock splits results in to low bid-ask spread and thus in turn market trade more actively.

Neglected Firm Hypothesis: Stock split is considered as a way of raising attention of the market participants and information about stock split is widely recognized by the investors than before. Wulff Christian (2002) has rejected liquidity hypothesis in his analysis but have shown some evidence of neglected firm hypothesis in his empirical work carried out at German stock market.

2. Rationale of the Study

It is required to study the puzzling ex-day behaviour of splits, as it is evident that abnormal ex-day behaviour is due to some price pressure. It is believed that announcement effect reflects market valuation while execution effect reflects clientele shifting. (Lamoureux and Poon (1987). Further, the motive of the managers to go for stock split is not only to bring price to tradable range. The extant literature reviewed earlier has not given any concrete finding for a medium to long term impact of this phenomena. Almost all the researchers such as Fama et al (1976), Grinblatt et al (1984), Lakonishok Lev (1987), Asquith, Healey and Palepu (1989), Mcnichols and Dravid (1990) have proposed that through stock split announcements; firms give signal or information about their future earnings and therefore provide significant positive abnormal return during this event, while Wulff Christian (2002) hypothesised the neglected firm hypothesis. However, both the hypotheses are neglected when it was carried out in the Indian market (Joshipura, (2007). Therefore, it is essential to examine this phenomena in the Indian context. In a stock split, no cash outflow/ inflow is involved unlike other corporate event, and as the goal of the firm is to maximize shareholders wealth, it is very much needed to examine this event for an immediate to medium and long term. Further, earlier empirical research has given confusing finding and as majority of them are done in foreign context, it is erroneous to bring any conclusion from them for Indian market.

Objectives of the Study

Objectives to carry out research on market reaction to stock splits are as follows:

1. To identify market reaction to announcement and execution of stock split.
2. To find out whether abnormal return is generated or not on account of stock split.
3. To study and compare which event an announcement or execution generates more abnormal return.

3. Database and Sample Selection

To study the above mentioned objectives the companies that went for the stock split during January 2003 to December 2013 have been considered as a sample framework of constituents of BSE Sensex. It was taken care to include equal number of companies for each year from the given period of 2003 to 2013. In this research, the benchmark index chosen for running the regression for the market model is the BSE Sensex index. The companies for which stock split event is coincided by other major corporate event like cash dividend, bonus, right shares, mergers and acquisitions etc are not considered for the study. The companies which did not fulfil the above mentioned criteria were omitted from total 317 companies and 150 companies were considered for the analysis. Only those companies were considered for which announcement and execution of stock split date was available for the below mentioned window.

1. For execution event, estimation window considered is 280 days before execution and 250 days after the execution. (-280 ED to +250 ED)
2. For announcement effect, 150 days of pre-announcement and 150 days post announcement are considered. (-150AD to +150 AD)

4. Methodology to determine Market Reaction around stock splits

The above mentioned objectives are studied and analyzed by the approach known as 'event study'. It is a standard practice in the areas related to various market events such as dividend, bonus shares, mergers and acquisition and market anomalies. Event study examines market reaction by finding abnormal return criteria.

The paper uses the Market Model Method. The expected rate of return on the security was calculated using the market

model. The model parameters were estimated by regressing daily stock return on the market index over the estimation period. The market model is given by

$$R_i = \hat{a} + \hat{a}R_{mt} + \hat{a}_i \qquad (i)$$

Where R_{mt} is the return on sensex for day t, â measures the sensitivity of the firm to market- this is a measure of risk- and $\hat{a}_i$ is the statistical error term where " $\hat{a}_i$=0.

Thus the predicted return for the firm in the event period is the return given by the market model on that day using these estimates. The market model method is the most widely used method since it takes explicit account of both the risk associated with the market and mean returns.

The market's reaction to the stock split is measured using daily stock return data to compute excess stockholder returns. These excess returns are a measure of the stockholder's actual return minus return generated from market model. The daily excess return for the security is estimated by

$$AR_i = R_i - E(R_i) \qquad (ii)$$

Where t=day relative to an event, AR_i =excess return on the security for the day t, R_i =actual return on the security for day t, $E(R_i)$ =predicted or expected rate of return as per market model on the security for day t.

First, the average abnormal returns (AAR) for each relative day t are calculated across the securities. Daily average cumulative abnormal returns (CAR) are the sum of the average abnormal return over event time.

In the event time, the day on which a stock is split is designated as 0. Trading days prior to the stock split are numbered event days -2,-1 and so on and the post split days are numbered as +1 +2 etc.

The t-statistics is calculated as

$$t = \bar{\varepsilon}t / s\,\hat{\bar{\varepsilon}}t$$

Where $\bar{\varepsilon}_p$ is the average abnormal return of stock involved at day t and s $\hat{\bar{\varepsilon}}t$ is the corresponding standard deviation.

$$\hat{\bar{\varepsilon}}t = \bar{\varepsilon}t = \sum_{i=1}^{nt} \varepsilon\, i\, t$$

Where n_i is the number of stocks involved in the study and $\hat{a}_{it}$ is the average abnormal return of n_i stock from day -280 to + 250 for execution and -150 to +150 for announcement.

Average Abnormal Return (AAR): An average of abnormal returns across the N firms on a day t.

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N}(AR_{i,t})$$

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

$$CAR_{i,t} = \sum_{T1}^{T2}(AR_{i,t})$$

For the present analysis, data are divided in to various windows and selection and estimation of windows to examine a particular market event is always subjective and hence debatable. By taking inputs from earlier studies, it was decided to use following windows

5. Estimation Windows

We have compared a stock's performance in two steady states: one before and one after the execution date of the stock split. The stock-execution day is considered as 0 day. The stock split execution may change the market's perception of a firm. The estimation window taken in the project for the price effect is as follows:

1. Announcement window (-150 to AD; AD and AD to +150): To investigate the neglected firm hypothesis and signaling theory, abnormal return for stock split announcement was studied for a different time period of -150 days before the announcement to till announcement date. If, presence of any significant positive abnormal return during announcement is found, then it indicates leakage of sensitive information or insider information and thus proves the neglected hypothesis proves. For a more clear and thorough view, abnormal return was studied for a time period of 150 days prior to announcement to announcement date; abnormal return on announcement day and post announcement period.
2. Post Execution Window (-280 to ED; ED and ED to +280): As per tradable range and liquidity hypothesis, small investors can participate in the market after stock splits. Thus, in this window; period prior to stock split; on the day of split execution and immediately after split is studied to check presence of abnormal return. If positive abnormal return is found immediately after stock-splits, it indicates trading range hypothesis and market maker hypothesis.

6. Hypothesis Test of stock splits

Based on the above mentioned research methodology, and formation of the windows; below hypothesis were studied.

H_1: There are no excess returns present in the pre announcement period.

H_2: There are no excess returns present on the announcement day.

H_3: There are no excess returns present in the post announcement period.

H_4: There are no excess returns present in the pre execution period.

H_5: There are no excess returns present on execution day.

H_6: There are no excess returns in post execution period.

7. Results and Discussions

Stock Split Announcement

Below table 1, depicts the pre-announcement, announcement and post announcement cumulative abnormal return along with t statistics for a different time framework.

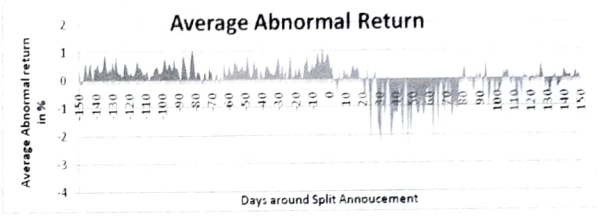
Table 1 Cumulative Abnormal Return of Announcement Windows

Pre Announcement Windows		
Windows	**Cum. Abnormal Return**	**t-statistics**
from -150 to AD	58.01812	1.313496254
from -90 to AD	34.34493	1.173059993
from -60 to AD	26.14241	1.438055824
from -30 to AD	14.98963	1.413223768
from -15 to AD	10.23995	2.370670002
from -10 to AD	7.80629	2.719904469
from -5 to AD	4.649297	2.746697075
from -3 to AD	2.944536	4.273008827
from -1 to AD	**1.751114**	9.919514892
Announcement Windows		
AD (0 day)	**0.8131**	1.2001
Post Announcement Windows		
AD to +1	**1.170613**	1.816539207
AD to +3	1.462662	0.943014274
AD to +5	0.68706	0.21500228
AD to +10	1.373878	0.305401928
AD to +15	2.708044	0.475684856
AD to +30	-3.28402	-0.144109904
AD to +60	-36.3943	-0.659293768
AD to +90	-51.475	-0.663236246
AD to +150	-56.5663	-0.506435845

(Source: Authors' calculation)

From table 1 it can be observed that 150 days prior to announcement; cumulative abnormal return is highest[1] and then it continuously falls and before one day of announcement it is 1.7511. On the day of announcement, it is 0.8131 and in post announcement period it rises till 3 days and then fluctuates up to 15 days. It can be inferred that stocks give positive abnormal return immediately after the stock split announcement.

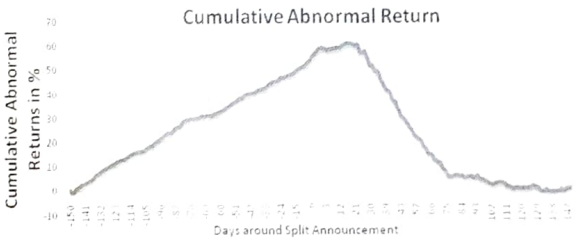
Figure 1: Plot of the average abnormal return for the window of -150 to +150 (Pre and Post Announcement)



(Source: Authors' calculation)

From figure 1 it can be observed that stocks considered for the study shows positive average abnormal return before announcement and on the day of announcement. However, after announcement it shows negative average abnormal return and further it shows positive abnormal return from the day 10 to 20. After 20 days onwards, it further shows reverser trend.

Figure 2: Plot of the cumulative abnormal return for the window of -150 to +150 (Pre and Post Announcement)



(Source: Authors' calculation)

The above figure 2 depicts that stock split announcement results in to significant positive abnormal return immediately after the announcement and then return falls for a medium to long term duration. From the above figures it can be inferred that cumulative abnormal return is significantly positive before and just before the announcement of stock split. This confirms the neglected firm hypothesis and reveals the leakage of split announcement before formal announcement is made. This rejects the hypothesis 1, 2 and 3 and thus proves that there is an excess return in the pre announcement, on the day of announcement and post announcement period. When it was checked by non parametric sign test, total 58 firms out of 150 sample firms considered for the analysis have given negative abnormal return on the day of announcement and remaining 92 firms have shown positive abnormal return on the day of announcement. This result does make it statistically

significance and confirms the presence of positive abnormal return on the day of announcement. This confirms with signalling hypothesis and neglected firm hypothesis discussed in the review of literatures.

Stock Split Execution

Table 2 Pre Execution Windows

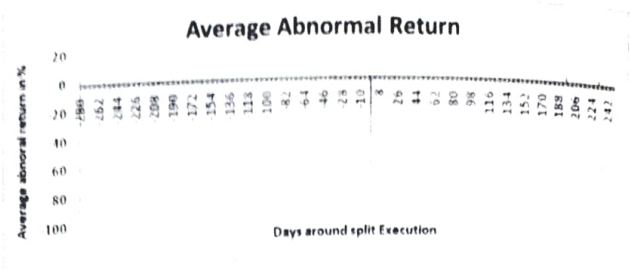
Table 2 describes the pre-execution, execution and post execution cumulative abnormal return along with t statistics for a different time framework.

Pre Execution Windows		
Windows	**Cum. Abnormal Return**	**t-Statistics**
from -280 to + ED	-8.80525	-0.006860753
from -250 to + ED	-13.4467	-0.011086902
from -180 to + ED	-28.6254	-0.027802281
from -90 to + ED	-51.7612	-0.070935236
from -60 to + ED	-59.7	-0.099941369
from -30 to + ED	-67.65	-0.158873966
from -15 to + ED	-70.1669	-0.229055302
from -10 to + ED	-71.311	-0.280453761
from -5 to + ED	-72.9467	-0.387671635
from -3 to + ED	-73.9544	-0.480771808
from -1 to + ED	-75.1759	-0.68889568
Execution Windows		
ED (0 day)	-76.1696	-22.7607
Post Execution Windows		
from ED to +1	-75.341	-0.691888018
from ED to +3	-74.9516	-0.489377135
from ED to +5	-75.4632	-0.403673218
from ED to +10	-77.6974	-0.308114974
from ED to +15	-78.4195	-0.257834373
from ED to +30	-77.5439	-0.182904017
from ED to +60	-76.7401	-0.128953217
from ED to +90	-75.9136	-0.10440643
from ED to +180	-77.5024	-0.075547305

(Source: Authors' calculation)

From the above table 2 it can be interpreted that cumulative abnormal return increases as it approaches the execution date and afterwards it hovers around pre-execution value.

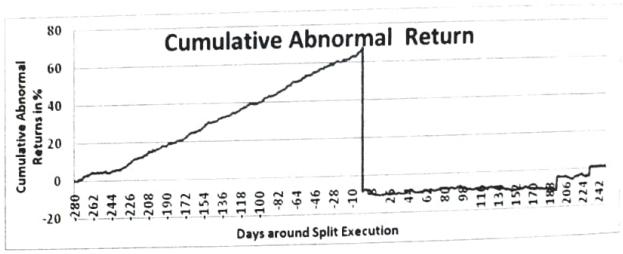
Figure 3: Plot of the average abnormal return for the window of -280 to +250 (Pre and Post Execution)



(Source: Authors' calculation)

From the above figure 3, it can be revealed that average abnormal return hovers around zero and more often negative before and after stock split execution. On the day of the stock split execution, it shows significant negative abnormal return. Near to 200 days of post split execution, it starts showing positive abnormal return, however it cannot be traced to stock split event.

Figure 4: Plot of the cumulative abnormal return for the window of -280 to +250 (Pre and Post Execution)



(Source: Authors' calculation)

From the above figure 4 it can be inferred that cumulative abnormal return falls as the stocks are split as per the specific ratio decided by the firm and afterwards also it remains negative only. From table B in appendix, it can be observed that average abnormal return on the ED+1 is 0.8286 and is statistically significant. 63 firms out of a sample of 150 firms have shown negative abnormal return on first day after the execution of stock split and remaining 87 firms have shown positive abnormal return after one day of stock split. It does not make sense to check abnormal return on the execution day as it is obviously negative as stocks are split in to specific ratio. Also from table B it can be revealed that post stock split, it shows positive abnormal return for immediate three days and afterwards return becomes negative. This discards liquidity and trading range hypothesis.

In the post execution window, it shows positive abnormal return on 17 days after execution and remains positive till 22 days with one reverse trend. Moreover for the entire period considered for the episode i.e. from -280 days to +250 days, few results are found positive with statistically significance. This is contradictory to what explained by market maker hypothesis or optimal tick size hypothesis

which says that stock splits reduces bid-ask spread and leads to positive abnormal return as it brings stock in to affordable range and thus increases demand. Hypothesis 4 is rejected as positive abnormal return is found on the pre execution days. From table B it can be observed that stocks have given positive abnormal return before the long back of execution of stock splits to one day prior to execution. Hypothesis 5 and 6 are accepted as no positive abnormal return is found on the day of execution and post execution (immediate, medium and long term).

8. Conclusion

The research indicates that investors who invests in stocks before announcement for seeking positive abnormal gain are benefitted and shows short run profit which confirms to Ray (2011) and in contradiction to the finding proved by Reilly and Drzycimski (1981). Stock split announcement results in to positive abnormal gain in immediate and long run but negative return in medium term. As the liquidity hypothesis, stocks are split to increase liquidity, however, Stock split execution results in to positive abnormal return before and just one day before the execution and post execution, it shows negative abnormal return for short, medium and long term time framework. Further, no notable rise is observed in the volume of the stock on the day of split and post split. Thus, it discards liquidity hypothesis which is in line with earlier research carried out by Joshipura (2007), Chakraborty (2012) and Mishra (2007), Copeland (1979) and Conroy, Harris and Benet (1990).

From this analysis it can be inferred that though return associated with stock split announcement and execution is positive 0.8131 and 0.993[2] respectively, results are not statistically significant and do not sustain for a long time period. This is in line with the result of Hemang and Prem (1997). Thus, based on the time period considered for the study, it can be inferred that stock splits does not result in to share holders wealth maximization in Indian market. From table A and B in appendix, it can realized that announcement and execution window provides positive abnormal return before the event (both announcement and execution), on the day of announcement and two days post event (both announcement and execution). Thus it also accepts neglected firm hypothesis and partly accepts signalling firm hypothesis which contracts the findings of Joshipura (2007). As per efficient market hypothesis, any information associated with the stock split announcement should be absorbed on the surrounding day of announcement only and should not generate any positive return on the execution day. However, prior to stock split execution and post three days of the execution, positive abnormal return is noted which discards efficient market hypothesis reviewed in the literature. As no consistent positive return is found post event with increased volume of share traded, it also discards the market maker hypothesis.

Separate event based study and windows made for the different time period for stock split announcement and execution for the same stocks leads to conclusion that it does not bring significant positive abnormal return post split.

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APPENDIX

Table A Average abnormal returns and t- statistics of 150 companies for -150 to +150 days of stock split announcement

Days	AAR	t-statistics	Days	AAR	t-statistics	Days	AAR	t-statistics	Days	AAR	t-statistics
-150	0.3507	0.5176	-115	0.7036	1.0384	-80	0.0359	0.0529	-45	0.8316	1.2274
-149	-0.1654	-0.2441	-114	0.4452	0.6570	-79	0.2994	0.4418	-44	0.3434	0.5068
-148	-0.0805	-0.1188	-113	0.4524	0.6676	-78	0.2721	0.4016	-43	0.4961	0.7322
-147	0.4799	0.7083	-112	0.2972	0.4387	-77	0.1549	0.2286	-42	-0.1137	-0.1679
-146	0.6528	0.9634	-111	0.2179	0.3216	-76	-0.2516	-0.3714	-41	0.4073	0.6011
-145	0.1200	0.1771	-110	0.1923	0.2837	-75	0.2569	0.3792	-40	0.1192	0.1759
-144	0.5646	0.8333	-109	0.4343	0.6409	-74	0.2443	0.3606	-39	0.0309	0.0456
-143	0.6039	0.8913	-108	-0.0771	-0.1138	-73	-0.1491	-0.2200	-38	0.4523	0.6676
-142	-0.0459	-0.0678	-107	0.2385	0.3519	-72	0.4821	0.7115	-37	0.4873	0.7192
-141	0.4687	0.6918	-106	0.1231	0.1817	-71	0.2911	0.4297	-36	0.3788	0.5590
-140	0.3838	0.5665	-105	0.3563	0.5259	-70	0.1936	0.2857	-35	0.2065	0.3047
-139	0.7010	1.0345	-104	0.4361	0.6436	-69	-0.2212	-0.3264	-34	0.2018	0.2978
-138	0.2890	0.4265	-103	0.4964	0.7326	-68	0.2009	0.2966	-33	0.1315	0.1940
-137	0.3211	0.4739	-102	0.2693	0.3974	-67	0.2163	0.3193	-32	0.3352	0.4947
-136	0.3840	0.5667	-101	0.2379	0.3512	-66	-0.1982	-0.2925	-31	0.6636	0.9794
-135	0.9943	1.4675	-100	0.3288	0.4852	-65	0.2419	0.3570	-30	0.8006	1.1816
-134	0.6766	0.9986	-99	0.7804	1.1518	-64	-0.1590	-0.2347	-29	0.0564	0.0832
-133	0.2398	0.3540	-98	0.6705	0.9895	-63	0.6888	1.0165	-28	0.7012	1.0348

-132	0.4513	0.6660	**-97**	0.3396	0.5013	**-62**	0.2273	0.3355	**-27**	-0.0248	-0.0366
-131	0.2921	0.4311	**-96**	0.6067	0.8954	**-61**	0.1280	0.1889	**-26**	0.5231	0.7721
-130	0.7771	1.1469	**-95**	0.5203	0.7679	**-60**	0.5631	0.8311	**-25**	-0.1343	-0.1982
-129	0.3073	0.4535	**-94**	0.3396	0.5012	**-59**	0.3208	0.4734	**-24**	0.5849	0.8632
-128	0.9336	1.3778	**-93**	0.8899	1.3133	**-58**	0.1430	0.2110	**-23**	0.8874	1.3097
-127	0.3682	0.5435	**-92**	0.4296	0.6340	**-57**	0.6196	0.9145	**-22**	0.0266	0.0393
-126	0.2193	0.3236	**-91**	0.4354	0.6426	**-56**	0.5860	0.8648	**-21**	0.1187	0.1752
-125	0.2559	0.3777	**-90**	0.2472	0.3648	**-55**	0.5071	0.7484	**-20**	0.4456	0.6576
-124	0.0834	0.1231	**-89**	-0.0596	-0.0879	**-54**	0.2801	0.4134	**-19**	0.1102	0.1626
-123	0.6323	0.9331	**-88**	0.8111	1.1971	**-53**	0.3666	0.5411	**-18**	0.4461	0.6583
-122	0.5843	0.8623	**-87**	0.8283	1.2225	**-52**	0.5407	0.7980	**-17**	0.3381	0.4990
-121	0.3973	0.5863	**-86**	0.5311	0.7838	**-51**	0.2933	0.4328	**-16**	-0.1300	-0.1918
-120	0.1597	0.2357	**-85**	0.1842	0.2718	**-50**	0.3219	0.4751	**-15**	0.4646	0.6856
-119	0.3177	0.4689	**-84**	0.0085	0.0125	**-49**	0.9601	1.4170	**-14**	0.5855	0.8641
-118	0.1602	0.2364	**-83**	0.8095	1.1948	**-48**	0.4597	0.6784	**-13**	0.8462	1.2489
-117	0.1708	0.2521	**-82**	1.0615	1.5666	**-47**	0.0502	0.0741	**-12**	0.2093	0.3088
-116	0.4605	0.6796	**-81**	0.8264	1.2196	**-46**	0.1688	0.2491	**-11**	0.3281	0.4843

Days	**AAR**	**t-statistics**	**Days**	**AAR**	**t-statistics**	**Days**	**AAR**	**t-statistics**	**Days**	**AAR**	**t-statistics**
-10	0.5697	0.8408	**31**	-2.3743	-3.5041	**72**	-0.1246	-0.1839	**113**	0.0460	0.0678
-9	0.3584	0.5290	**32**	0.1073	0.1583	**73**	-1.5875	-2.3429	**114**	-0.2855	-0.4214
-8	0.5209	0.7687	**33**	-1.4420	-2.1281	**74**	-1.1611	-1.7136	**115**	-0.7586	-1.1196
-7	0.9900	1.4611	**34**	-1.0979	-1.6204	**75**	-0.8002	-1.1811	**116**	0.2835	0.4183
-6	0.7181	1.0598	**35**	0.3264	0.4818	**76**	-1.0853	-1.6018	**117**	0.0547	0.0807
-5	0.4710	0.6951	**36**	-0.6978	-1.0299	**77**	-1.1246	-1.6598	**118**	0.0915	0.1351
-4	1.2338	1.8209	**37**	-2.4184	-3.5692	**78**	0.2225	0.3283	**119**	-0.0363	-0.0536
-3	0.5549	0.8190	**38**	-1.5456	-2.2810	**79**	-0.3448	-0.5089	**120**	-0.2082	-0.3073
-2	0.6385	0.9423	**39**	-1.1685	-1.7246	**80**	0.3528	0.5206	**121**	0.0174	0.0257
-1	0.9380	1.3843	**40**	-1.2366	-1.8251	**81**	0.4252	0.6275	**122**	0.0443	0.0654
0	0.8131	1.2001	**41**	-1.2305	-1.8161	**82**	-0.0516	-0.0762	**123**	-0.1350	-0.1993
1	0.3575	0.5276	**42**	-0.2754	-0.4064	**83**	-0.0786	-0.1160	**124**	0.1919	0.2832
2	0.4238	0.6254	**43**	-1.3650	-2.0145	**84**	-0.2252	-0.3323	**125**	-0.0987	-0.1457
3	-0.1317	-0.1944	**44**	-2.1353	-3.1514	**85**	0.1886	0.2783	**126**	0.5795	0.8553
4	-0.0635	-0.0938	**45**	-0.7256	-1.0709	**86**	-0.5755	-0.8493	**127**	0.3859	0.5696
5	-0.7121	-1.0509	**46**	0.0667	0.0984	**87**	-0.2650	-0.3911	**128**	0.0325	0.0480
6	0.3363	0.4963	**47**	-2.8581	-4.2182	**88**	0.3771	0.5566	**129**	-0.4761	-0.7027
7	-0.1150	-0.1698	**48**	-0.8097	-1.1951	**89**	-0.1257	-0.1855	**130**	-0.0978	-0.1444
8	-0.0702	-0.1036	**49**	-2.4459	-3.6098	**90**	0.3109	0.4589	**131**	-0.4468	-0.6594
9	0.4581	0.6761	**50**	-0.4181	-0.6171	**91**	0.0263	0.0388	**132**	-0.5140	-0.7587
10	0.0777	0.1147	**51**	-0.5333	-0.7871	**92**	-0.7882	-1.1633	**133**	-0.0991	-0.1463
11	0.2552	0.3766	**52**	-1.1445	-1.6891	**93**	0.5444	0.8035	**134**	-0.0037	-0.0055
12	-0.0050	-0.0074	**53**	-1.3339	-1.9687	**94**	0.4416	0.6518	**135**	0.2237	0.3302
13	0.1719	0.2537	**54**	-1.1956	-1.7645	**95**	-1.0306	-1.5210	**136**	-0.3764	-0.5555
14	0.4921	0.7263	**55**	-0.7458	-1.1007	**96**	-0.6371	-0.9402	**137**	-0.3227	-0.4763
15	0.4200	0.6199	**56**	-1.3508	-1.9936	**97**	0.0685	0.1010	**138**	-0.1904	-0.2810

16	0.2602	0.3840	**57**	-1.2645	-1.8662	**98**	-0.1243	-0.1835	**139**	-0.0086	-0.0127
17	0.4369	0.6449	**58**	-0.4704	-0.6943	**99**	-0.7841	-1.1573	**140**	0.3713	0.5480
18	0.2344	0.3460	**59**	-0.3306	-0.4879	**100**	0.0782	0.1154	**141**	0.2292	0.3382
19	-0.2211	-0.3263	**60**	-0.9965	-1.4708	**101**	-0.5648	-0.8336	**142**	0.0667	0.0984
20	0.1192	0.1759	**61**	-0.1924	-0.2839	**102**	-0.4246	-0.6266	**143**	0.1043	0.1539
21	-0.5930	-0.8752	**62**	-2.4316	-3.5887	**103**	-0.2656	-0.3920	**144**	0.1408	0.2078
22	-0.5738	-0.8469	**63**	-0.8246	-1.2171	**104**	0.3652	0.5390	**145**	-0.2643	-0.3900
23	0.7214	1.0648	**64**	-0.2235	-0.3299	**105**	0.1324	0.1955	**146**	0.1177	0.1737
24	-0.7998	-1.1804	**65**	-2.1985	-3.2447	**106**	0.2793	0.4123	**147**	0.3679	0.5429
25	-2.3894	-3.5265	**66**	-0.3174	-0.4684	**107**	0.2458	0.3627	**148**	0.0257	0.0379
26	-0.2068	-0.3051	**67**	-0.0913	-0.1347	**108**	-0.1552	-0.2290	**149**	0.2177	0.3213
27	0.1531	0.2260	**68**	-0.8257	-1.2186	**109**	-0.3313	-0.4890	**150**	-0.1453	-0.2145
28	0.3397	0.5014	**69**	-1.4355	-2.1186	**110**	0.1970	0.2908			
29	-1.5610	-2.3038	**70**	0.1989	0.2936	**111**	-0.2894	-0.4272			
30	-1.9122	-2.8222	**71**	-1.0665	-1.5740	**112**	-1.1992	-1.7699			

(Source: Authors' calculation)

TABLE B Average abnormal returns and t- statistics of 150 companies for -280 to +250 days of stock split execution

Days	AAR	t-statistics	Days	AAR	t-statistics	Days	AAR	t-statistics	Days	AAR	t-statistics
-280	-0.0482	-0.0144	**-239**	0.2039	0.0609	**-198**	0.2479	0.0741	**-157**	0.4352	0.1301
-279	0.0272	0.0081	**-238**	-0.0057	-0.0017	**-197**	0.4360	0.1303	**-156**	0.6726	0.2010
-278	0.0381	0.0114	**-237**	-0.0246	-0.0073	**-196**	0.3728	0.1114	**-155**	0.5840	0.1745
-277	-0.1073	-0.0321	**-236**	0.0249	0.0074	**-195**	0.3644	0.1089	**-154**	0.2097	0.0627
-276	0.8341	0.2492	**-235**	0.5645	0.1687	**-194**	0.4027	0.1203	**-153**	0.6775	0.2024
-275	0.1928	0.0576	**-234**	-0.1881	-0.0562	**-193**	-0.0476	-0.0142	**-152**	0.7297	0.2180
-274	0.0178	0.0053	**-233**	0.4863	0.1453	**-192**	-0.3862	-0.1154	**-151**	0.4327	0.1293
-273	0.1795	0.0536	**-232**	0.3708	0.1108	**-191**	0.2185	0.0653	**-150**	0.8461	0.2528
-272	0.7065	0.2111	**-231**	0.2704	0.0808	**-190**	0.2559	0.0765	**-149**	-0.5514	-0.1648
-271	0.3718	0.1111	**-230**	0.3234	0.0966	**-189**	0.4361	0.1303	**-148**	0.2635	0.0787
-270	0.1961	0.0586	**-229**	0.6239	0.1864	**-188**	0.6161	0.1841	**-147**	-0.2974	-0.0889
-269	0.2938	0.0878	**-228**	0.0851	0.0254	**-187**	-0.1391	-0.0416	**-146**	0.2353	0.0703
-268	0.3853	0.1151	**-227**	0.7606	0.2273	**-186**	0.2807	0.0839	**-145**	0.4411	0.1318
-267	-0.2575	-0.0769	**-226**	0.2348	0.0702	**-185**	-0.1049	-0.0313	**-144**	0.0191	0.0057
-266	0.1824	0.0545	**-225**	0.1150	0.0343	**-184**	0.4342	0.1297	**-143**	-0.0617	-0.0184
-265	0.5531	0.1653	**-224**	0.7422	0.2218	**-183**	0.0296	0.0089	**-142**	0.4193	0.1253
-264	0.6633	0.1982	**-223**	0.7627	0.2279	**-182**	-0.1521	-0.0455	**-141**	0.1566	0.0468
-263	0.0299	0.0089	**-222**	0.2036	0.0608	**-181**	0.4983	0.1489	**-140**	0.5047	0.1508
-262	-0.0645	-0.0193	**-221**	0.2291	0.0685	**-180**	0.2761	0.0825	**-139**	0.1974	0.0590
-261	-0.2136	-0.0638	**-220**	-0.1734	-0.0518	**-179**	0.3142	0.0939	**-138**	0.3018	0.0902
-260	-0.1439	-0.0430	**-219**	0.4229	0.1264	**-178**	0.0546	0.0163	**-137**	0.2853	0.0852
-259	0.2906	0.0869	**-218**	0.0071	0.0021	**-177**	0.0774	0.0231	**-136**	0.4235	0.1265
-258	0.3481	0.1040	**-217**	0.0426	0.0127	**-176**	0.1309	0.0391	**-135**	0.0614	0.0184
-257	-0.0085	-0.0025	**-216**	0.4398	0.1314	**-175**	0.2865	0.0856	**-134**	-0.1896	-0.0567
-256	-0.5037	-0.1505	**-215**	0.2605	0.0779	**-174**	0.0926	0.0277	**-133**	0.3674	0.1098
-255	0.2758	0.0824	**-214**	0.0648	0.0194	**-173**	0.5144	0.1537	**-132**	-0.0644	-0.0192

-254	-0.0037	-0.0011	**-213**	0.2963	0.0885	**-172**	0.0509	0.0152	**-131**	0.3328	0.0994
-253	-0.1476	-0.0441	**-212**	0.6009	0.1796	**-171**	0.5771	0.1725	**-130**	0.0858	0.0256
-252	0.3773	0.1128	**-211**	0.0055	0.0016	**-170**	0.4427	0.1323	**-129**	0.1234	0.0369
-251	0.1762	0.0527	**-210**	0.4648	0.1389	**-169**	0.7262	0.2170	**-128**	0.4625	0.1382
-250	0.1118	0.0334	**-209**	0.6615	0.1977	**-168**	0.5397	0.1613	**-127**	0.6382	0.1907
-249	-0.1124	-0.0336	**-208**	0.3145	0.0940	**-167**	0.2737	0.0818	**-126**	0.3804	0.1137
-248	-0.7123	-0.2128	**-207**	0.5286	0.1580	**-166**	0.1505	0.0450	**-125**	-0.2249	-0.0672
-247	-0.0375	-0.0112	**-206**	-0.0821	-0.0245	**-165**	0.3157	0.0943	**-124**	-0.0806	-0.0241
-246	0.0994	0.0297	**-205**	-0.0158	-0.0047	**-164**	0.1401	0.0419	**-123**	0.3731	0.1115
-245	0.5147	0.1538	**-204**	0.6162	0.1841	**-163**	-0.1719	-0.0514	**-122**	0.3160	0.0944
-244	-0.0999	-0.0299	**-203**	-0.0964	-0.0288	**-162**	0.3697	0.1105	**-121**	0.3055	0.0913
-243	0.3012	0.0900	**-202**	-0.0767	-0.0229	**-161**	0.1469	0.0439	**-120**	0.2492	0.0745
-242	0.2372	0.0709	**-201**	0.2064	0.0617	**-160**	0.4527	0.1353	**-119**	0.3787	0.1132
-241	0.1555	0.0465	**-200**	0.3817	0.1141	**-159**	0.1702	0.0508	**-118**	0.5259	0.1572
-240	0.1823	0.0545	**-199**	0.1226	0.0366	**-158**	-0.1944	-0.0581	**-117**	-0.0388	-0.0116

Days	**AAR**	**t-statistics**	**Days**	**AAR**	**t-statistics**	**Days**	**AAR**	**t-statistics**	**Days**	**AAR**	**t-statistics**
-116	0.8480	0.2534	**-75**	0.3537	0.1057	**-34**	0.1535	0.0459	**7**	-0.7745	-0.2314
-115	-0.0857	-0.0256	**-74**	0.8550	0.2555	**-33**	-0.0327	-0.0098	**8**	-0.6461	-0.1931
-114	0.4054	0.1211	**-73**	0.6145	0.1836	**-32**	0.6317	0.1888	**9**	-0.0937	-0.0280
-113	0.1122	0.0335	**-72**	-0.0320	-0.0096	**-31**	-0.0622	-0.0186	**10**	-0.3440	-0.1028
-112	0.5715	0.1708	**-71**	0.1439	0.0430	**-30**	-0.1706	-0.0510	**11**	0.0548	0.0164
-111	0.3429	0.1025	**-70**	0.8738	0.2611	**-29**	0.3825	0.1143	**12**	-0.3863	-0.1154
-110	0.2597	0.0776	**-69**	0.1898	0.0567	**-28**	0.3564	0.1065	**13**	-0.1152	-0.0344
-109	0.3729	0.1114	**-68**	0.5190	0.1551	**-27**	0.3169	0.0947	**14**	0.1891	0.0565
-108	-0.0471	-0.0141	**-67**	-0.0660	-0.0197	**-26**	0.4217	0.1260	**15**	-0.4645	-0.1388
-107	-0.2240	-0.0669	**-66**	0.0821	0.0245	**-25**	0.1990	0.0595	**16**	-0.0246	-0.0074
-106	-0.2706	-0.0809	**-65**	0.0025	0.0008	**-24**	-0.0744	-0.0222	**17**	0.1628	0.0487
-105	0.2491	0.0744	**-64**	0.1341	0.0401	**-23**	-0.1940	-0.0580	**18**	0.1586	0.0474
-104	-0.2048	-0.0612	**-63**	0.1850	0.0553	**-22**	0.0422	0.0126	**19**	0.2372	0.0709
-103	0.2654	0.0793	**-62**	0.2470	0.0738	**-21**	0.0489	0.0146	**20**	-0.1683	-0.0503
-102	0.3005	0.0898	**-61**	0.2356	0.0704	**-20**	0.6523	0.1949	**21**	0.0969	0.0289
-101	0.3153	0.0942	**-60**	0.3284	0.0981	**-19**	0.4050	0.1210	**22**	0.1710	0.0511
-100	0.0261	0.0078	**-59**	0.5573	0.1665	**-18**	-0.4896	-0.1463	**23**	-0.1407	-0.0420
-99	0.3176	0.0949	**-58**	0.3178	0.0950	**-17**	0.3528	0.1054	**24**	0.3571	0.1067
-98	0.1894	0.0566	**-57**	0.4134	0.1235	**-16**	0.2676	0.0800	**25**	-0.1195	-0.0357
-97	0.7544	0.2254	**-56**	0.7000	0.2092	**-15**	0.0839	0.0251	**26**	-0.0925	-0.0277
-96	0.7892	0.2358	**-55**	-0.0917	-0.0274	**-14**	0.0342	0.0102	**27**	0.0193	0.0058
-95	0.1910	0.0571	**-54**	0.2867	0.0857	**-13**	0.4838	0.1446	**28**	0.3453	0.1032
-94	0.1700	0.0508	**-53**	0.1372	0.0410	**-12**	0.5604	0.1675	**29**	-0.0585	-0.0175
-93	0.2308	0.0690	**-52**	0.0427	0.0128	**-11**	-0.0181	-0.0054	**30**	-0.0683	-0.0204
-92	0.2332	0.0697	**-51**	0.1235	0.0369	**-10**	0.1647	0.0492	**31**	0.0581	0.0174
-91	0.3603	0.1077	**-50**	-0.0574	-0.0171	**-9**	0.4506	0.1346	**32**	-0.3592	-0.1073
-90	-0.1658	-0.0495	**-49**	0.6724	0.2009	**-8**	-0.2129	-0.0636	**33**	-0.0482	-0.0144
-89	0.2131	0.0637	**-48**	0.7027	0.2100	**-7**	0.4392	0.1312	**34**	0.3644	0.1089

-88	0.2728	0.0815	**-47**	-0.2215	-0.0662	**-6**	0.7942	0.2373	**35**	0.2741	0.0819
-87	-0.0403	-0.0120	**-46**	0.1956	0.0585	**-5**	0.5593	0.1671	**36**	-0.0719	-0.0215
-86	0.2843	0.0850	**-45**	0.4110	0.1228	**-4**	0.4485	0.1340	**37**	-0.4371	-0.1306
-85	0.3056	0.0913	**-44**	0.2961	0.0885	**-3**	0.1709	0.0511	**38**	0.0283	0.0085
-84	0.3243	0.0969	**-43**	0.2440	0.0729	**-2**	1.0506	0.3139	**39**	0.1541	0.0460
-83	0.2408	0.0720	**-42**	0.4894	0.1462	**-1**	0.9936	0.2969	**40**	-0.1306	-0.0390
-82	0.7879	0.2354	**-41**	0.1458	0.0436	**0**	-76.1696	-22.7607	**41**	0.0593	0.0177
-81	-0.0944	-0.0282	**-40**	-0.1095	-0.0327	**1**	0.8286	0.2476	**42**	0.2367	0.0707
-80	0.4994	0.1492	**-39**	0.2492	0.0745	**2**	0.3869	0.1156	**43**	0.4138	0.1237
-79	0.3638	0.1087	**-38**	0.6795	0.2031	**3**	0.0025	0.0007	**44**	0.2080	0.0622
-78	0.2072	0.0619	**-37**	0.0345	0.0103	**4**	-0.4876	-0.1457	**45**	0.2984	0.0892
-77	0.3142	0.0939	**-36**	0.0097	0.0029	**5**	-0.0240	-0.0072	**46**	0.1981	0.0592
-76	0.0878	0.0263	**-35**	0.7029	0.2100	**6**	-0.3759	-0.1123	**47**	0.1635	0.0488

Days	AAR	t-statistics	Days	AAR	t-statistics	Days	AAR	t-statistics	Days	AAR	t-statistics
48	0.0093	0.0028	**89**	0.0068	0.0020	**130**	0.1803	0.0539	**171**	-0.3310	-0.0989
49	-0.3953	-0.1181	**90**	-0.4790	-0.1431	**131**	-0.2280	-0.0681	**172**	-0.0574	-0.0172
50	-0.4174	-0.1247	**91**	0.1704	0.0509	**132**	-0.3598	-0.1075	**173**	0.1466	0.0438
51	-0.3513	-0.1050	**92**	0.0463	0.0138	**133**	-0.0990	-0.0296	**174**	-0.0628	-0.0188
52	0.1198	0.0358	**93**	0.2879	0.0860	**134**	-0.3977	-0.1189	**175**	0.1241	0.0371
53	-0.0490	-0.0146	**94**	0.3649	0.1090	**135**	0.1098	0.0328	**176**	0.0857	0.0256
54	-0.1379	-0.0412	**95**	0.1242	0.0371	**136**	0.1984	0.0593	**177**	0.1000	0.0299
55	0.0791	0.0236	**96**	0.3221	0.0962	**137**	-0.1188	-0.0355	**178**	-0.3810	-0.1138
56	0.0883	0.0264	**97**	-0.3744	-0.1119	**138**	0.4300	0.1285	**179**	0.1651	0.0493
57	0.3817	0.1141	**98**	-0.2879	-0.0860	**139**	-0.0875	-0.0261	**180**	-0.0922	-0.0276
58	-0.4080	-0.1219	**99**	-0.0396	-0.0118	**140**	-0.3894	-0.1164	**181**	-0.1992	-0.0595
59	0.1532	0.0458	**100**	-0.2386	-0.0713	**141**	-0.0816	-0.0244	**182**	-0.1421	-0.0425
60	0.3215	0.0961	**101**	-0.2928	-0.0875	**142**	-0.1539	-0.0460	**183**	-0.0184	-0.0055
61	0.2677	0.0800	**102**	-0.3655	-0.1092	**143**	0.1545	0.0462	**184**	0.0694	0.0207
62	-0.1677	-0.0501	**103**	-0.0714	-0.0213	**144**	-0.1901	-0.0568	**185**	0.0376	0.0112
63	0.0010	0.0003	**104**	0.0046	0.0014	**145**	-0.2660	-0.0795	**186**	-0.1525	-0.0456
64	-0.1384	-0.0413	**105**	-0.1294	-0.0387	**146**	0.1797	0.0537	**187**	-0.3263	-0.0975
65	0.5461	0.1632	**106**	-0.2040	-0.0610	**147**	-0.5941	-0.1775	**188**	0.2400	0.0717
66	0.2695	0.0805	**107**	0.0196	0.0059	**148**	-0.3467	-0.1036	**189**	-0.0544	-0.0163
67	-0.3327	-0.0994	**108**	-0.2784	-0.0832	**149**	-0.1191	-0.0356	**190**	-0.1356	-0.0405
68	-0.0591	-0.0177	**109**	-0.0516	-0.0154	**150**	0.3816	0.1140	**191**	-0.1907	-0.0570
69	-0.0215	-0.0064	**110**	0.3233	0.0966	**151**	0.1195	0.0357	**192**	-0.3624	-0.1083
70	-0.3654	-0.1092	**111**	-0.0199	-0.0059	**152**	-0.0504	-0.0150	**193**	0.1511	0.0452
71	0.0773	0.0231	**112**	0.3737	0.1117	**153**	0.0953	0.0285	**194**	0.0923	0.0276
72	0.1696	0.0507	**113**	-0.1360	-0.0406	**154**	0.5084	0.1519	**195**	-0.2391	-0.0714
73	0.2786	0.0832	**114**	-0.0896	-0.0268	**155**	0.3040	0.0908	**196**	6.7754	2.0246
74	0.0106	0.0032	**115**	0.3890	0.1162	**156**	-0.2939	-0.0878	**197**	0.5169	0.1544
75	0.1750	0.0523	**116**	-0.1962	-0.0586	**157**	0.0976	0.0292	**198**	0.0407	0.0122
76	0.4630	0.1384	**117**	0.2522	0.0754	**158**	0.3310	0.0989	**199**	-0.2588	-0.0773

77	0.0005	0.0002	**118**	0.2597	0.0776	**159**	-0.3129	-0.0935	**200**	-0.1873	-0.0560
78	0.0462	0.0138	**119**	-0.0805	-0.0241	**160**	0.0769	0.0230	**201**	0.1589	0.0475
79	0.2194	0.0656	**120**	-0.3705	-0.1107	**161**	0.3048	0.0911	**202**	0.1160	0.0347
80	-0.0820	-0.0245	**121**	0.0757	0.0226	**162**	0.1831	0.0547	**203**	-0.0650	-0.0194
81	0.0006	0.0002	**122**	-0.1641	-0.0490	**163**	0.2158	0.0645	**204**	0.0173	0.0052
82	-0.1909	-0.0570	**123**	-0.3650	-0.1091	**164**	0.0587	0.0175	**205**	0.2361	0.0706
83	0.0790	0.0236	**124**	0.5561	0.1662	**165**	-0.5834	-0.1743	**206**	-0.1654	-0.0494
84	-0.4201	-0.1255	**125**	0.3588	0.1072	**166**	0.0598	0.0179	**207**	-0.3178	-0.0950
85	0.0429	0.0128	**126**	-0.4239	-0.1267	**167**	-0.4376	-0.1308	**208**	-0.1714	-0.0512
86	0.5848	0.1747	**127**	0.5870	0.1754	**168**	0.0315	0.0094	**209**	-0.1059	-0.0316
87	-0.2895	-0.0865	**128**	-0.3222	-0.0963	**169**	-0.2113	-0.0631	**210**	-0.3747	-0.1120
88	0.1340	0.0400	**129**	-0.2628	-0.0785	**170**	0.2633	0.0787	**211**	-0.1322	-0.0395

Days	AAR	t-statistics	Days	AAR	t-statistics	Days	AAR	t-statistics	Days	AAR	t-statistics
212	-0.3665	-0.1095	**222**	0.2098	0.0627	**232**	5.3458	1.5974	**242**	0.3785	0.1131
213	-0.0498	-0.0149	**223**	0.5221	0.1560	**233**	-0.3493	-0.1044	**243**	-0.2116	-0.0632
214	0.2612	0.0781	**224**	-0.5313	-0.1588	**234**	0.0533	0.0159	**244**	0.1583	0.0473
215	0.3849	0.1150	**225**	-0.3753	-0.1122	**235**	0.2513	0.0751	**245**	-0.0728	-0.0217
216	0.8230	0.2459	**226**	-0.4757	-0.1422	**236**	-0.3517	-0.1051	**246**	-0.3324	-0.0993
217	-0.1165	-0.0348	**227**	-0.2427	-0.0725	**237**	-0.0388	-0.0116	**247**	-0.2135	-0.0638
218	-0.1109	-0.0331	**228**	-0.2488	-0.0744	**238**	0.2785	0.0832	**248**	0.5709	0.1706
219	0.4871	0.1456	**229**	0.7193	0.2149	**239**	-0.2217	-0.0663	**249**	0.0737	0.0220
220	-0.0738	-0.0221	**230**	-0.3750	-0.1121	**240**	0.3516	0.1051	**250**	-0.2785	-0.0832
221	0.5305	0.1585	**231**	-0.2252	-0.0673	**241**	-0.2758	-0.0824			

(Source: Authors' calculation)

(Footnotes)

[1] However, for such a higher cumulative abnormal return of 58.012 cannot be traced to only stock split phenomenon.

[2] Just one day prior to stock split execution