ABNORMAL RETURN ON STOCK SPLIT - REVISITING THE EVIDENCE OF THAILAND DURING 2009 - 2018

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ABSTRACT: *An abnormal return on the stock split is one of the most prominent debates in the finance industry. Positive signaling and optimal trading range hypotheses are underlying principles that are commonly used to describe a positive market reaction to the stock split. This research paper focuses specifically on the market's reactions by the announcement date of the stock split, applying firm size and price range to explore insightful connections. The samples are listed companies in the Stock Exchange of Thailand (MAI excluded) with a stock split from January 1, 2009, to December 31, 2018, aiming to capture data in all economic cycles. To examine positive abnormal returns around announcement date, the event-study-methodology is applied. The study indicates that average abnormal return (AAR) and cumulative average abnormal return (CAAR) are significantly positive during the announcement. Applying firm size in the study, the market tends to react more positively to small-size firms, likewise, low-price. The pieces of evidence indicated that stocks responded more positively by reason of consciously or subconsciously anticipation to post-splits. The investors are able to apply the rationales and logic behind this corporate action to distinguish between fundamental changes and expectations for their investment decisions in financial markets.*

Keywords: *Stock splits, average abnormal return, cumulative average abnormal return, event study, announcement date*

Introduction

Stock split refers to the adjustment of par value of the stock by the firm. In effect, a split simply increases the number of shares outstanding by subdividing the existing number of shares into a greater number of units. As one of the most commonly used corporate practices spanning several decades, stock split has been one of the widely researched topics in finance literature. In theory, stock splits are a cosmetic change with no real economic value or any impact on cash flow, investments or capital structures of the firm. In practice, however, stock splits have been one of the most common corporate actions in use until today. One of the most prominent examples is the announcement of stock split by Apples with effect on 30th July 2020, marking the fifth stock splits since the company went public in 1980 (Bary, 2020).

One of the most commonly asked questions explores the reason behind stock splits. This topic has been one of the most widely researched areas and disputes among scholars as they try to understand the rationales of stock splits and market reactions surrounding the announcement date over the past forty years (Karim, 2018). According to the empirical evidence, there are three main hypotheses explaining the stock splits phenomenon, namely the signaling, the optimal trading range and the liquidity hypotheses. More specifically, these hypotheses suggest that

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stock split has been used by the company's management to convey positive information to the investors (Easley, O'Hara & Saar, 2001). Also, it has been used as a tool to keep the stock price within a trading range. In doing so, stock splits make the shares more affordable and attractive to retail investors (Lakonishok & Lev, 1987), thereby increasing the investors' base and supporting the liquidity.

While some of these hypotheses have been receiving empirical support, the subject remains a matter of debate in the academic community. The signaling hypothesis, for instance, suggests that the executives use stock split as a signal to convey positive news such as an increase in the earnings per share or dividend payment. On the one hand, various researchers find the evidence that positive performance announcements typically follow stock splits (Asquith, Healy & Palepu, 1989, McNichols & Dravid, 1990, Doran, 1994) as well as post-split excess return (Ikenberry, Rankine & Stice, 1996, Nayak & Prabhala, 2001).

There also exists evidence to the contrary. For instance, Byun and Rozeff (2003) examined the post-split performance of splits from 1927 to 1996 to measure abnormal returns by size and book-to-market reference portfolios. Although they found abnormal returns during some sub-periods, their study reported that there was no significant abnormal return over the long-term. Another research, focusing on 635 split announcements during 1982 - 1997, found that stock split announcements had no relationship with firm profitability at all. In fact, they found there was a negative growth two year among firms that made stock split announcements.

Apart from the preceding contradicting evidence, stock splits are also associated with further negative outcomes such as the increase in trading spreads (Schultz, 2000), transaction costs, and uninformed trading (Easley, O'Hara & Saar, 2001). Nonetheless, stock splits have somehow evolved to become common practice after the continual increases in stock prices (Fama et al., 1969). In Thailand, there were approximately 500 stock splits in the Stock Exchange of Thailand. More recent studies showed that there were over 92.8% of 310 listed companies in the Stock Exchange of Thailand (SET) and the Market for Alternatives Investment (MAI), announcing stock splits during 2001 - 2016. Having said that, this survey further showed that stock splits had been used mainly by smaller sized firms. With respect to the purpose of the stock split announcement, Leemakdej (2007) applied EVARCH to examine abnormal return on stock splits in the Stock Exchange of Thailand during 2001 - 2005. Although the study did not find any link between stock split announcements to increase the liquidity of the stock, it indicated that the stock split announcements were often used along with capital increase to reduce the possible negative effect.

To better understand stock splits in Thailand, this research examines the following research questions. Firstly, do abnormal returns exist around stock splits announcement dates in recent period? Secondly, what are the characteristics of firms, announcing stock splits? Are there any associations between stock split announcements and firm sizes or price range, which may yield further relationship with the liquidity enhancement? To address the preceding questions, the subsequent sections will describe the existing literature on this topic, research methodology, results and discussion and conclusion and limitation of research.

Literature Review

There are two major schools of thoughts, explaining the rationales of stock split. These are the Positive Signaling Hypotheses and the Optimal Trading Range Hypotheses. Each hypothesis is briefly reviewed below:

The Positive Signaling Hypothesis

According to this school of thought, firms use stock splits as a means to transmit private favorable information about growth performance in the near future. On the basis of agency theory, it is argued that there is an information asymmetry between executives and investors, whereby investors tend to have inferior information, compared to the executives (Brennen & Copeland, 1988). According to the Positive Signaling Hypothesis, the announcement of stock splits could reduce the information asymmetries that might exist between stockholders and management. (Kunz & Rosa-Majhensek, 2008; Easley *et al*, 2001). As a result, uncertainty with regard to earning anticipations are reduced by stock split announcement. Furthermore, Easley et al (2001) found that investors perceived a stock split as means to address the information asymmetries. In this respect, McNichols and Dravid (1981) purported that abnormal returns on stock split announcements could be associated with indicators of executive's positive insider's information (Elfakhani & Lung. 2003).

The Optimal Trading Range Hypothesis

With this hypothesis, the Optimal Trading Range Hypothesis states that whether consciously or subconsciously, investors search for stocks that are traded within an optimal range. As a consequence, firms prefer to keep their stock price in that range. According to the study by Lakonishok and Lev (1987), firms tended to use stock splits as a tool to bring the stock prices to a certain range after a period of a continuous increase in stock price. A stock split makes the stock more affordable and more attractive to retail investors, which can be seen by increasing the shareholder base. Most retail investors with a limited fund believe that a greater number of shares holding is better than fewer, even though investment amount is the same. Birru & Wang (2016) finds that investors are willing to purchase low-price stock with the intrinsic value of more growth opportunity. Investors are facilitated to purchase a stock in a round lot, unit of 100 shares, after the firm announced stock split (Teweles & Bradley, 1987). Furthermore, the higher shareholder base also enhances the liquidity of the stock. Amihoud & Mendelson (1986) discovered that liquidity factor is positively related to the share value. In other words, experienced investors value stocks with the consideration to liquidity, discounting illiquidity shares more heavily than liquid shares.

However, the hypotheses above are still inconclusive due to different outcomes. According to Fama, Fisher, Jensen & Roll (1969), the stock split is frequently announced after the period of prolonged growth both in earnings and stock price. Kadiyala & Vetsuypens (2002) illustrate that executive's decision on stock split is led by stronger past performance than the confidence in future performance in these regards. Surely, there is a penalty to the firm that sent a false signal to investors. Doran (1995) indicates that the market tends to have a less positive reaction to the next time that firm announces a stock split. According to Pilotte & Manuel (1996), the post-split stock prices are derived from the previous stock split experience and earning. Moreover, So & Tse (2000) concludes that firms sometimes announce stock splits since it is a norm. At some point in time, firms will eventually announce stock splits when it has reached some certain criteria. Negative outcomes are evidenced by empirical researches for example increased priced volatility, larger trading spreads including increased transaction costs from a stock split (Easley et al, 2001). Therefore, there are no ultimate reasons that fully specify the rationales behind stock split, more other factors are needed to be explored

Since 1975, there have been approximately 500 stock splits in the Stock Exchange of Thailand. Tabtieng (2017), finds that small size firms are frequently announcing stock splits even though stock prices are low with sufficient liquidity, compared to big size firms. The study finds that from 2001 to 2016, positive abnormal returns exist, supported by the positive signal hypothesis. Saetae (2018) also finds significant positive abnormal returns from 2013 to 2018. In contrast, Leemakde (2007) finds that there is no significant positive abnormal return from 2001 to 2005 in the Stock Exchange of Thailand. The study finds that the market reacts negatively since stock split might be used as a signal of future capital increase. Previous studies do not clearly investigate whether a significant positive abnormal return had existed during the announcement date by considering the effect in rarely attracting perspectives. Likewise, several studies have an inadequate length of study period, not covering all economic cycles, which may affect the results. These puzzles encourage the author to examine answers thereby becoming the study topic. To clarify these questions, this research paper aims to address the effect of how the market reacts to stock splits on the announcement date on the widen study period, during 2009 to 2018, with the intention to cover all economic cycles. For more understanding about insightful connections, samples are categorized into subgroups according to firm sizes (market capitalization) and price ranges (adjusted price). Since firm size is used as an indicator to represent how growth opportunities are viewed by the market. Significant increases in earnings are frequently found in small size firms than large size firms. The common reason is a lower base of earnings has a high growth opportunity in percentage terms. For psychologically perception, price range is use as representative since it identifies the certain range of stock prices that the market pays attention to.

Hypotheses

This research applies the framework from Griffin (2010), the author conducts the study to investigate a positive abnormal return in the Stock Exchange of Thailand both at the announcement date and during the event takes place. The null hypotheses are stated as follow

"*There is no significant positive abnormal return on the announcement date of the stock split.*"

"There is no significant positive cumulative abnormal return around the announcement date."

To examine the relationship of the effect in a new aspect, firm size and price range are used to classify the samples into a subgroup. The null hypotheses are stated as follow

"Different firm size has no significant effect on cumulative abnormal return around the announcement date."

"Different price ranges have no significant effect on cumulative abnormal return around the announcement date."

Materials and Methods

Description of Data

This research is based on a secondary data set of listed companies in the Stock Exchange of Thailand (SET) which has stock split announcement dates during January 1 2009 to December 31 2018. The necessary data in this research is downloaded from two databases, Thomson Reuters Eikon and Setsmart. Thomson Reuters Eikon is a financial data-based software provided by Refinitiv, used to capture financial information on several asset classes worldwide such as stock markets, money markets, fixed income, commodities and foreign exchange. Setsmart is a data-based platform provided by the Stock Exchange of Thailand, used for analyzing fundamental information focusing on listed companies in Thailand.

There were 96 companies that announced a stock split during the study period. The related data are obtained daily from Thomson Reuters Eikon and Setsmart which are announcement dates, closing prices (adjusted prices), SET index, market capitalization, beta, risk free rate etc.

For intense analysis, the research identifies the samples by grouping through firm sizes (market capitalization) and price ranges (adjusted price) in order to find the linkage in new dimensions. Samples that are classified by market capitalization will be divided into small-size firm (market capitalization less than THB 5 billion), medium-size firm (market capitalization more than THB 5 billion but less than THB 20 billion) and large-size firm (market capitalization more than THB 20 billion). For price range classification's criteria, samples are classified to low-price range (less than THB 5/share), medium-price range (more than THB 5/share but less than THB 10/share) and high-price range (more than THB 10/share).

A return measurement in each period ($R_{i,t}$) is calculated by using the natural logarithm return with the following formula

$$R_{i,t} = ln(P_{i,t}) - ln(P_{i,t-1})$$

Stock split

A stock split is an action that a firm decides to increase the number of shares outstanding by issuing new shares to shareholders. Although, this corporate decision has positive impacts to the increasing number of shares outstanding with a specific multiple which is technically called as "split factor", the share price is negatively impacted by proportionately decreasing with the same figure. As a result, the market capitalization remains unchanged and shareholders also have the same proportion of ownership in the firm. No real value is added by stock split. According to Lamoureux & Poon (1987) "Splits are only cosmetic change, slicing the same pie into smaller pieces but not changing the fractional ownership of the equity interest and votes in the firm". For an n for m stock split, the split factor is calculated as the following formula

$$split\ factor = \frac{n}{m}$$

Share price and number of share outstanding are impact as the following formulas

$$share\ price_{post-split} = \frac{share\ price_{pre-split}}{split\ factor}$$

$$number\ of\ share\ outstanding_{post-split} = number\ of\ share\ outstanding_{pre-split}\ x\ split\ factor$$

For example, a stock that is trading at THB 100 per share, if the firm announces a 2 for 1 stock split, the existing shareholder that previously held 1 share at THB 100 per share would now hold 2 shares at THB 50 per share. Thus, stock splits add no value to the firm. It can be simply viewed as cutting a pie into smaller pieces.

Methodology

Again, this research will examine whether the announcement date of stock split in the Stock Exchange of Thailand has a significant positive abnormal return. Any firm that announced a stock split during January 1 2009 to December 31 2018 is qualified to be a sample. An event study is applied with a total of 96 samples (firms). There are five main steps to conduct event study (Sitthipongpanich, 2011).

First step is identifying the interested event and sample selection criteria. In this step timeline of an event study interested event is identified to indicate the event date as shown in Figure 1 which typically known as "t = 0", in this case is the announcement date. Therefore, the samples are selected by applying the criteria according to the event date.

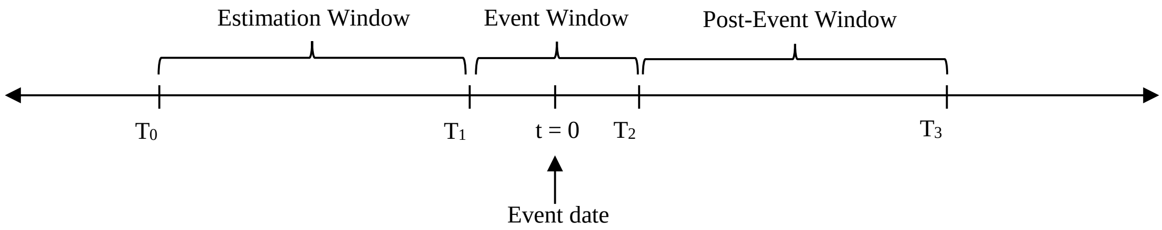


Figure 1 *Timeline of an event study*

Second step is analyzing the timeline of an event study. After the initial process is done, identifying the event date, event window and estimation window are needed to explore the abnormal return from the interested event. The estimation window, which in a range of T_0 to T_1 in Figure 1, is the period before the event date occurred. This period is used to determine the expected return of parameters. The event window, which is in a range of T_1 to T_2 in Figure 1, is the period that the effect of corporate action takes place which the abnormal return will be explored. The post-event window, which is in a range of T_2 to T_3 in Figure 1, is the period after the event date takes place. In this case, several event windows (T1 to T2) will be investigated (1) -30 to +30 days, (2) -30 to -1 days, (3) -1 to 0 days, (4) -1 to +1 days, (5) 0 to +1 days and (6) +1 to +30 days. Since, this research utilizes cross sectional data, regardless of differences in time, a parametric test for cross sectional study is applied to investigate the significance of abnormal return from this event study.

Third step is estimating the expected return for each sample over the estimation window. To examine the abnormal return, the expected return $(E(R_{i,t}))$ is estimated as the benchmark return which further be used to compare with the actual return $(R_{i,t})$ during the event window. Returns are clarified by using natural logarithm return, which further be used to find both average abnormal return (AAR) and cumulative average abnormal return (CAAR). The expected return represents the return in a normal situation that has eliminated the influence of an interesting event. There are several models used to estimate the expected return in the event study i.e. mean adjusted return, market adjusted return, market model adjusted return, CAPM adjusted return, etc. The parameters are measured over the estimation window (T_0 to T_1). The estimation period is the day before the event occurs, stock split announcement. This research paper applies CAPM adjusted return method to estimate the expected return with the following formula

$$E(R_{i,t}) = R_{f,t} + \beta_i(R_{m,t} - R_{f,t})$$

Capital Asset Pricing Model (CAPM) is a security return estimation model that accounts for the investment risk. The expected return is the sum of risk-free return $(R_{f,t})$and market risk premium $\left(R_{m,t} - R_{f,t}\right)$ is market risk premium.(β_i)beta, represents the return compensation for the risk of a security with the concept of higher return is required to compensate for higher r

Fourth step is the calculation of abnormal return. An abnormal return $(AR_{i,t})$ is the excess return between the actual return $(R_{i,t})$ and the expected return $(E(R_{i,t}))$ in each time (t) in the event with the following formula

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

Average abnormal return is the average return of all samples on time (t) divided by number of samples with the following formula

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

The win rate is calculated as

$$Win\ rate_t = \frac{N_{AAR>0,t}}{N}$$

Cumulative average abnormal return is the sum of return of all samples on time (t) divided by number of samples with the following formula

$$CAAR_{t_1,t_2} = \sum_{i=1}^{N} AR_{i,t}$$

The final step is testing the significance of abnormal return. In order to test the significance of average abnormal return (AAR) and cumulative average abnormal return (CAAR), a parametric test for cross sectional analysis is applied. According to Brown & Warner (1980), the standard deviation of the event window is estimated to account for the dependence of cross-sectional returns.

The test statistic for AAR is calculated as

$$t_{AAR_t} = \sqrt{N}\frac{AAR_t}{\sigma_{AAR_t}}$$

Where σ_{AAR_t} is the standard deviation across samples at time t

$$\sigma_{AAR_t} = \sqrt{\frac{\sum_{i=1}^{N} (AR_{i,t} - AAR_t)^2}{N-1}}$$

The test statistic for CAAR is calculated as

$$t_{CAAR_t} = \sqrt{N}\frac{CAAR_t}{\sigma_{CAAR_t}}$$

Where σ_{CAAR_t} is the standard deviation of cumulative abnormal return across samples at time t

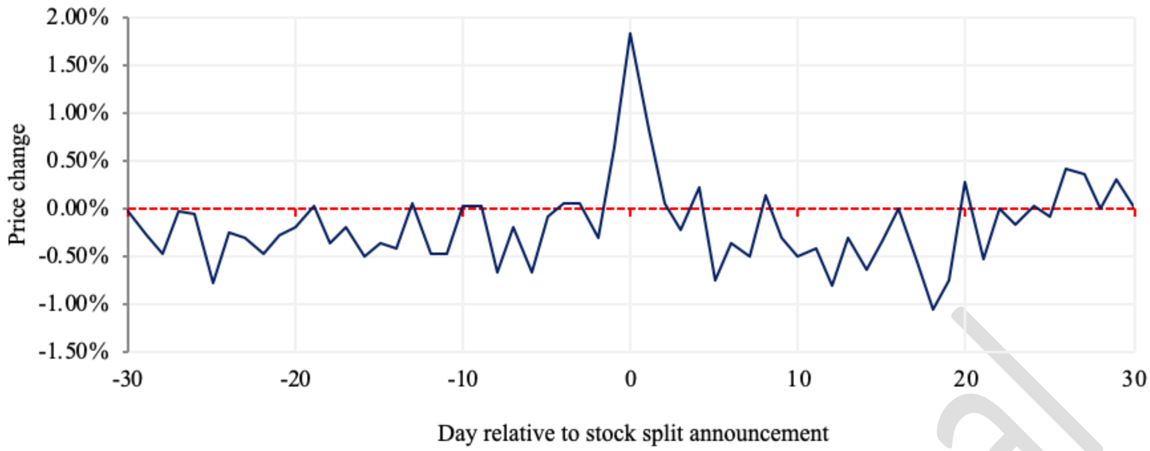
$$\sigma_{CAAR_t} = \sqrt{\frac{\sum_{i=1}^{N} (CAR_i - CAAR_t)^2}{N-1}}$$

Results and discussion

Average Abnormal Return (AAR)

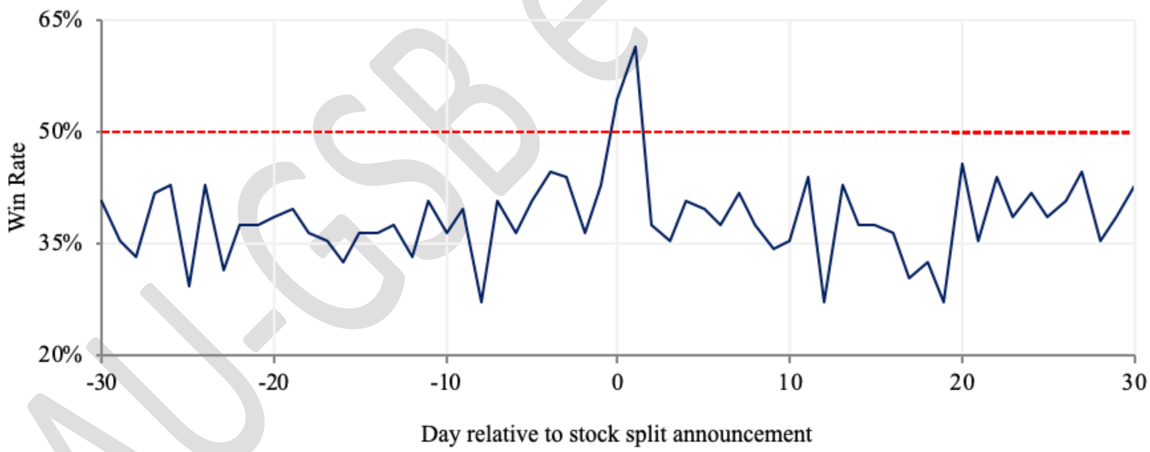
From the event study methodology, the author has calculated the daily average abnormal return from -30 to +30 days during the stock split announcement date of the samples. Figure 2 displays that from -30 to -1 days before the announcement and +1 to +30 days after the announcement date, there is no outstanding average abnormal return (AAR). The only particular range that the AAR is dominant (increase around 1.8%) is around the announcement date (day 0).

Figure 2 *Average Abnormal Return*



To explore in other perspectives, Figure 3 shows the win rate of AAR which contributes by all samples in each trading day. The win rate of AAR is considered by comparing actual return ($R_{i,t}$) and expected return ($E(R_{i,t})$) from the CAPM adjusted return method. This method ignores the absolute return that samples generate but focuses on the average win rate in each time. The result is displayed in the same direction with the above method. There is no outstanding win rate during -30 to +30 days except the short interval around the announcement date that average win rate of AAR spikes to almost 60%.

Figure 3 *Average Win Rate of AAR*



Descriptive Statistic	Average Abnormal Return	Average Win Rate
Average	-0.18%	38.41%
Min	-1.05%	27.08%
Max	1.82%	61.46%

Table 1 reports AAR around the announcement date of entire samples, 96 firms, which includes the event window during -30 to +30 days (61 days). During the event window, the mean of AAR is -0.18% with the average standard deviation of 3.20% and average win rate at 38.41%. On the announcement date (day 0), the highest AAR existed with a statistical significance at 5% level. Among other statistically significant dates, the announcement date also contributes the highest win rate at 54.17%. The results indicate that there is a positive abnormal return on stock split announcement in the Stock Exchange of Thailand during 2009 to 2018. On an average, the market has a positive reaction to this event which perhaps can be influenced by the confidence in the firm's future performance along with the optimal trading price range. During the short interval around the event date, -1 to +1 days, AAR in each date is higher than the average of -0.18% while win rate also continuingly increases over this period.

Table 1: Average Abnormal Return around the Announcement Date (N = 96)

Date	AAR	S.D.	Win rate	t-stat	Date	AAR	S.D.	Win rate	t-stat
-30	-0.04%	2.78%	40.63%	-0.1282	**1**	0.82%	7.33%	61.46%	1.0954
-29	-0.28%	2.92%	35.42%	-0.938	**2**	0.06%	4.69%	37.50%	0.1248
-28	-0.47%	2.47%	33.33%	-1.8656*	**3**	-0.21%	5.46%	35.42%	-0.3822
-27	-0.04%	3.56%	41.67%	-0.1186	**4**	0.22%	2.58%	40.63%	0.8176
-26	-0.07%	1.97%	42.71%	-0.3243	**5**	-0.75%	3.81%	39.58%	-1.9184*
-25	-0.77%	3.03%	29.17%	-2.4976**	**6**	-0.35%	2.71%	37.50%	-1.2836
-24	-0.25%	1.91%	42.71%	-1.2998	**7**	-0.49%	2.72%	41.67%	-1.7641*
-23	-0.30%	2.31%	31.25%	-1.278	**8**	0.14%	4.66%	37.50%	0.2852
-22	-0.47%	2.58%	37.50%	-1.7902*	**9**	-0.30%	3.41%	34.38%	-0.8724
-21	-0.27%	2.52%	37.50%	-1.0485	**10**	-0.52%	4.46%	35.42%	-1.1344
-20	-0.19%	2.69%	38.54%	-0.6851	**11**	-0.41%	2.15%	43.75%	-1.8639*
-19	0.02%	3.46%	39.58%	0.0512	**12**	-0.81%	2.64%	27.08%	-3.0184**
-18	-0.35%	2.21%	36.46%	-1.5612	**13**	-0.29%	3.16%	42.71%	-0.9133
-17	-0.20%	3.19%	35.42%	-0.5983	**14**	-0.65%	2.76%	37.50%	-2.3138**
-16	-0.51%	2.25%	32.29%	-2.2259**	**15**	-0.33%	4.47%	37.50%	-0.7278
-15	-0.36%	2.37%	36.46%	-1.4831	**16**	0.00%	3.71%	36.46%	-0.0115
-14	-0.41%	2.68%	36.46%	-1.4985	**17**	-0.56%	2.36%	30.21%	-2.3089**
-13	0.04%	1.82%	37.50%	0.215	**18**	-1.05%	6.90%	32.29%	-1.4986
-12	-0.48%	2.19%	33.33%	-2.1615**	**19**	-0.75%	1.81%	27.08%	-4.0453**
-11	-0.47%	2.44%	40.63%	-1.8831*	**20**	0.28%	2.84%	45.83%	0.9548
-10	0.03%	2.66%	36.46%	0.1025	**21**	-0.53%	2.38%	35.42%	-2.1893**
-9	0.03%	3.14%	39.58%	0.1026	**22**	-0.01%	3.43%	43.75%	-0.0321
-8	-0.68%	2.93%	27.08%	-2.2742**	**23**	-0.18%	2.53%	38.54%	-0.7026

-7	-0.19%	2.59%	40.63%	-0.7053	**24**	0.04%	2.69%	41.67%	0.1323
-6	-0.66%	2.64%	36.46%	-2.4358**	**25**	-0.07%	2.52%	38.54%	-0.2824
-5	-0.07%	3.30%	40.63%	-0.2151	**26**	0.41%	4.13%	40.63%	0.9753
-4	0.05%	4.62%	44.79%	0.1119	**27**	0.36%	3.89%	44.79%	0.9173
-3	0.04%	2.37%	43.75%	0.1753	**28**	0.01%	3.40%	35.42%	0.0211
-2	-0.30%	2.61%	36.46%	-1.1138	**29**	0.31%	3.79%	38.54%	0.8053
-1	0.65%	4.39%	42.71%	1.446	**30**	-0.01%	2.52%	42.71%	-0.0434
0	1.82%	6.74%	54.17%	-2.6458**	**Average**	**-0.18%**	**3.20%**	**38.41%**	

*** significant at 5% level* ** significant at 10% level*

Cumulative Average Abnormal Return (CAAR)

CAAR is used to examine the AAR during the time interval. Table 2 shows the results of entire samples' CAAR during the event window of (1) -1 to 0 days, (2) -1 to +1 days and (3) 0 to +1 days that are statistically significant at 5% level. According to the results, there are positive cumulative abnormal returns during a short period of an announcement date. During the interval of -1 to +1 days, AAR in each day is considerably high which is indicated from Table 1 while CAAR in each interval is in range of 2.47% to 3.29%.

Table 2: *Cumulative average abnormal return of entire samples (N = 96)*

Event window	CAAR	t-stat
(-30,+30)	-10.79%	-1.2164
(-30,-1)	-6.96%	-1.7231*
(-1,0)	2.47%	2.5326**
(-1,+1)	3.29%	2.4632**
(0,+1)	2.64%	2.5372**
(+1,+30)	-5.65%	-1.1393

*** significant at 5% level* ** significant at 10% level*

Table 3 indicates that CAAR of small-size firms perform in the same way as the entire samples in excess of higher CAAR in each interval with statistical significance at 5% and 10%. In each interval of medium and large size firms are not statistically significantly at 5% level. Only event windows at -1 to +1 days of size firms are statistically significant at 10% level. The powerless market reaction around the announcement date may be attributed to low growth anticipation since large size firms usually have lower growth rate compared to a small size firm. To sum up, different firm sizes have an effect on cumulative abnormal return around the announcement date.

Table 3: Cumulative Average Abnormal Return Among Different Firm Size

	CAAR			**t-stat**		
Event window	Small size firms *(N = 43)*	Medium size firms *(N = 30)*	Large size firms *(N = 23)*	Small size firms	Medium size firms	Large size firms
(-30,+30)	-3.92%	-35.01%	7.94%	-0.5057	-1.3767	1.2859

(-30,-1)	-5.99%	-15.92%	2.91%	-2.1656**	1.3247	0.9565
(-1,0)	3.62%	1.35%	1.78%	1.9946*	0.8786	1.6950
(-1,+1)	5.37%	1.13%	2.20%	2.0539**	0.6212	1.9534*
(0,+1)	4.38%	0.99%	1.55%	2.1240**	0.8014	1.3694
(+1,+30)	-0.48%	-19.66%	2.98%	-0.0865	1.5403	0.6788

*** significant at 5% level* ** significant at 10% level*

As shown in Table 4, the CAAR of samples in the low-price range were statistically significant at 10% level during the announcement date. CAAR peaked at 4.59% during the interval of -1 to +1 days, still in the same direction as the earlier analysis. The samples in medium price likewise have positive abnormal return during the short interval of the announcement but with slightly less CAAR than samples in low-price range. During -1 to 0 days of the announcement, samples in a high price range have positive CAAR with statistically significant at 5% level. As a result, different price ranges have an effect on cumulative abnormal return around the announcement date. Compared to samples in other price ranges, the most dominant CAAR during the announcement date are the samples of low-price range which may contribute to the optimal trading range. Moreover, samples in the low-price range may psychologically be attractive to retail investors in aspects of affordability, numbers of share and valuation.

Table 4: Cumulative Average Abnormal Return Among Different Price Range

	CAAR			t-stat		
Event window	Low price range *(N = 49)*	Medium price range *(N = 20)*	High price range *(N = 27)*	Low price range	Medium price range	High price range
(-30,+30)	-10.55%	-12.43%	-10.02%	-0.6235	1.6069	1.7861*
(-30,-1)	-8.27%	-6.18%	-5.16%	1.0812	1.8048*	1.6987
(-1,0)	2.75%	1.61%	2.60%	1.6020	1.2662	2.0625**
(-1,+1)	4.59%	3.11%	1.07%	1.8771*	1.9073*	0.8981
(0,+1)	3.79%	2.21%	0.88%	1.9917*	1.9697*	0.8534
(+1,+30)	-4.30%	-6.63%	-7.36%	-0.4681	-1.6142	-1.9178*

*** significant at 5% level* ** significant at 10% level*

Conclusions

In general, the market has had a positive reaction to the stock split announcement for many years. The stock split is considered as a positive event that can be described by two attractive hypotheses; the Positive Signaling Hypotheses and the Optimal Trading Range Hypotheses. As stated in The Positive Signaling Hypotheses, the market views a stock split as optimistic in growth perspective. On the other side, the executive views a stock split as a mechanism to drag down the price to the optimal trading range, which connects to the second theory, the Optimal Trading Range Hypotheses. According to this theory, investors are consciously or subconsciously searching for a stock traded in the optimal range. Besides, the low-price stock is psychologically perceived as an attractive valuation, growth opportunity at affordable prices.

This study examines the abnormal return on the stock split announcement in the Stock Exchange of Thailand by using a long period of data, from 2009 to 2018, which conducts the result in all economic cycles. The result shows that the abnormal return exists because there are positive average abnormal returns (AAR) and cumulative average abnormal return (CAAR) during the event date the same as most of the previous kinds of literature. Moreover, the author uses firm size and price range to classify the samples into subgroups in order to explore the effects in other new dimensions. The later pieces of evidence in this study indicate that firm size and price range have more or less influence on an abnormal return during the announcement date. They represent growth opportunities and psychological perceptions of the market. Small-size firms tend to be reacted more positively than medium-size and large-size firms since higher growth in percentage term is expected. Additionally, the market also responds more positively to low-price stock due to consciously or subconsciously anticipation of the post-split stock price. Therefore, abnormal returns from stock splits have still existed in the stock market around the world, including in the Stock Exchange of Thailand. Investors can apply the logic behind the reaction to make them clearly understand this rationale in the world of investment.

Limitations and Future Studies

Since the longer period information about the Stock Exchange of Thailand is not publicly available to collect, therefore, two sources of the database are used to conduct this study. In addition, there is some manual data collection, including data calculation; this is because of no available data which may not perfectly tie in with another source of data. The results may be slightly different from a single source of data.

In addition, this study focuses mainly on firm size and price range classification, which are general aspects that may influence abnormal return during the announcement date, while there are other perspectives that are needed to be conducted for future studies. Good examples are stock performance after stock split, price to earnings ratio (P/E), price to book value (P/BV), event period, and reverse stock splits. Also, exploring the abnormal return of stock split in new dimensions could clarify a better understanding of the logic behind the positive reaction.

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