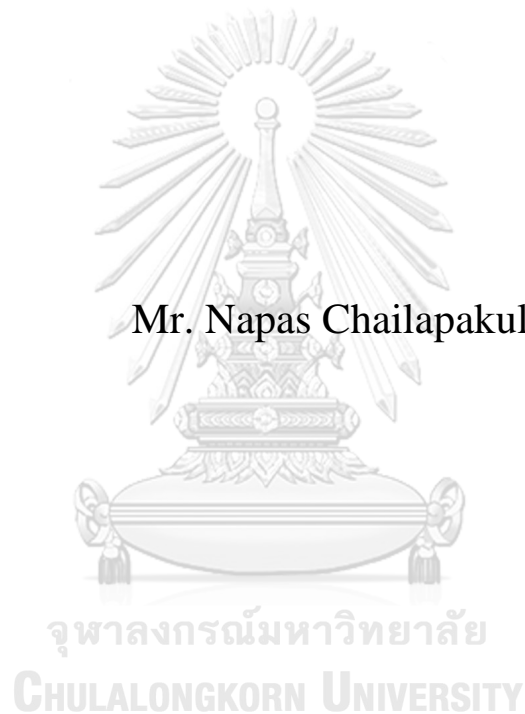


Why Stock Distribution Announcement Causes Abnormal Return



A Thesis Submitted in Partial Fulfillment of the Requirements
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วิทยานิพนธ์ฉบับนี้ศึกษาถึงสาเหตุที่ทำให้การประกาศกระจายหุ้นสู่ตลาดถึงสามารถทำให้เกิดผลตอบแทนที่มากผิดปกติในช่วงวันที่ประกาศ ผลลัพธ์จากการศึกษาในบริษัทที่เลือกใช้การแตกหุ้นเป็นเครื่องมือในการกระจายหุ้นสู่ตลาดแสดงให้เห็นว่าบริษัทมีการเพิ่มขึ้นของสภาพคล่องในการซื้อขาย โดยกลุ่มนักลงทุนกลุ่มหลักที่เพิ่มปริมาณการซื้อขายจนเป็นสาเหตุทำให้เกิดการเพิ่มขึ้นของสภาพคล่องคือนักลงทุนรายย่อยและนักลงทุนต่างชาติ ดังนั้นจึงเป็นหนึ่งในเหตุผลที่เป็นไปได้ในการก่อให้เกิดผลตอบแทนที่มากผิดปกติในช่วงวันที่ประกาศกระจายหุ้น นอกจากนี้ยังอีกสาเหตุหนึ่งคือ มีการเกิดผลตอบแทนที่มากเกินไปในวันที่มีการแตกหุ้น โดยสาเหตุที่สามารถอธิบายการเพิ่มขึ้นของผลตอบแทนในช่วงวันที่มีการแตกหุ้นกระจายสู่ตลาดนั้นเกิดจากความต้องการซื้อที่มากขึ้น แต่อย่างไรก็ตามวิทยานิพนธ์ฉบับนี้ไม่พบหลักฐานที่สนับสนุนสาเหตุทั้งสองข้างต้น ในบริษัทที่ทำการจ่ายหุ้นสู่ตลาดผ่านการจ่ายปันผลหุ้น ท้ายที่สุดในวิทยานิพนธ์ฉบับนี้ไม่พบหลักฐานที่สนับสนุนว่าการประกาศกระจายหุ้นสามารถสร้างความสนใจของตลาดได้จนนำมาสู่การเกิดผลตอบแทนที่มากผิดปกติในวันที่ประกาศ



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Napas Chailapakul : Why Stock Distribution Announcement Causes
Abnormal Return. Advisor: Asst. Prof. KANIS SAENGCHOTE, Ph.D.

This research investigated empirically why stock distribution announcement causes abnormal return. For stock split companies, the evidences support that liquidity improvement could be the first possible reason of occurrence of abnormal return during announcement date. The main groups of investors who increase their trading activity are retail and foreign investors. This study also presents another reason that is the occurrence of abnormal return during effective date. It is possible that this abnormal return comes from the increasing of buying demand flow during effective date. However, this study does not discover the evidence which support those two reasons in stock dividend companies. Lastly, this study finds no evidence to support that both of stock distribution announcement can attract market attention



Field of Study: Finance

Student's Signature

Academic Year: 2018

Advisor's Signature

.....

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While I'm doing the thesis, my aunt gets the cancer. This coincident makes me think thesis is like the cancer in some perspective. The similar thing between them is that you need to do everything to get through it without knowing those things will work for your problems or not. It doesn't mean your life will be ruin when you get the cancer or need to do thesis, but it means that you must not give up on yourself. So, I would like to dedicate this work to my aunt who give this courage to me.

Furthermore, I would like to dedicate this study to my parent who never give up believing in me. Without their support, it is impossible to get this opportunity.

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CHAPTER 1

INTRODUCTION

1.1) Background and Significance of the Problem

Researchers have long been interested in the role of stock distribution particularly in stock dividend and stock split. The stock distribution activities that have been concentrated by researchers are stock dividend and stock split. These cosmetic activities only increase the total number of share outstanding without having an influence on the proportional ownership of shareholders. However, there are some evidences from past literatures ([1] *McNichols and Dravid (1990)*, [2] *Grinblatt and Titman (1994)*) have been shown that stock market has turned out to be positive reaction when stock distribution is announced. Therefore, all the evidences above lead to the main objective of this research. What are possible reasons that cause market to react favorably when this corporate event is announced?

The first possible reason is stock distribution can attract investor's attention. This reason is supported by research of [3] *Brennan and Huges (1991)* who present that managers decide to distribute stock because they would like to improve analysts' awareness and lead to increase market value of companies. However, the company market value cannot increase by only investor's attention, but it also relies on company performance. So, if manager would like to attract investor's attention by distributing stock, their companies should also have good performance.

The reason that stock distribution company should have good performance is consistent with signaling hypothesis which claim that manager decide to distribute stock because they would like to use this corporate event for signaling good company performance. However, when researchers attempt to compare companies' performance between stock distribution and non-stock distribution company, the results are still unclear. For example, [4] *Lakonishok and Lev (1987)* who analyzed company's performance by using earnings and cash dividend as proxies presenting that stock dividend seems to be a signal of past performance more than future performance

In Thai stock market, investors need to trade in round lot. This regulation causes friction for trading stock, especially, with investors who have limitation of wealth. Therefore, when managers decide to distribute stock by splitting or paying stock dividend, it will make stock easier to trade because when the number of shares in market increases, stock price will turn into a lower price range. By this result, stock distribution will mitigate trading friction. On the other hand, it may cause “liquidity improvement”. In the end, this liquidity improvement may be the second possible reason that makes market react favorably when stock distributions are announced.

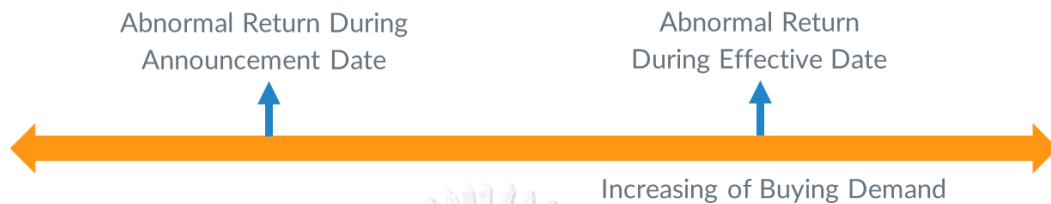
This concept of liquidity improvement that comes from the reduction of trading friction is consistent with optimal price hypothesis. It is claimed that managers decide to distribute stock since they would like to turn stock price into optimal price range. In order to find evidence that supports the transformation of optimal price range, this hypothesis also focuses on liquidity because in optimal price hypothesis, it is believed that when stock price turn into optimal range, investor will increase their trading activity which also lead to liquidity improvement.

The third possible reason that causes market to react favorably with stock distributions announcement also comes from the reduction of stock price because this reduction can lead not only to liquidity improvement but also to increase buying demand flowing into stock. Seeing that before stock distribution effective date, there are some investors who would like to be shareholders, but they have a limitation of wealth which makes them cannot afford this stock. Therefore, when price turns into lower price, it is a good opportunity for them to buy stock. At the end, this reason may cause rising price during effective date. By this mechanism, it is possible to cause abnormal return during announcement date since some group of investors who have enough power to afford decide to buy stock during this period because they know that stock will give abnormal return during effective date.

Figure I

Time Line of Announcement and Distribution Date

This time line shows the process of stock distribution. Managers need to announce that their companies will distribute the stock on the announcement date. Then, the number of share outstanding will increase in the effective date



This assumption of stock distribution that causes buying demand flow is also consistent with optimal price hypothesis. Since, the buying demand flow which is assumed to come from individual investors who have less wealth than other groups. Similarly, by optimal price hypothesis, it is showed that managers would like to turn stock price into optimal price because they want to attract investors especially individual investors since they believe that individual investors do not have enough power to control companies. However, this explanation is still unclear because normally the proportion of institutional ownership will decrease after it splits, it increases instead. ([5] *Dennis and Strickland (2003)*, [6] *Maloney and Mulherin (1992)*). All above leads to the question that if market really has abnormal return during effective date, which group of investors buy stock in that period.

1.2) Research Objective

To examine what are the possible reasons that cause market to react favorably during stock distribution announcement date.

1.3) Research Hypothesis

1.3.1) Increasing of Investor's Attention

The first possible reason which causes abnormal return during announcement date is the increasing of investor's attention. So, we would like to present the first hypothesis to support this reason.

H1: If stock distribution announcement can attract investor's attention, the number of recommendations that issue by analysts who follow stock distribution should increase.

The reasonable objective to attract investor's attention is that manager would like to increase company market value. However, the company market value cannot be increased only by investor's attention, but it also relies on company performance. By this condition, we will compare the performance between stock distribution and non-stock distribution company before finding the evidence to support this hypothesis

1.3.2) Liquidity Improvement

When stock is distributed into market, stock price will decrease due to the increasing number of shares outstanding. This procedure leads to reduce some portion of trading friction because this lower stock price make itself to be traded easier. As a result, investor will increase their trading activities which cause liquidity improvement. To support the liquidity improvement that it can be possible reason to make market react positively, we present the second hypothesis

H2: If stock distribution can lessen some portion of trading friction, we should discover this liquidity improvement by observing abnormal trading volume during effective date.

Since, each group of investors has different level of wealth. So, trading friction which come from high price may affect only investor who has limitation of wealth. Then, when this friction is reduced from stock distribution, this group of investors should increase their trading activities. However, it is possible that other groups may also increase their trading activities because when a group of investors who has limitation of wealth increase their trading activity and provides liquidity to market. This liquidity may relieve other trading friction such as slippage for other groups of investors. So, this is interesting question, which group of investors increase their trading activity during effective date.

H3: If any investors obtain benefit from the reduction of trading friction, we should discover their increasing of trading activities after stock price is adjusted into the lower range.

Seeing that, when managers decide to distribute stock, price is affected directly. So, there is interesting questions which price range causes investors to increase their trading activities. whether this price range need to be the lowest price range or not.

H4: If any price range cause investors to gain benefit from the reduction of trading friction, this price range should have correlation with the increasing of investors trading activity.

1.3.3) Increasing of Buying Demand

The reduction of trading friction comes from the decreasing price of stock market. The consequences of this reduction are not only liquidity improvement but also the increasing of buying demand because when price turn into lower range, this is an opportunity to buy this lower price stock for investor who face with trading friction. So, we present the fifth hypothesis to support this argument

H5: If any group of investors who have been limited by their wealth obtain an opportunity to buy stock from price reduction, we should discover their abnormal buying demand after stock price is adjusted into lower range.

Seeing that, the result from this section will reveal which group of investors decide to buy stock after effective. Then, this result can answer the question: whether stock distribution is a useful device for managers who would like to attract some group of investors or not.

CHAPTER 2

LITERATURE REVIEW

The previous stock distribution researches are classified by explanations of why manager decide to distribute stock. These explanations are divided into two major hypotheses. The first is optimal price hypothesis and the second is signaling hypothesis. Both hypotheses give a fundamental concept for presenting possible reason which cause abnormal return during stock distribution announcement date.

2.1) Optimal Price Hypothesis

Optimal price hypothesis is one of the major hypotheses that tries to explain the aim of stock distribution and change in market activities around effective date. This hypothesis suggests that managers employ stock distribution to restore their price to optimal price range which is supported by the study of [7] *Angel (1997)*. This research shows that the trading ranges of stock around the world tends to be stable over time. Moreover, the average NYSE stock price from 1943 to 1994 remained almost the same. Also, when stock price rises above a country's usual range, companies often distribute stock to restore their price to usual range.

[4] *Lakonishok and Lev (1987)* compare stock price by divided into two groups: stock distribution companies and non-stock distribution companies. They find that during four years before splitting, price of splitting companies had become significantly higher than non-splitting companies and during the post-split period the average price gap between the two groups was quickly narrow. This result also supports optimal price hypothesis. Furthermore, [8] *Baker and Gallagher (1980)* who do survey managers' opinions of stock split. The results of surveying show that the majority of financial executives agree that stock splits are a useful device to bring the stock price into an optimal price range and it is attractive to investors who are usually thought to be individual investors.

Moreover, managers want to attract individual investors by bring stock price into (lower) optimal price because an increasing in size of company's investors base may improve analysts' awareness and lead to increase market value of companies

based on [3] *Brennan and Huges (1991)* idea who present a positive relationship between the increase in number of analysts following split. [9] *Dyl and Elliot (2006)* also find the number of shareholders of splitting companies is 59% more than non-splitting companies during the first four years after splitting. This evidence supports the concept that managers use stock distribution to manage company's prices level in order to increase company's investors base and company's value. Furthermore, [10] *Powell and Baker (1993)* suggest that managers want to diffuse ownership because individual investors do not have enough power to control companies. However, some prior researches also reported that proportion of institutional ownership is increased, rather than decreased, after split. ([5] *Dennis and Strickland (2003)*, [6] *Maloney and Mulherin (1992)*) Therefore, it is possible to say that not only individual investors, but also other groups prefer lower optimal range.

In order to find the evidence about whether stock distribution can return price to optimal range, existing researches will focus on liquidity improvement because they believe that if stock distributions can restore stock price to an optimal range, the liquidity for trading may rise. Since an (lower) optimal price can make investors afford to buy round lots easily. However, this explanation for liquidity improvement seem to be unclear. For example, [11] *Nguyen and Wang (2013)* find an increasing number of individual trades in China, [12] *Lin Singh and Yu (2009)* also support the liquidity improvement by examining trading continuity. Therefore, the research that uses the number of trades as a proxy of liquidity will find the improvement. However, the reports which employ dollar volume or volume as proxy ([13] *Copeland et al. (1979)*, [14] *Lamoureux and Poon (1987)*) show reduction on liquidity. Therefore, the evidence of liquidity improvement seems to be sensitive to use proxy.

2.2) Signaling Hypothesis

Signaling hypothesis is another important hypothesis. This hypothesis argues that managers decide to distribute stock for signaling about company's future performance which it is supported by many studies. [15] *Grinblatt, Masulis and Titman (1984)* display that an announcement of stock split generates abnormal return about 3% which is consistent with Study of [16] *Woolridge and Chambers (1983)* who mentioned that market usually reacts unfavorably to reverse-split announcement.

Moreover, [17] *Foster and Vickrey (1978)* also find that stock dividend announcements signal positive information to investors by examining aggregate market reaction around the declaration dates. Lastly, [18] *Swanson et al. (1993)* show that the stock split announcement effect of poor-information companies is greater than rich-information companies.

However, [19] *Nayak and Prabhala (2001)* examine whether split announcement signal information about future dividend and conclude that stock split explains only a little about future dividend change. This study is consistent with [11] *Nguyen and Wang (2013)* who can't find any proof that stock dividends in China signaled information for the first and second year after the announcement year of stock dividends. Moreover, [4] *Lakonishok and Lev (1987)* who analyze company's performance by using earnings and cash dividend as proxies indicate that stock dividend seems to be a signal of past performance since the company's performance in post-announcement date has slightly different from company's performance control group comparing to the pre-announcement period. As a result, it is still questionable about what stock distribution really signal.

CHAPTER 3

DATA

3.1) Price, dollar volume, market price index, financial data

Daily stock prices, trading volume and market index are obtained from Thomson Reuter data stream. Financial data such as total asset, book to market ratio net profit margin and payout ratio are also retrieved from data stream.

3.2) Stock distribution announcement date stock distribution effective date

Historical stock distribution announcement and effective date for each listed company have been retrieved from SET Smart between 2011 and 2015 and exclude data which coincides with other corporate events such as cash dividends to avoid confounding effect which is raised by [20] Miller and Scholes (1982). Furthermore, we exclude some companies with no data on stock prices, from previous year to the following year after the announcement or effective date.

3.3) The Number of Recommendation

The number of recommendations that issue by analysts between year 2010 and 2016 are retrieved from Thomson Reuter data stream.

3.4) Market microstructure data

Deal volume, buy volume, sell volume and deal price of transactions which are separated into individual, institutional and foreign investors have been collected from micro market data which have been provided from Stock exchange of Thailand (SET). This unique dataset are precise proxies of each group of investors' activities. Applying this dataset will avoid problems of misinterpretation. For example, using a large size trading which refers to a proxy of institutional trading will ignore the ability of institutional traders to split their size of trading ([21] *Lee and Radhakrishna (2000)*).

Moreover, these unique datasets provide ability to calculate a buy-sell imbalance. This proxy is a representative of investors' direction to buy or sell stock

that are useful to test hypothesis which focuses on the investor's reaction to stock distribution event.



CHAPTER 4

METHODOLOGY

In the first section of methodology, we start the test in order to ensure that market has positive reaction with stock distribution announcement. We will study on both stock split and stock dividend by following [11] *Nguyen and Wang (2013)* and apply a standard event study methodology to observe abnormal return around announcement. We compute abnormal return based on parameter from market model. The estimation period is day 270 through day 21 before announcement date.

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{t,i} \quad (1)$$

Where (1) $R_{i,t}$ is the return of stock i on day t . (2) $R_{m,t}$ is the return from SET index on day t

The abnormal return on an event day is the difference between actual return on that day and the expected return which is calculated by market model.

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t}) \quad (2)$$

Then, we compute sample average abnormal return in 10 days consecutively before and after announcement date. Then, we also compute cumulative abnormal return (CARs) in different event windows (For example, [-1,0], [-2, +2], [-5, +3], [-10, +5]) Then, we employ t-test on these data and expect results to have a significance greater than zero.

4.1) Market Awareness

To support the first hypothesis. It is claimed that managers would like to attract investor's attention because they would like to increase company market value. However, company market value also reflects company performance. As a result, if managers decide to distribute stock in order to improve company market value, their companies should have good performance.

Therefore, we will apply methodology of [4] *Lakunishok and Lev (1987)* to create control groups of stock distribution companies. Specifically, we create control groups of stock split company by these following criteria: (1) companies in the same

industry as the treatment group which are stock split companies between year 2011 to 2015 (2) total asset is the closest to the treatment company's total asset in previous year from the effective date (3) control companies must not split stock over five years of sample period. Next, we also create control groups of stock dividend company but we use the a few different criteria that are (1) companies that are in the same industry as the treatment group which are stock distribution companies between year 2011 to 2015 (2) total asset is the closest to the treatment company's total asset in previous year from the effective date (3) control companies must not pay stock dividend over five years of sample period.

We will retrieve dataset which display company performance from both groups. The first proxy is net profit margin which is a representative of performance for generating revenue compare to their sales. Another proxy is Payout ratio which present company's potential to give profit back to investors. Then, we will compute growth rate of operating performance due to [22] *Barber and Lyon (1996)* reveals that test statistics using changes in operating performance are more powerful than those using levels. This growth rate will be computed before and after announcement date in many event windows. (i.e. 0-3, 3-6, 6-9, 9-12, 0-12 month)

Then, we calculate the cross-sectional average for each level and each growth rate Then, we will compare these proxies of performance between treatment and control group by using two-sample t-test. The results are expected to be greater than zero.

Moving to the main analysis of this section, we would like to find the evidence to support that stock distributions can attract investor's attention because this increasing of investor's attention might be one of the possible reasons which cause abnormal return during announcement date. In this section, we will employ the number of analysts who follow company as a proxy of investor's attention.

Then, to compare the changing of investor's attention between stock distribution and non-stock distribution company. So, we also apply same methodology of [4] *Lakunishok and Lev (1987)* to create group of non-stock distribution company.

In this section, we use number of recommendations which are published by analysts who follow the companies to be a proxy of analyst's attention. Then, we employ Difference in Difference model in order to present whether stock distribution can influence an increasing number of recommendations or not.

$$Y_i = \beta_0 + \beta_1 D_i^{Post} + \beta_2 D_i^{SP} + \beta_3 D_i^{Post} D_i^{SP} + \beta_4 CD_i + \beta_5 IND_i + \varepsilon_i \quad (3)$$

Where (1) Y_i is the number of recommendations of company i . (2) D_i^{Post} is a binary variable which equals to one if the number of recommendations is collected after stock distribution announcement date. (3) D_i^{SP} is a binary variable which equals to one if the number of recommendations comes from the treatment group. (4) CD_i is binary variable which equals to one if during one year before month of announcement, company i pay cash dividend. We use CD_i as a control variable because we believe that companies that pay cash dividend will obtain investor's attention more than non-cash dividend company. (5) IND_i is binary variable which equals to one if during one year before month of announcement, company i is included in SET50 index. We use IND_i as a control variable because we believe that companies which are included in SET50 index will obtain investor's attention more than companies that are not in index.

We will do this analysis on both stock split and stock dividend announcement and expect that β_3 should be significantly greater than zero since this coefficient exposes that there is the difference of an increasing the number of recommendations of stock distribution and non-stock distribution companies.

4.2) Liquidity improvement

The objective of this section is to study liquidity improvement during effective date. Since we have assumption that stock distribution will reduce trading friction. So, after effective date, investors' trading activities of stock distribution company should increase and lead to liquidity improvement. As a result, this can be a possible reason which makes market react favorably when stock distributions are announced. Moreover, the study of liquidity improvement is consistent with optimal price hypothesis which claims that stock liquidity will increase when stock price is turned into optimal price range.

We start to answer the Second hypothesis by observing liquidity during effective date by using standardized dollar volume for creating a proxy of liquidity. We standardize dollar volume by average trading volume in order to compare daily trading volume with the average trading volume before effective date (between day 270 to day 21 before effective date).

$$\text{Dollar Volume}_{i,d} = \text{Volume}_{i,d} * \text{Stock price}_{i,d} \quad (4)$$

$$\text{Standardize Dollar Volume}_{i,d} = \frac{\text{Dollar Volume}_{i,d}}{\text{Average Dollar Volume}_i} \quad (5)$$

Where (1) $\text{Volume}_{i,d}$ is a number of shares of stock i which are traded on day d . (2) $\text{Stock price}_{i,d}$ is a price of stock i on day d . (3) $\text{Average dollar volume}_i$ is average daily dollar volume of stock i between day 270 and 21 before effective date.

Then, we apply methodology of [23] *Kaniel, Saar and Titman (2008)* in order to observe abnormal trading volume which is a representative of liquidity improvement around stock distribution effective date. So, we define $\text{ATV}_{i,d}$ as abnormal trading volume for stock i which is traded on day d as: -

$$\text{ATV}_{i,d} = \text{Standardize Dollar Volume}_{i,d} - \frac{1}{T} \sum_{\text{Day 270 to 21 before Effective Date}} \text{Standardize Dollar Volume}_{i,d} \quad (6)$$

We also define cumulative abnormal trading volume over the period $[t,T]$ by using dollar volume as:

$$\text{CATV}_{[t,T]}^i = \sum_{d=t}^T \text{ATV}_{i,d} \quad (7)$$

Where the period is defined relative to the effective date (day 0)

Then, we compute ATV for each event in 21 days consecutively before and after effective date. After that, we also compute CATV for each event by focusing on effect which occurs during effective date (for $[-5, -5]$, $[-3,3]$ and $[0,1]$) and effect which occur before or after effective date (for before: $[-21, -1]$, $[-21, -10]$, $[-10, -1]$ for

after: [1,10], [10,21], [1, 21]). Then, we compute the sample average for each variable and test them by using a t-test. The results are expected to be greater than zero.

Since existing studies present confounding empirical result due to the sensitivity of proxies. For example, some studies that use volume as the proxy of liquidity find that it decreases after the split ([14] *Lamoureux and Poon (1987)* and [24] *Conroy et al. (1990)*). However, the other study ([11] *Nguyen and Wang (2013)*) that uses the number of trades as proxy of liquidity reports the increase of liquidity after stock distribution. So, this research will try to examine liquidity improvement by using ILLIQ which is presented by [25] *Amihud (2002)*. This alternative measurement of illiquidity can be interpreted as the daily price responses to one dollar of trading volume. This proxy is consistent with [26] *Kyle's (1985)* concept of illiquidity that is the response of price to order flow Then, ILLIQ can be calculated by this formula:

$$ILLIQ_i = 1/D_i \sum_{t=1}^{D_i} |R_{i,d}|/VOLD_{i,d} \quad (8)$$

Where (1) D_i is the number of days when trading volume is positive for stock I (2) $R_{i,d}$ is the return on stock i on day d (3) $VOLD_{i,d}$ is the respective daily dollar volume of stock i on day d

After that, we calculate Δ ILLIQ which is the difference of ILLIQ before and after the effective date. The period of ILLIQ' event windows before and after the effective date for each Δ ILLIQ will have the same amount of days. (10, 20, 40, and 60 trading day) Then, we calculate the sample average for each difference on both stock split and stock dividend and test them by using a t-test and expect to have a significance greater than zero.

Next, to answer the third hypothesis, this section will examine which group of investors obtain the benefits from price reduction after stock distribution effective date by using the assumption about the any groups of investors that gain this benefit will increase their trading activity. On the other hand, this group of investors will provide liquidity during effective date.

In this section, we employ standardize summation of buy and sell dollar volume of each group of investors (individual, institutional and foreign investors)

which refers to a standardize summation of buy and sell dollar volume of all investors' transaction in each day. So, we will calculate this variable by following this equation.

$$\begin{aligned} & \text{Summation of} \\ & \text{Buy and Sell Dollar Volume}_{i,d,j} \\ & = \sum_{\substack{\text{Transactions} \\ \text{which are} \\ \text{executed by investor} \\ \text{group } j \text{ on day } d}} (\text{Buy Vol}_{i,t,j} * \text{Stock price}_{i,t} + \text{Sell Vol}_{i,t,j} * \text{Stock price}_{i,t}) \end{aligned} \quad (9)$$

$$\begin{aligned} & \text{Standardize Summation of} \\ & \text{Buy and Sell Dollar Volume}_{i,d,j} \\ & = \frac{\text{Summation of Buy and Sell Dollar Volume}_{i,d,j}}{\text{Average Summation of Buy and Sell Dollar Volume}_{i,d,j}} \end{aligned} \quad (10)$$

Where (1) Buy Volume_{i,d,j} is a number of shares of stock i which are bought by investors of group j on transaction t. (2) Sell Volume_{i,d,j} is a number of shares of stock i which are Sold by investors of group j on transaction t. (3) Stock price_{i,t} is a price of stock i on transaction t.(4) Average summation of buy and sell dollar volume_i is average daily summation of buy and sell dollar volume of stock i between day 270 and 21 before effective date.

Then, we still apply [23] *Kaniel, Saar and Titman (2008)* to observe abnormal trading volume around stock distribution effective date. This section will be analyzed on both stock split and stock dividend, but it will be focused deeply on trading activity for each group of investors.

We define ATV_{i,d,j} as abnormal trading volume for stock i which is traded by investor group j on day d

$$ATV_{i,d,j} = \frac{\text{Standardize Summation of Buy and Sell Dollar Volume}_{i,d,j}}{\text{Standardize Summation of Buy and Sell Dollar Volume}_{i,d,j}} - \frac{1}{T} \sum_{\substack{\text{Day 270 to 21 before} \\ \text{Effective Date}}} \text{Standardize Summation of Buy and Sell Dollar Volume}_{i,d,j} \quad (13)$$

We also calculate cumulative abnormal trading volume over the period [t,T] for each group of investors as

$$CATV_{[t,T]}^{i,j} = \sum_{d=t}^T ATV_{i,d,j} \quad (14)$$

Where the period is defined relative to the effective date (day 0)

Then, we compute ATV for each event in 21 days consecutively before and after effective date. After that, we also compute CATV for each event by focusing on effect which occurs during effective date (for [-5, -5], [-3,3] and [0,1]) and effect which occur before or after effective date (for before: [-21, -1], [-21, -10], [-10, -1] for after: [1,10], [10,21], [1, 21]). Then, we compute the sample average for each variable and test them by using a t-test. The results are expected to be greater than zero.

Next, to answer the question about which price range will affect investors' trading activity. This section will start analyzing by classifying cumulative abnormal trading volume which results from the previous section by looking at price after stock distribution and matching them with price range. By using this price range, we will classify price after effective into three groups which are low price, middle price and high price.

After that, we present regression models which will be applied on both stock split event and stock dividend event for observing the relationship between price after effective date and investors' trading activity. The model is

$$CATV_{[t,T]}^{i,j} = \beta_0 + \sum_{i=1}^2 \beta_i Post\ Price\ Range_i + \beta_4 M/B_{-1} + \beta_5 ASSET_{-1} + \varepsilon_t \quad (15)$$

Where (1) $CATV_{[t,T]}^{i,j}$ is a cumulative abnormal trading volume over the period [t,T] by using standardize summation of buy and sell dollar volume. (2) $Post\ Price\ Range_i$ ¹ is binary variable which equals one if post stock price is in that range. The source of this range come from the objective that we would like to classify the data by price after effective into three group equally. Since, in this analysis, we will define low range as the default range. β_0 will be a coefficient of this range. So, β_1 of post price range 1 will show the difference between coefficient of middle range and default

¹ Price range for stock split event -Low range: Price is lower than 2.32, Middle range: Price is between 2.32 to 9.7, High range: Price is higher than 9.7

Price range for stock dividend - Low range: Price is lower than 4.92, Middle range: Price is between 4.92 to 11.1, High range: Price is higher than 11.1

range and β_2 of post price range 2 will show the difference between coefficient of high range and default range. (3) M/B_{-1} is the market to book ratio of equity in previous year. We employ it as a control variable of undervaluation since M/B ratio can contain information on the company's growth options introduced by [27] *Opler and Titman (1993)*, [28] *Ikenberry et al (1996)*. Lastly, (4) $ASSET_{-1}$ is the natural logarithm of total assets in previous year. We employ it as a control variable of information asymmetry since less information is available for small companies as suggested by [29] *Brennan and Copeland (1988)*.

We expect that the coefficients of post price range which has an effect on investors' trading activity will be significantly greater than zero.

4.3) Increasing of buying demand

From the fifth hypothesis, when stock price decrease, it is easier to buy the round lot especially for investors who have limitation of wealth. Therefore, after the effective date, this limitation will decrease and may lead to buying demand.

To find the evidence which support this hypothesis, we present buy-sell imbalance to be a proxy in this analysis since this variable gives us an aspect about investor's direction to buy or sell.

$$Imbalance_{i,d,j} = \frac{Buy\ dollar\ volume_{i,d,j} - Sell\ Dollar\ Volume_{i,d,j}}{Buy\ dollar\ volume_{i,d,j} + Sell\ Dollar\ Volume_{i,d,j}} \quad (16)$$

Where (1) Buy dollar volume $_{i,d,j}$ is a total buy dollar volume of stock i which is executed by investor group j on day d times stock price on day d. (2) Sell dollar volume $_{i,d,j}$ is a total sell dollar volume of stock i which is executed by investor group j on day d times stock price on day d.

To test hypothesis 5, we still apply [23] *Kaniel, Saar and Titman (2008)* to observe abnormal net trading each group of investors around stock distribution effective date we will analyze on both stock split and stock dividend.

We define $ANT_{i,d,j}$ as abnormal net trading for stock i which is traded by investor group j on day d

$$ANT_{i,d,j} = Imbalance_{i,d,j} - \frac{1}{T} \sum_{\substack{\text{Day 270 to 21 before} \\ \text{Effective Date}}} Imbalance_{i,d,j} \quad (17)$$

We also define cumulative abnormal net trading over the period [t,T] for each group of investors as

$$CANT_{[t,T]}^i = \sum_{k=t}^T ANT_{i,d,j} \quad (18)$$

Where the period is defined relative to the effective date (day 0)

Then, we compute ANT for each event in 21 days consecutively before and after effective date. After that, we also compute CANT for each event by focusing on effect which occurs during effective date (for [-5, -5], [-3,3] and [0,1]) and effect which occur before or after effective date (for before: [-21, -1], [-21, -10], [-10, -1] for after: [1,10], [10,21], [1, 21]). Then, we compute the sample average for each variable and test them by using a t-test. The results are expected to be greater than zero.

CHAPTER 5

EMPIRICAL RESULTS

5.1) Abnormal Return During Announcement Date

To present the reaction of investors in Thailand's stock market with the stock distribution announcement. We observe the stock return during the announcement date. the result² indicates that both stock split and stock distribution companies have abnormal return during the announcement date. For stock split, the abnormal return occurs from 3 days before announcement date to 1 day after announcement date. For stock dividend, the abnormal return occurs from 4 days before announcement date to 1 day after announcement date. This evidence shows the possibility that some investors know that company will have an announcement before the public. This possibility leads to information leaking and causes abnormal return before announcement date. Lastly, we also computed cumulative abnormal return. The results of both stock split and stock dividend are greater than zero in every event window. So, all these results lead to conclusion that the investors in Thailand's stock market also react positively with stock distribution announcement.

Table I

Average Cumulative Abnormal Return during Announcement Date

The daily abnormal return is the difference between the actual return and its expectation which is computed by market model (The estimation period is day 270 through day 21 before announcement date). The cumulative abnormal return of each event is computed in various event windows. The first reported result in this table is the average of cumulative abnormal return of both stock split and stock dividend companies during the announcement date. The second is the result of significant level by employing T-test. This table will show * and **, if the daily abnormal return is greater than zero at the significant level of .05 and .01 respectively.

Event Windows	Stock Split	Stock Dividend
Day -1 to Day 0	4.03**	1.80**
Day -2 to Day 2	6.05**	3.08**
Day -5 to Day 3	7.98**	4.00**
Day -10 to Day 5	8.63**	4.41**

² See appendix1 for additional information about daily abnormal return for various before and after announcement date.

5.2) Increasing of Market Awareness

Since, this research is to find the evidence that support the hypothesis of stock distribution announcement that can attract investor's attention. By Comparing the performance between stock distribution and non-stock distribution companies will support this hypothesis because if a company performance is better than any others, it is reasonable for manager to decide to attract market attention.

The performance of stock distribution company will be retrieved from companies that announce to split their stocks or pay stock dividend between year 2011 to 2015. We need to compare this performance with non-stock distribution companies. Therefore, we create the group of control company by applying methodology of [4] *Lakonishok and Lev (1987)*. In this summary statistic, we use net profit margin and payout ratio to be representatives of company performance.

The result³ indicates that there is no difference between performance of stock split companies and their control group. However, when comparing between stock dividend companies and their control companies, the result of net profit margin shows that stock dividend companies have better performance than their control group. However, this superior performance is the performance before announcement date. This result is consistent with the study of [4] *Lakonishok and Lev (1987)* who present that stock dividend seems to be a signal of past performance more than future performance. Moreover, the result of payout ratio indicates that, before announcement date, stock dividend companies paid cash dividend less than their control group significantly. By all these evidences, it cannot be concluded that both stock split and stock dividend companies have performance better than control group after the announcement date.

³ See appendix2 for additional information about the growth of performance.

Table II

Average Net Profit Margin for Various Pre and Post Stock Distribution Announcement Date

This table shows the average of net profit margin of treatment and control group of both stock split and stock dividend companies. The treatment group is the group of stock distribution companies in the sample period. For control group, this is the criteria for creating. (1) companies in the same industry as the treatment group (2) total asset is the closest to the treatment company's total asset in previous year from the effective date (3) control companies must not distribute stock over five years of sample period. This table also presents the level of the difference of net profit margin between treatment and control group. By employing T-test, if this difference is greater than zero at the significant level of .05 and .01, This table will show * and ** respectively.

Period (In Quarter)	Stock Split Company				Stock Dividend Company			
	Pre		Post		Pre		Post	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Now	10.05	9.79			13.74**	6.21		
1	10.61	7.56	8.27	9.46	13.50*	8.04	12.02	5.65
2	10.68	8.00	8.90	8.98	12.89	9.75	11.23	5.01
3	7.18	7.87	13.99	9.59	9.49	11.25	11.10	4.36
4	10.90	8.66	15.90	11.41	9.74	15.62	10.87	5.98
8	8.40	8.31	2.15	7.27	10.59	17.49	9.00	7.83

Table III

Average Payout Ratio for Various Pre and Post Stock Distribution Announcement Date

This table shows the average of payout ratio of treatment and control group of both stock split and stock dividend companies. The treatment group is the group of stock distribution companies in the sample period. For control group, this is the criteria for creating. (1) companies in the same industry as the treatment group (2) total asset is the closest to the treatment company's total asset in previous year from the effective date (3) control companies must not distribute stock over five years of sample period. This table also presents the level of the difference of payout ratio between treatment and control group. By employing T-test, if this difference is greater than zero at the significant level of .05 and .01, This table will show * and ** respectively.

Period (In Year)	Stock Split Company				Stock Dividend Company			
	Pre		Post		Pre		Post	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Now	44.11	37.95			36.95	42.47		
1	38.30	37.79	42.99	37.68	24.37**	37.41	39.60	40.90
2	40.06	40.41	42.21	40.21	42.13	38.54	40.14	41.19

Next, for answering the first hypothesis which claim that stock distribution can attract market attention. We started our main analysis by comparing number of recommendations between month before and after Month of Announcement date. We did this analysis on group of stock split companies, group of stock dividend company

and their control groups. However, the result⁴ indicates that there is no improvement with number of recommendations.

Moreover, we employed difference in difference model to detect the improvement of market attention, but the result also indicates that there is no significant changing. So, in this research, we do not discover the evidence which can support the argument of first hypothesis.

However, in this difference in difference model, we have control variable which will equals to one, if, during one year before collecting number of recommendations, the companies who own that recommendation have cash dividend payment. The result shows that this control variable has significant correlation with number of recommendations.

The possible reason of paying stock dividend is company manager may know that analyst's attention has correlation with their decision of dividend payment. Therefore, they may want to continue their dividend payment. This evidence is consistent with summary statistic of company performance and signaling hypothesis. However, it does not signal about better company performance in the future, but it signals that company do not have a bad performance and still can pay the dividend.

Table IV

Coefficient of Each Variable in Difference in Difference Model

To measure the change of the number of recommendations which is the proxy of market's attention, the difference in difference (DID) regression model is employed in this analysis. The equation is $Y_i = \beta_0 + \beta_1 D_i^{Post} + \beta_2 D_i^{SP} + \beta_3 D_i^{Post} D_i^{SP} + \beta_4 CD_i + \beta_5 IND_i + \varepsilon_i$ Where (1) Y_i is the number of recommendations of company i. (2) D_i^{Post} is a binary variable which equals to one if the number of recommendations is collected after stock distribution announcement date. (3) D_i^{SP} is a binary variable which equals to one if the number of recommendations comes from the treatment group. (4) CD_i is binary variable which equals to one if during one year before month of announcement, company i pay cash dividend. (5) IND_i is binary variable which equals to one if during one year before month of announcement, company i is included in SET50 index. This table shows coefficient of each variable in the DID equation. If its p-value is significant at level of .05 and .01. This table will show * and ** respectively.

Stock Split Company						Stock Dividend Company					
Int	D ^{post}	D ^{Sp}	D ^{Post} D ^{SP}	CD	IND	Int	D ^{post}	D ^{Sp}	D ^{Post} D ^{SP}	CD	IND
0.95	-0.06	-0.22	-0.15	0.16	8.60**	0.57	-0.08	0.18	0.24	1.94**	7.26**

⁴ See appendix3 for additional statistics about the difference of number of recommendations.

5.3) Summary Statistics of Stock Price after Effective Date and Investor Trading Behavior

Form the second and third possible reason for explaining why stock distribution announcement causes abnormal return, this research aims to studied about the effect of trading friction reduction on each group of investors. Therefore, we would like to present the summary statistics that are consistent with stock price after effective and investors trading behavior.

5.3.1) Proportion of Daily Trading Volume⁵

In order to indicate which group of investors is the majority trader in stock split or stock dividend company, we will compute sum of daily buy and sell dollar volume of each group of investors. In the next step is to compute the average this daily total dollar volume by using the data between day 41 to 21 before effective date. Then, we compare these averages among these groups of investors. The result shows that the highest significant proportion is a retail investor (Stock Split – 76.53% Stock Dividend – 70.87%). The second significant proportion is institutional investors (Stock Split – 11.77% Stock Dividend – 14.36%) and the third is foreign investors (Stock Split – 11.66% Stock Dividend – 14.18%). Therefore, this research will focus on these three groups of investors

5.3.2) Price Range and investors' trading behavior⁶

To find the relationship between stock price and trading behavior of each group of investors in the stock exchange of Thailand. We computed summation of buy and sell daily dollar volume of each group of investors by using data between year 2011 and year 2015 Then, we classified this summation into each different price range⁷ and calculated the average of this daily summation. At the end, we compared this average among group of investors in each price range. This summary statistics

⁵ See appendix4 for additional statistics about the proportion of daily trading volume.

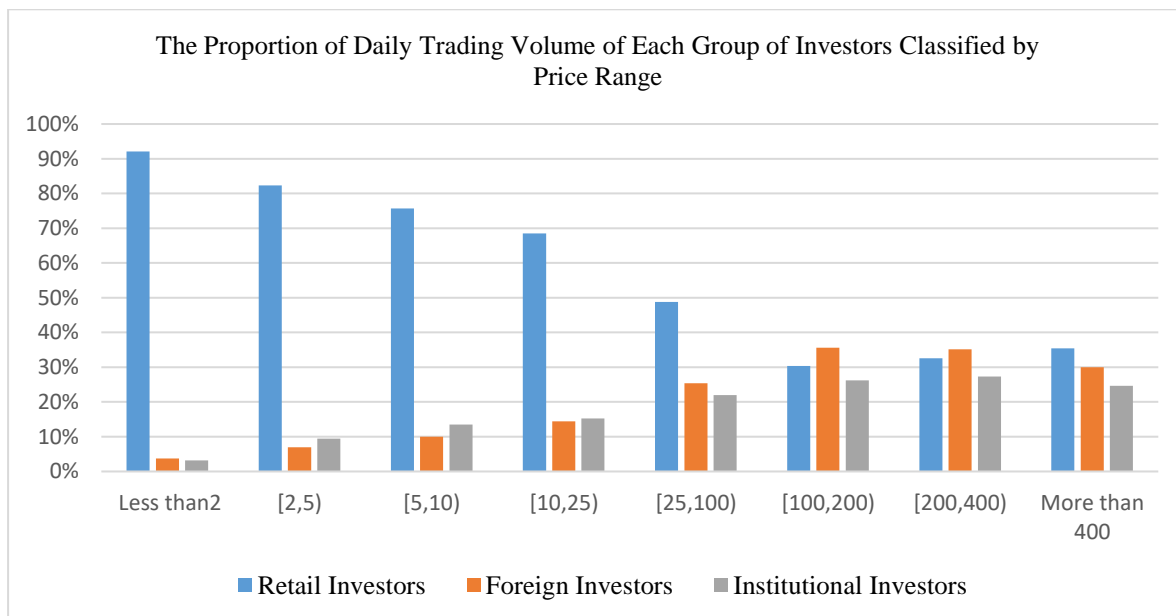
⁶ See appendix5 for additional statistics about the price range and investors' trading behavior

⁷ We apply price range which is provided by stock exchange of Thailand. The minimum price movement prescribed by this price range.

Figure II

The Proportion of Daily Trading Volume of Each Group of Investors Classified by Price Range

This table displays the proportion of average summation of buy and sell dollar volume for presenting which group of investors is the majority group of traders in these stock distribution companies. This average is calculated by using data between day 41 and day 21 before effective date.



5.3.3) Stock Price Before and After Effective Date⁸

We compared between stock price before and after effective date. For stock split companies, the data indicate that there is a significant difference of price between these two periods. However, in stock dividend companies, we didn't find this difference. So, it is possible that the reduction of trading friction occurs only in the stock split companies. Moreover, we have a notable point in this summary statistics there is price after effective of stock split companies is close to price of stock dividend company. This evidence indicates that even if splitting stock can reduce more trading friction than paying stock dividend, the rest of trading friction after splitting is quite the same as paying stock dividend.

⁸ See appendix6 for additional statistics about the stock price before and after effective date.

5.4) Liquidity Improvement

5.4.1) Liquidity improvement of stock split and stock dividend⁹

We studied liquidity improvement of stock distribution company by using standardize dollar volume to be a proxy of liquidity. In stock split, the result¹⁰ indicates that it has a significant increasing of trading activity. We discover that abnormal standardize dollar volume begins on 4 days before effective date until 20 days after effective date. This evidence shows that increasing of liquidity does not appear only during effective date but still exist until at the end of event windows. Moreover, we also calculated cumulative abnormal standardize dollar volume. In stock split, the cumulative in every event window are significantly greater than zero.

So, this evidence is consistence with second hypothesis which suggest that when price turn into lower range after effective date, it will mitigate of trading friction and lead to increasing of trading activity.

However, in stock dividend company, we do not find any evidence which support the liquidity improvement. This result is consistent with the summary statistics of stock price before and after announcement date. Since, there is no significant difference between price before and after effective date in stock dividend company. So, it indicates that paying stock dividend cannot reduce trading friction and lead to no liquidity improvement.

⁹ We also do the analysis by using ILLIQ as proxy of illiquidity. However, we did not find the significant liquidity improvement. The possible reason is ILLIQ is proper proxy in very long term (yearly effect) and the increasing of trading activity during effective date is the phenomenon in the short term (daily to monthly effect). This result of analysis which uses ILLIQ as proxy is present in the appendix7.

¹⁰ See appendix8 for additional information about daily abnormal standardize dollar volume pre and post effective date

Table V

Average Cumulative Abnormal Standardize Dollar Volume during Effective Date

To standardize daily dollar volume. Dollar volume will be divided by its average which is computed by using dollar volume between 270 and 21 before effective date. The abnormal standardize dollar volume is the difference between the actual standardize dollar volume and its expectation which is computed by averaging the standardize dollar volume between 270 and 21 before effective date. The cumulative abnormal standardize dollar volume of each event is computed in various event windows. The first reported result in this table is the average of this cumulative abnormal standardize dollar volume of both stock split and stock dividend companies during the announcement date. The second is the result of significant level by employing T-test. This table will show * and **, if the cumulative abnormal standardize dollar volume is greater than zero at the significant level of .05 and .01 respectively.

Event Windows	Stock Split	Stock Dividend
Day -21 to Day -1	10.26**	0.97
Day -21 to Day -10	3.60*	0.93
Day -10 to Day -1	7.21**	0.34
Day 0 to Day 1	3.39**	0.03
Day -3 to Day 3	11.83**	-0.3
Day -5 to Day 5	15.87**	0.58
Day 1 to Day 10	16.15**	1.24
Day 10 to Day 21	27.51**	2.28
Day 1 to Day 21	41.35**	3.39

5.4.2) Increasing of trading activity of each group of investors

To answer the third hypothesis which suggest that investors who obtain the benefit from reduction of trading friction should increase their trading activity. So, we will analyze trading activity of each group of investors by using summation of buy and sell standardize dollar volume to be a proxy.

In stock split company, the evidence¹¹ indicate that retail investors significantly increase their trading activity. This increasing occurs on 4 days before effective date. So, we can identify that retailer is the group of investors who provide liquidity before effective date in the previous section.

So, this increasing of trading activity of retailer who have lowest wealth on average supports the third hypothesis which claimed that the investors who get the benefit from the reduction of trading friction is the investors who have been limited by their wealth.

¹¹ See appendix9 for additional information about daily abnormal summation of buy and sell standardize dollar volume of each group of investors for various pre and post effective date

Table VI

**Average Cumulative Abnormal Standardize Summation of Buy and Sell
Dollar Volume During Effective Date**

To standardize daily summation of buy and sell dollar volume of each group of investors. This summation will be divided by its average which is computed by using summation of buy and sell dollar volume between 270 and 21 before effective date. The abnormal of this standardize summation is the difference between the actual standardize summation and its expectation which is computed by averaging the standardize summation between 270 and 21 before effective date. The cumulative abnormal standardize summation of each event is computed in various event windows. The first reported result in this table is the average of this cumulative abnormal standardize summation of both stock split and stock dividend companies during the announcement date. The second is the result of significant level by employing T-test. This table will show * and **, if the cumulative abnormal standardize summation is greater than zero at the significant level of .05 and .01 respectively.

Event Windows	Stock Split			Stock Dividend		
	Retail	Foreign	Institution	Retail	Foreign	Institution
Day -21 to Day -1	10.88**	3.59	-0.38	-0.40	3.25	-4.50
Day -21 to Day -10	2.56	0.91	-1.81	0.35	1.59	-1.48
Day -10 to Day -1	9.38**	3.00	1.00	-0.87	1.47	-2.95
Day 0 to Day 1	4.33**	1.75	1.32	0.09	-0.36	-0.68
Day -3 to Day 3	13.54**	4.93*	2.94	-0.10	-1.16	-1.75
Day -5 to Day 5	18.35**	5.06*	4.08	0.44	0.45	-2.59
Day 1 to Day 10	18.00**	8.16	5.44	1.35	0.59	-0.53
Day 10 to Day 21	28.63**	21.95**	14.79	0.74	1.94	-0.69
Day 1 to Day 21	44.53**	28.8**	19.01*	1.90	2.33	-1.41

The first notable result in this section is retail investors increase their trading activity before effective date. The possible explanation is some investors in retail investors are not limited by their wealth and they see the opportunity to make profit. They may expect that the buying demand from investors who have been limited by high price will flow into stock after price turn into lower range. As a result, it will lead to price rising and cause an abnormal return after effective period. More supporting evidence will be exhibited in the section of third possible reason results.

The second notable point is foreign investors also increase their trading activity. However, the abnormal standardize dollar volume of foreign investors occurs after the retail investors increase their trading activity. The possible reason to explain foreign investors behavior is they concern about cost which may occur when they invest in illiquid stock such as slippage or they might have investment policy which allow them to invest in companies which have high liquidity.

5.4.3) Trading Activity and Price range

To answer the fourth hypothesis which aim to find which price ranges have correlation with the increasing of trading activity, we separate cumulative abnormal

summation of buy and sell standardize dollar volume in every event window of each groups of investors into three equally group by price after effective date. Then, we apply T-test on this set of data.

The preliminary result¹² indicates that, in stock split companies, the cumulative of retail investors in every price range are significantly greater than zero. So, it can be interpreted as whether price after effective date fall into any range, retail investors still increase their trading activity.

After that, to find correlation between price after effective date and increasing of trading activity, we also employ regression model by using the cumulative abnormal summation of buy and sell standardize dollar volume which have event window from 3 days before effective date to 3 days after effective date to be dependent variable. The result¹³ of every group of investors indicates that price after effective date does not have significant correlation with the cumulative. By this evidence, it is possible that increasing of trading activity is not caused by price after effective date directly. It is possible that the investors in the market may react with the level of trading friction reduction which is reflexed by the changing¹⁴ of price between before and after effective date.



¹² See appendix10 for additional information about cumulative summation of buy and sell standardize dollar volume which is classified by price after announcement date for various event windows.

¹³ We show only the result of stock split regression. Since, the abnormal trading volume in stock dividend companies does not have a significant improvement.

¹⁴ We run the regression by changing dummy variable of price range to change of price between before and after effective date. the result indicates that, in the stock split companies, the cumulative of retail investors has correlation with the change of price significantly. It shows that the change of price has effect on increasing of trading activity more than price level. See appendix11 for additional information about this result.

Table VII

**Coefficient of Each Variable in Regression Analysis between
Cumulative Abnormal Standardize Summation of Buy and Sell Dollar Volume and Price Range**

To indicate which price range has correlation with the increasing of trading activity, the regression model is employed in this analysis.

$$CATV_{[t,T]}^{i,j} = \beta_0 + \sum_{i=1}^2 \beta_i Post\ Price\ Range_i + \beta_4 M/B_{-1} + \beta_5 ASSET_{-1} + \varepsilon_t$$

Where (1) $CATV_{[t,T]}^{i,j}$ is the cumulative abnormal standardize summation of buy and sell dollar volume between 3 days before and 3 days after effective date. (2) Post Price Range_i is binary variable which equals one if post stock price is in that range. The source of this range come from the objective that we would like to classify the data by price after effective into three group equally. (3) M/B_{-1} is the market to book ratio of equity in previous year. (4) $ASSET_{-1}$ is the natural logarithm of total assets in previous year. Since, the low range is defined to be a default range, the β_1 and β_2 of mid and high range show the difference between coefficient of mid/high range and default range respectively. This table shows the coefficient of each variable and if its p-value is significant at level of .05 and .01. This table will show * and **.

Investors	Stock Split Company				
	Low	Mid	High	M/B ₋₁	Asset ₋₁
Retailer	13.92	1.01	10.99	-1.92	0.00
Foreigner	11.90	4.39	4.32	-1.15	-0.47
Institution	-34.70	2.07	4.04	-1.74	2.56

5.5) Increasing of Buying Demand

To study the increasing of buying demand, we employed imbalance to capture this increasing and did this analysis on each group of investors. In group of stock split companies, the evidence¹⁵ indicate that retail investors increase their buying significantly during the effective date. The period of buying demand increasing occurs before effective date. This evidence supports the explanation of trading volume increasing in the previous section. That explanation suggests that some group of retail investors who are not limited by wealth see the opportunity to make a profit So, they decide to buy stock before it has been adjusted on effective date. At the end, this is a reason to explain why we discovered that retail investors increase their trading activity before effective date.

The notable behavior of investors who do not have wealth constrain shows the possibility that, though, this group of investors perceive the opportunity to make a profit, but their reactions do not need to be occurred immediately during the announcement date. It is possible that they will wait until close to the effective date and decide to buy in this period.

¹⁵ See appendix12 for additional information about abnormal daily imbalance of each group of investors for various pre and post effective date

Though, this increasing of buying demand of retail investors is consistent with the fifth hypothesis which expect that buying demand will flow into stock when price is adjusted into lower range. Lastly, the evidence indicate that institutional investor is a seller group for retail investors and foreign investors tend to be a buyer in a long term.

Move to next result, in stock dividend companies, the evidence indicates that retail investors increase their buying in a short term. However, this increasing may not come from the reduction of trading friction. Since, the summary statistic of stock price before and after effective date shows that there is no significant difference of price between before and after effective date in stock dividend company. When looking at behavior of institutional investors, we found that this group increases their selling significantly. The possible reason of this selling is institutional investors concern about performance of stock dividend company and may interpret this announcement as a sigh of losing potential to pay cash dividend. As a result, institutional investors become a seller and a buyer is retail investors.

So, all these evidences indicate that splitting stock and paying stock dividend may be useful tools for managers when they would like to change the proportion of investors.

Table VIII

Average Cumulative Abnormal Imbalance during Effective Date

The daily imbalance of each group of investors is calculated by dividing the difference of buy and sell dollar volume by the summation of buy and sell dollar volume. The abnormal of this imbalance is the difference between the actual imbalance and its expectation which is computed by the average of imbalance between 270 and 21 before effective date. The cumulative abnormal imbalance of each event is computed in various event windows during the effective date. The first reported result in this table is the average of this cumulative abnormal imbalance of both stock split and stock dividend companies. The second is the result of significant level by employing T-test. This table will show * and **, if the cumulative abnormal imbalance is greater than zero at the significant level of .05 and .01 respectively. On the contrary, if the cumulative abnormal imbalance is lower than zero at the significant level of .05 and .01, This table will show ^ and ^^.

Event Windows	Stock Split			Stock Dividend		
	Retail	Foreign	Institution	Retail	Foreign	Institution
Day -21 to Day -1	0.13	-0.61	-0.75	0.21	0.29	-1.63^^
Day -21 to Day -10	0.01	-0.25	-0.4	0.12	0.04	-1.07^^
Day -10 to Day -1	0.11	-0.36	-0.48	0.12	0.29	-0.80^^
Day 0 to Day 1	0.00	0.20	-0.4^	0.04	-0.01	-0.12
Day -3 to Day 3	0.15*	-0.03	-0.73^	0.18**	0.09	-0.9^^
Day -5 to Day 5	0.19*	0.07	-0.77^	0.23*	0.03	-0.98^^
Day 1 to Day 10	0.12	0.43	-0.76^	0.15	-0.21	-0.23
Day 10 to Day 21	-0.08	0.56	-0.93^	0.04	-0.56	0.56
Day 1 to Day 21	0.05	0.88	-1.35^	0.19	-0.75	0.19

5.5.1) Further study of Increasing of Buying Demand and Price Range

Since, the result indicate that both of stock split and stock dividend companies really have abnormal buying demand during effective date and we have assumption that lower price will mitigate trading friction that comes from wealth limitation. As a result, this low-price range should increase investors' buying demand. Therefore, we would like to observe relation between this increasing of buying demand and price after effective date. All above leads to the hypothesis 5.1

H 5.1: If low price range after effective date can mitigate trading friction, we should observe correlation between this low stock price and increasing of investors' buying demand.

To answer this hypothesis by preliminary testing, we will classify cumulative abnormal imbalance in every event windows of each group of investors into three groups by price after effective date and tested them by T-test.

After that, we also present models which will be applied on both stock split event and stock dividend event to observe the relationship between price after effective date and abnormal buying demand flow.

$$CANT_{[t,T]}^i = \beta_0 + \sum_{i=1}^2 \beta_i Post\ Price\ Range_i + \beta_4 M/B_{-1} + \beta_5 ASSET_{-1} + \varepsilon_t \quad (19)$$

Where (1) $CANT_{[t,T]}^i$ is a cumulative abnormal net trading over the period [t,T] by using imbalance. (2) $Post\ Price\ Range_i$ ¹⁶ is binary variable which equals one if post stock price is in that range. The source of this range come from the objective that we would like to classify the data by price after effective into three group equally. Since, in this analysis, we will define low range as the default range. β_0 will be a coefficient of this range. So, β_1 of post price range 1 will show the difference between coefficient of middle range and default range and β_2 of post price range 2 will show the difference between coefficient of high range and default range. (3) M/B_{-1} is the market-to-book ratio of equity in previous year. We employ it as a control variable. (4) $ASSET_{-1}$ is the natural logarithm of total assets in previous year. We employ it as a control variable. We expect post price range that have effect on investors' buying demand will have coefficient significantly greater than zero.

After analyzing, the interesting of preliminary result¹⁷ in stock split companies is institutional investors sell the stock which their price after effective date falls into the lowest group. This evidence is consistent with summary statistics of price range and trading behavioral of each group of investors which indicate that institutional investors do not trade in the low-price stock.

Move to the result of regression model which uses the cumulative abnormal imbalance which have event window from 3 days before effective date to 3 days after effective date to be dependent variable. The result is consistent with the regression between cumulative abnormal trading volume and price because the result indicates that price after effective date also does not have significant correlation with cumulative abnormal imbalance. By this evidence, it is possible that the factor which has significant effect with the increasing of buying demand is other factors such as M/B_{-1} which is a control variable of undervaluation in the regression.

¹⁶ Price range for stock split event -Low range: Price is lower than 2.32, Middle range: Price is between 2.32 to 9.7, High range: Price is higher than 9.7

Price range for stock dividend - Low range: Price is lower than 4.92, Middle range: Price is between 4.92 to 11.1, High range: Price is higher than 11.1

¹⁷ See appendix13 for additional information about cumulative imbalance which is classified by price after announcement date for various event windows.

Table IX

**Coefficient of Each Variable in Regression Analysis
between Cumulative Abnormal Imbalance and Price Range**

To indicate which price range has correlation with the increasing of buying demand, the regression model is employed in this analysis.

$$CANT_{[t,T]}^i = \beta_0 + \sum_{i=1}^2 \beta_i Post\ Price\ Range_i + \beta_4 M/B_{-1} + \beta_5 ASSET_{-1} + \varepsilon_t$$

where (1) $CANT_{[t,T]}^i$ is a cumulative abnormal imbalance between 3 days before and 3 days after effective date. (2) Post Price Range_i is binary variable which equals one if post stock price is in that range. The source of this range come from the objective that we would like to classify the data by price after effective into three group equally. (3) M/B_{-1} is the market to book ratio of equity in previous year. (4) $ASSET_{-1}$ is the natural logarithm of total assets in previous year. Since, the low range is defined to be a default range, the β_1 and β_2 of mid and high range show the difference between coefficient of mid/high range and default range respectively. This table shows the coefficient of each variable and if its p-value is significant at level of .05 and .01, this table will show * and **.

Investors	Stock Split Company					Stock Dividend Company				
	Low	Mid	High	M/B ₋₁	Asset ₋₁	Low	Mid	High	M/B ₋₁	Asset ₋₁
Retailer	-0.70	0.16	0.06	0.02	0.05	-1.85	-0.06	-0.18	0.079*	0.12*
Foreigner	1.74	1.03	1.33	-0.26	-0.12	2.79	-0.36	0.09	-0.07	-0.16
Institution	1.09	-1.60	-2.41	0.21	-0.07	7.18	-0.72	-1.32	0.01	-0.45

Moreover, this interpretation also consistent with the behavior of retail investors in the previous section of result. Since, they increase their buying demand before the effective date. It means that they decide to buy the stock without concerning about price adjustment into the lower range

5.5.2) Further study of Abnormal Return During Effective Date

After that, to ensure this increasing of buying demand would be a possible reason of causing abnormal return during announcement date. We will observe the stock return during the effective date because some group of investors who do not have limitation of wealth may expect this increasing of buying demand flow after price is adjusted (during the effective date) will cause an abnormal return. So, they interpret the announcement of stock distribution as a signal of opportunity to make a profit. Therefore, this group of investors decide to buy this stock during announcement period for the profit during the effective period. As a result, this activity may be a possible reason that cause abnormal return during announcement date.

H 5.2: If the increasing of buying demand after distributing stock is a possible reason that cause abnormal return during announcement date, we should discover abnormal return which is the result of increasing of demand flow during effective date

To answer this hypothesis which expected that the increasing of buying demand can be one possible reason of abnormal return during announcement date, we will analyze stock return during the effective date. This section also follows [11] *Nguyen and Wang (2013)* methodology and applies a standard event study methodology to observe abnormal return both stock split and stock dividend. The result¹⁸ shows that stock split companies have abnormal return from 4 days date to 1 day before effective. This period of abnormal return occurrence is consistent with the behavior of retail investors who increase their buying before effective date. Moreover, the summary statistics of proportion of daily trading volume indicate that retail investors are the majority traders in stock split company. So, it is possible that the increasing of retailer's buying demand will cause abnormal return. However, we did not find the abnormal return during effective in stock dividend companies.

Therefore, this increasing of buying demand during the effective date can be a possible reason which causes market to react positively with the stock distribution announcement. Although, this increasing of buying demand does not have correlation with price after effective date.

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¹⁸ See appendix 14 for additional information about daily abnormal return for various pre and post effective date.

Table X

Average Cumulative Abnormal Return during Effective Date

The daily abnormal return is the difference between the actual return and its expectation which is computed by market model (The estimation period is day 270 through day 21 before effective date). The cumulative abnormal return of each event is computed in various event windows. The first reported result in this table is the average of cumulative abnormal return of both stock split and stock dividend companies during the effective date. The second is the result of significant level by employing T-test. This table will show * and **, if the daily abnormal return is greater than zero at the significant level of .05 and .01 respectively.

Event Windows	Stock Split	Stock Dividend
Day -1 to Day 0	0.74	-0.43
Day -2 to Day 2	2.67*	-1.41
Day -5 to Day 3	5.19**	-3.00
Day -10 to Day 5	5.74**	-5.27



CHAPTER 6

CONCLUSION

This research aims to indicate the possible explanation why stock distributions which seem to be a cosmetic corporate event cause abnormal return during the announcement date.

The results in this research do not support the first possible reason, the increasing of market attention, because the comparison of companies' performance indicate that there are no differences between treatment and control groups of stock split companies. When comparing the performance of stock dividend companies, the result of payout ratio shows that stock dividend companies have performance worse than its control groups. So, there is no incentive for manager to decide to attract analyst's attention. Moreover, the analysis of the market attention improvement by using the number of recommendations to be a proxy indicates that both of stock split and stock dividend announcement do not have potential to grab analyst's attention. By this evidence in Thailand stock market, stock distribution announcement is not useful tool for manager to attract analyst's attention.

The second reason is the liquidity improvement from the reduction of trading friction. From the evidence, it is indicated that only stock split companies have liquidity improvement. This result is consistent with hypothesis which suggest that when price turn into lower range, it will mitigate of trading friction and lead to increasing of trading activity. When we analyzed deeply to find who provide this liquidity, the result indicates that retail investors are the main group who increase their trading activity. So, behavior of retailer who have lowest wealth on average supports the hypothesis which claimed that the investors who get the benefit from the reduction of trading friction is the investors who have been limited by their wealth. The notable result is cumulative abnormal standardize dollar volume have significant correlation with the changing of price between before and after effective date instead price after effective date. This result shows the possibility that the increasing of

trading activity may not depend on price level, but it depends on the level of trading friction decreasing. By all this evidence, in Thailand stock market, it supports that stock price causes trading friction with investors who have a limitation of wealth. Moreover, the result shows the potential of splitting the stock is the useful tool for manager to relieve this trading friction which leads to liquidity improvement.

The last possible reason is the increasing of buying demand. The evidence indicated that, in stock split companies, retail investors increase their buying demand during the effective date. This result is consistent with hypothesis claimed that investors who perceive this reduction of price that have a good opportunity to buy are the investors who have been limited by their wealth. The evidence also indicates that retailer has increase their buying before effective. This behavior also supports the explanation that some group of investors in retailer group see the opportunity to make a profit before price is adjusted. In stock dividend company, the evidence also indicates that retail investors increase their buying activity. However, this behavior may not come from the reduction of trading friction. Since, there is no significant difference of price between before and after effective date in stock dividend company.

When we did the further analysis to find the relationship between price after effective and the increasing of buying demand, the result indicates that price after effective date does not have significant correlation with cumulative abnormal imbalance. By this evidence, it is possible that the factor which has significant effect with the increasing of buying demand is not price after effective date. Investor may decide to buy stock by other factors because, in the regression model, we employ the control variable which is M/B and companies' asset and this variable in regression of stock dividend company have significant P-value. However, we found the abnormal return during effective in stock split companies. This result shows the potential of stock have potential to trigger investors in the market to buy the stock and lead to abnormal return during effective period. So, all of these evidences in Thailand stock market support the argument of [10] *Powell and Baker (1993)* who suggest splitting the stock may be a useful tool for manager who would like to change the proportional of the ownership.

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APPENDIX

Appendix 1:

Average Abnormal Return for Various Pre and Post Announcement Date

The daily abnormal return is the difference between the actual return and its expectation which is computed by market model (The estimation period is day 270 through day 21 before announcement date). This daily abnormal return of each event is computed in 10 days consecutively before and after announcement date. The first reported result in this table is the average of daily abnormal return of both stock split and stock dividend companies. The second is the result of significant level by employing T-test. This table will show * and **, if the daily abnormal return is greater than zero at the significant level of .05 and .01 respectively.

Day	Stock Split	Stock Dividend
-10	0.28	0.33
-9	0.48	0.24
-8	0.03	-0.10
-7	0.07	0.07
-6	0.49	0.03
-5	0.53	0.25
-4	0.41	0.40*
-3	0.23	0.35
-2	-0.32	0.55*
-1	1.93*	0.71*
0	2.10*	1.09**
1	1.50*	0.86*
2	0.83	-0.12
3	0.76	-0.09
4	0.08	-0.10
5	-0.78	-0.07
6	0.06	0.06
7	-0.72	-0.02
8	1.51*	0.20
9	0.39	0.15
10	0.15	-0.11

Appendix2:

Average Growth of Net Profit Margin for Various Pre and Post Stock Distribution Announcement Date

This table shows the average of net profit margin growth of treatment and control group of both stock split and stock dividend companies. The treatment group is the group of stock distribution companies in the sample period. For control group, this is the criteria for creating. (1) companies in the same industry as the treatment group (2) total asset is the closest to the treatment company's total asset in previous year from the effective date (3) control companies must not distribute stock over five years of sample period. This table also presents the level of the difference of net profit margin growth between treatment and control group. By employing T-test, if this difference is greater than zero at the significant level of .05 and .01, This table will show * and ** respectively.

Period (In Quarter)	Stock Split Company				Stock Dividend Company			
	Pre		Post		Pre		Post	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
0 to 3	-0.03	5.73	0.39	0.00	-0.05	0.00	0.14	0.08
3 to 6	0.04	-0.12	0.29	-0.15	-0.01	0.13	-0.05	0.06
6 to 9	0.01	-0.56	-0.25	-0.03	0.13*	-0.33	-0.04	-0.75
9 to 12	0.10	-0.35	-0.06	0.29	0.30	-0.57	0.02	-0.07
0 to 12	0.67	-3.76	0.06	0.12	0.35	-0.28	-0.04	-1.12
0 to 24	-1.01	-0.41	-0.17	0.21	0.27	0.17	-0.26	-1.84

Average Growth of Payout Ratio for Various Pre and Post Stock Distribution Announcement Date

This table shows the average of payout ratio growth of treatment and control group of both stock split and stock dividend companies. The treatment group is the group of stock distribution companies in the sample period. For control group, this is the criteria for creating. (1) companies in the same industry as the treatment group (2) total asset is the closest to the treatment company's total asset in previous year from the effective date (3) control companies must not distribute stock over five years of sample period. This table also presents the level of the difference of payout ratio growth between treatment and control group. By employing T-test, if this difference is greater than zero at the significant level of .05 and .01, This table will show * and ** respectively.

Period (In Year)	Stock Split Company				Stock Dividend Company			
	Pre		Post		Pre		Post	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
0 to 1	0.65	0.14	0.05	0.11	1.82**	0.13	0.71	0.10
0 to 2	0.21	0.10	-0.07	0.66	0.07	0.07	0.93*	0.07
1 to 2	-0.07	0.25	-0.02	0.56	-0.34	-0.07	0.17	0.09

Appendix3:

**Average Number of Recommendations and
Difference of Number of Recommendation between Before and After Announcement Date**

This table shows the average of the number of recommendations in month before and after the month of announcement. The result in this table include treatment and control groups of both stock split and stock dividend companies. By employing T-test, If the difference of the number of recommendations between before and after announcement month is greater than zero at the significant level of .05 and .01, This table will show * and ** respectively.

	Stock Split Company						Stock Dividend Company					
	Treatment			Control			Treatment			Control		
	Before	After	Diff	Before	After	Difference	Before	After	Diff	Before	After	Difference
Average	2.58	2.50	0.08	2.52	2.58	-0.06	2.80	2.75	0.05	2.80	2.75	0.05
Std	5.31	5.22	5.26	5.94	6.06	6.00	5.20	5.15	5.18	5.20	5.15	5.18
Maximum	24.00	22.00		23.00	23.00		20.00	21.00		20.00	21.00	
Minimum	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	

Appendix4:

Average Daily Summation of Buy and Sell Dollar Volume (Million Baht)

This table shows the average, standard deviation, maximum value and minimum value of summation of buy and sell dollar volume on each group of investors by using data between day 41 and day 21 before effective date. This table also displays the proportion of Summation of Buy and Sell Dollar Volume for presenting which group of investors is the majority group of traders in these stock distribution companies.

Group of Investors	Stock Split Company						Stock Dividedn Company					
	Average	Proportion	Median	Std	Max	Min	Average	Proportion	Median	Std	Max	Min
Retail	103.04	76.53%	23.80	243.22	1151.53	0.04	79.63	70.87%	33.89	110.03	597.71	0.05
Foreign	15.69	11.66%	1.67	56.49	405.84	0.00	15.93	14.18%	1.42	39.73	300.41	0.00
Institution	15.85	11.77%	0.37	50.10	332.91	0.00	16.14	14.36%	0.69	36.93	197.31	0.00
Proprietary	0.05	0.04%	0.00	0.29	2.10	0.00	0.66	0.59%	0.00	2.96	25.22	0.00

Appendix5:

Daily Dollar Volume of Each Group of Investors is Classified by Price Range (Million)

This table displays the average and standard deviation of summation of buy and sell dollar volume of each price range by using daily summation of buy and sell dollar volume between year 2011 and year 2015 of all stock in the Thailand stock market. This table also shows the proportion of summation of buy and sell dollar volume in order to present which group of investors is the majority group of traders in each price range.

Price Range	Retail Investors			Foreign Investors			Institutional Investors		
	Average	Proportion	Std	Average	Proportion	Std	Average	Proportion	Std
Less than 2	51.93	93.04%	195.09	2.08	3.73%	10.82	1.80	3.22%	17.27
2 to 5	67.28	83.40%	267.25	5.68	7.04%	31.84	7.71	9.56%	49.02
5 to 10	91.59	76.26%	410.07	12.13	10.10%	64.81	16.38	13.64%	95.36
10 to 25	95.87	69.74%	339.47	20.21	14.70%	84.60	21.39	15.56%	95.93
25 to 100	106.83	50.72%	328.94	55.62	26.41%	186.26	48.18	22.87%	151.09
100 to 200	190.20	32.93%	412.14	223.27	38.65%	446.01	164.19	28.42%	347.77
200 to 400	249.81	34.28%	540.78	269.39	36.97%	535.05	209.48	28.75%	428.02
More than 400	195.75	39.32%	442.87	165.80	33.31%	335.55	136.25	27.37%	259.89

Appendix6:

Average Difference of Price between Before and After Effective Date

This table shows the average, standard deviation, maximum value and minimum value of difference between stock price before and after effective date. This table presents this difference of both stock split and stock dividend companies. By employing T-test, if this difference is greater than zero at the significant level of .05 and .01, This table will show * and ** respectively.

	Stock Split	Stock Dividend
Average	64.31**	-0.01
Std	93.87	0.40
Maximum	617.00	2.00
Minimum	0.71	-2.00

Appendix7:

Difference of ILLIQ between Pre and Post Effective Date in Each Event Window

This table shows the average, standard deviation, maximum value and minimum value of difference of ILLIQ of stock split and stock dividend in various event windows. For calculate pre-announcement ILLIQ, we use the data from day 21 before effective backward equal to number of each event window. For calculate post-announcement ILLIQ, we use the data from day 1 after effective forward equal to number of each event window. By employing T-test, if this difference is greater than zero at the significant level of .05 and .01, the table will show * and ** respectively.

Event Window	Stock Split				Stock Dividend			
	Average	StdDev	Minimum	Maximum	Average	StdDev	Minimum	Maximum
10	0.00027	0.00158	-0.00003	0.01180	-0.00004	0.00045	-0.00512	0.00008
20	0.00022	0.00142	-0.00003	0.01110	-0.00001	0.00015	-0.00164	0.00005
40	0.00013	0.00092	-0.00054	0.00718	-0.00001	0.00009	-0.00101	0.00007
60	0.00010	0.00068	-0.00058	0.00507	0.00000	0.00006	-0.00051	0.00039



Appendix 8:

Average Abnormal Standardize Dollar Volume for various Pre and Post Effective Date

To standardize daily dollar volume. The dollar volume will be divided by its average which is computed by using dollar volume between 270 and 21 before effective date. The abnormal standardize dollar volume is the difference between the actual standardize dollar volume and its expectation which is computed by averaging standardize dollar volume 270 and 21 before effective date. This daily abnormal standardize dollar volume of each event is computed in 21 days consecutively before and after effective date. The first reported result in this table is the average of daily abnormal standardize dollar volume of both stock split and stock dividend company. The second is the result of significant level by employing T-test. This table will show * and **, if the daily abnormal standardize dollar volume is greater than zero at the significant level of .05 and .01 respectively (One-tail test).

Day	Stock Split	Stock Dividend
-21	1.39	-0.06
-20	0.53	-0.05
-19	0.42*	-0.15
-18	0.4	0.17
-17	0.06	0.02
-16	0.08	0.09
-15	-0.16	0.25
-14	-0.06	0.12
-13	0.37	0.07
-12	0.32	0.25
-11	0.27	0.12
-10	0.69	0.39
-9	0.61*	-0.01
-8	0.38	0.04
-7	0.27	0.24
-6	0.35	-0.16
-5	0.26	0.53
-4	0.59*	-0.2
-3	1.21**	-0.14
-2	2.11**	-0.11
-1	2.26**	-0.16
0	2.35**	-0.05
1	1.16**	0.1
2	1.32**	-0.05
3	2.74**	0.11
4	1.61**	0.22
5	2.18**	0.44
6	0.99**	0.16
7	0.29	0.02
8	1.92**	0.28
9	3.29*	-0.05
10	2.31**	0.15
11	2.82**	0.07
12	2.01**	0.05
13	2.3*	0.05
14	2.18*	0.15
15	2.72**	0.24
16	3.41*	0.78
17	2.23*	0.18
18	2.31	0.47
19	1.88*	0.23
20	2.52*	0.12
21	3.1	-0.09

Appendix9:

**Average Abnormal Standardize Summation of Buy and Sell Dollar Volume
for Various Pre and Post Effective Date**

To standardize daily summation of buy and sell dollar volume of each group of investors. This summation will be divided by its average which is computed by using summation of buy and sell dollar volume between 270 and 21 before effective date. The abnormal of this standardize summation is the difference between the actual standardize summation and its expectation which is computed by averaging the standardize summation between 270 and 21 before effective date. This daily abnormal summation of each event is computed in 21 days consecutively before and after effective date. The first reported result in this table is the average of daily abnormal standardize summation of buy and sell dollar volume of both stock split and stock dividend company. The second is the result of significant level by employing T-test. This table shows * and **, if the daily abnormal summation is greater than zero at the significant level of .05 and .01 respectively (One-tail test).

Day	Stock Split Company			Stock Dividend Company		
	Retail	Foreign	Institution	Retail	Foreign	Institution
-21	0.33	1.07	0.18	-0.18	0.72	-0.19
-20	-0.01	0.11	-0.43	-0.14	0.05	-0.18
-19	0.31	0.13	-0.21	-0.14	0.06	-0.67
-18	0.31	0.43	0.05	0.08	0.14	-0.11
-17	0.08	-0.23	-0.31	-0.02	-0.05	-0.32
-16	0.08	-0.33	-0.42	0.03	-0.20	-0.21
-15	-0.20	-0.23	-0.65	0.33	-0.03	-0.05
-14	-0.01	-0.24	-0.44	0.10	1.05	0.01
-13	0.46	0.01	-0.37	0.15	0.14	-0.29
-12	0.38	-0.05	-0.32	0.31	0.1	-0.14
-11	0.25	0.07	1.27	0.14	0.01	0.27
-10	1.11	0.33	-0.5	-0.15	-0.26	0.1
-9	0.96*	0.21	0.17	-0.30	-0.09	-0.43
-8	0.58	0.05	0.83	-0.17	0.51	-0.01
-7	0.51	0.02	-0.47	0.27	0.14	-0.45
-6	0.56	-0.18	-0.44	-0.15	0.23	-0.55
-5	0.51	-0.39	-0.15	0.18	1.68	-0.57
-4	0.6*	0.01	0.4	-0.26	0.2	-0.36
-3	1.29**	0.64	0.47	-0.14	-0.37	-0.33
-2	2.34**	1.91*	0.81	-0.13	-0.28	-0.15
-1	2.64**	0.91*	0.09	-0.15	-0.12	-0.52
0	3.02**	0.49	0.94	-0.05	-0.16	-0.35
1	1.48*	1.39	0.43	0.17	-0.24	-0.38
2	1.52**	0.16	-0.01	0.00	-0.18	-0.14
3	2.78**	0.17	0.52	0.23	0.05	-0.05
4	1.96**	-0.15	1.2	0.24	-0.13	-0.01
5	2.48**	0.65	-0.16	0.44	0.12	-0.01
6	1.18*	0.39	-0.25	0.21	0.34	-0.06
7	0.3	0.99	-0.08	-0.01	0.17	-0.37
8	2.03**	2	0.51	0.1	0.4	0.16
9	3.85*	1.92	2.64	-0.06	-0.15	0.04
10	2.26**	1.42	1.3	0.2	0.22	0.20
11	2.74*	1.63*	1.31	-0.17	0.11	0.01
12	1.53*	0.3	1.36	-0.1	-0.02	-0.14
13	1.41*	1.07*	0.91	0.07	0.46	-0.12
14	1.67**	0.75	0.53	0.14	1.05	0.67
15	2.51**	1.52*	0.26	-0.03	0.49	-0.30
16	3.83*	3.39*	1.74	0.55	-0.15	-0.12
17	2.64*	4.09	0.42	0.13	-0.00	0.37
18	2.82	0.9	-0.02	0.45	0.38	-0.06
19	2.24*	0.79	0.84	-0.15	-0.07	-0.43
20	3.02*	4.97*	2.76	-0.15	-0.19	-0.35
21	3.75	2.27	3.91	-0.14	-0.27	-0.45

Appendix 10:

Average Cumulative Abnormal Standardize Summation of Buy and Sell Dollar Volume during Effective Date Classify by Price Range

To standardize daily summation of buy and sell dollar volume of each group of investors. This summation will be divided by its average which is computed by using summation of buy and sell dollar volume between 270 and 21 before effective date. The abnormal of this standardize summation is the difference between the actual standardize summation and its expectation which is computed by the average of standardize summation between 270 and 21 before effective date. The cumulative abnormal standardize summation of each event is computed in various event windows and classified into three groups equally by price after effective. The first reported result in this table is the average of this cumulative abnormal standardize summation of stock split companies during the announcement date. The second is the result of significant level by employing T-test. This table will show * and **, if the cumulative abnormal standardize summation is greater than zero at the significant level of .05 and .01 respectively (One-tail test).

Event Windows	Stock Split											
	Retail				Foreign				Institution			
	All	Low	Mid	High	All	Low	Mid	High	All	Low	Mid	High
Day -21 to Day -1	10.88**	10.23	7.96	15.26*	3.59	4.77	-1.86	8.44	-0.38	1.84	-4.73	2.75
Day -21 to Day -10	2.56	2.58	1.42	4.06	0.91	1.40	-3.30	4.99	-1.81	-0.08	-2.98	-2.24
Day -10 to Day -1	9.38**	7.61*	7.45	13.71*	3.00	3.39	1.24	4.72	1.00	1.54	-2.51	4.92
Day 0 to Day 1	4.33**	2.37	3.81*	6.98*	1.75	0.45	4.63	0.16	1.32	0.88	2.45	0.55
Day -3 to Day 3	13.54**	11.01*	10.78*	19.31**	4.93*	2.86	6.66	5.59	2.94	2.18	2.08	5.43
Day -5 to Day 5	18.35**	14.91*	12.85	27.90**	5.06*	2.88	5.29	7.45	4.08	5.51	0.63	7.53
Day 1 to Day 10	18.00**	18.38	8.39	27.89**	8.16	-0.62	11.87	13.51*	5.44	8.38	1.08	8.04
Day 10 to Day 21	28.63**	26.41	20.12*	39.72*	21.95**	15.05	20.51	30.71	14.79	8.34	29.96	3.34
Day 1 to Day 21	44.53**	42.16	28.17*	64.31*	28.8**	14.35	28.79	43.92*	19.01*	16.40	29.32	9.90

Average Cumulative Abnormal Standardize Summation of Buy and Sell Dollar Volume during Effective Date Classify by Price Range

To standardize daily summation of buy and sell dollar volume of each group of investors. This summation will be divided by its average which is computed by using summation of buy and sell dollar volume between 270 and 21 before effective date. The abnormal of this standardize summation is the difference between the actual standardize summation and its expectation which is computed by the average of standardize summation between 270 and 21 before effective date. The cumulative abnormal standardize summation of each event is computed in various event windows and classified into three groups equally by price after effective. The first reported result in this table is the average of this cumulative abnormal standardize summation of stock dividend companies during the announcement date. The second is the result of significant level by employing the T-test. This table will show * and **, if the cumulative abnormal standardize summation is greater than zero at the significant level of .05 and .01 respectively (One-tail test).

Event Windows	Stock Dividend											
	Retail				Foreign				Institution			
	All	Low	Mid	High	All	Low	Mid	High	All	Low	Mid	High
Day -21 to Day -1	-0.40	-2.20	3.88	-0.58	3.25	-2.98	13.57	1.76	-4.50	-7.56	-1.89	-3.15
Day -21 to Day -10	0.35	-0.23	2.44	0.34	1.59	-1.44	5.46	1.91	-1.48	-1.55	-1.22	-0.57
Day -10 to Day -1	-0.87	-1.95	1.27	-1.00	1.47	-1.56	7.89	-0.35	-2.95	-5.25	-0.90	-2.61
Day 0 to Day 1	0.09	-0.41	0.74	0.17	-0.36	-0.93	0.27	-0.34	-0.68	-1.42	-0.04	-0.62
Day -3 to Day 3	-0.10	-2.17	0.89	0.70	-1.16	-2.32	-0.76	-0.70	-1.75	-4.57	0.65	-1.45
Day -5 to Day 5	0.44	-3.10	3.07	1.58	0.45	-3.07	3.81	0.63	-2.59	-6.84	0.64	-1.48
Day 1 to Day 10	1.35	-2.84	4.90	2.44	0.59	-1.49	1.59	1.78	-0.53	-4.44	3.22	0.24
Day 10 to Day 21	0.74	-0.08	-0.54	4.22	1.94	-0.75	1.63	6.75	-0.69	-2.53	2.54	-0.06
Day 1 to Day 21	1.90	-2.83	3.76	6.46	2.33	-2.36	2.97	8.11	-1.41	-6.49	4.55	0.19

Appendix 11:

**Coefficient of Each Variable in Regression Analysis
between Cumulative Abnormal Summation of Buy and Sell standardize Dollar Volume and Change**

To indicate correlation increasing of trading activity and price changing, the regression model is employed in this analysis.

$$CATV_{[t,T]}^{i,j} = \beta_0 + Change_i + \beta_4 M/B_{-1} + \beta_5 ASSET_{-1} + \varepsilon_t$$

Where (1) $CATV_{[t,T]}^{i,j}$ is the cumulative abnormal standardize summation of buy and sell dollar volume between 3 days before and 3 days after effective date. (2) $Change_i$ is the percentage change of price between before and after effective date. (3) M/B_{-1} is the market to book ratio of equity in previous year. (4) $ASSET_{-1}$ is the natural logarithm of total assets in previous year. This table shows the coefficient of each variable and if its p-value of coefficient is significant at level of .05 and .01, this table will show * and ** respectively.

Investors	Stock Split Company				Stock Dividend Company			
	Int	Change	M/B ₋₁	Asset ₋₁	Int	Change	M/B ₋₁	Asset ₋₁
Retailer	-43.14	-51.46*	-1.81	1.26	-3.08	-20.57	-0.21	0.22
Foreigner	-10.31	-24.68	-1.20	-0.13	-8.84	-63.52*	-0.07	0.50
Institution	-38.97	-3.19	-1.55	2.76	-21.71	75.54	-0.07	1.29



Appendix 12:

Average Abnormal Imbalance for Various Pre and Post Effective Date

The daily imbalance of each group of investors is calculated by dividing the difference of buy and sell dollar volume by the summation of buy and sell dollar volume. The abnormal of this imbalance is the difference between the actual imbalance and its expectation which is computed by averaging the imbalance between 270 and 21 before effective date. This daily abnormal imbalance of each event is computed in 21 days consecutively before and after effective date. The first reported result in this table is the average of daily abnormal imbalance of both stock split and stock dividend company. The second is the result of significant level by employing T-test. This table will show * and **, if the daily abnormal imbalance is greater than zero at the significant level of .05 and .01 respectively. On the contrary, if the daily abnormal imbalance is lower than zero at the significant level of .05 and .01, This table will show ^ and ^^ respectively.

Day	Stock Split Company			Stock Dividend Company		
	Retail	Foreign	Institution	Retail	Foreign	Institution
-21	0.03	-0.09	-0.27	0.03	0.00	0.05
-20	0.04	-0.22^	-0.25^	0.00	-0.06	-0.10
-19	0.01	-0.09	0.00	-0.00	-0.1	-0.02
-18	-0.01	0.07	0.11	-0.00	0.02	-0.02
-17	-0.02	-0.11	0.17	-0.02	-0.00	0.03
-16	0.01	-0.03	0.01	0.04*	-0.10	-0.24^
-15	0.00	0.15	0.11	0.03*	-0.06	-0.36^^
-14	-0.02	0.09	-0.06	0.03	0.03	-0.26^^
-13	0.01	-0.14	-0.17	0.04*	0.13	-0.37^^
-12	-0.01	-0.18	-0.07	0.00	0.17*	-0.21^
-11	-0.02	0.19	-0.08	-0.03	0.01	-0.11
-10	-0.01	0.03	-0.18	0.03	0.06	-0.22^
-9	-0.04^	-0.21^	0.05	-0.00	0.01	-0.16
-8	0.04	-0.11	-0.16	0.00	0.10	-0.09
-7	0.03	0.02	-0.21	0.02	0.09	-0.08
-6	0.05*	-0.05	-0.12	-0.01	0.12	0.02
-5	-0.05^	0.06	0.19	-0.00	0.07	-0.1
-4	0.02	-0.06	-0.35^	0.02	-0.03	0.01
-3	0.02*	-0.14	-0.24	0.04*	0.00	-0.31^^
-2	0.03*	-0.01	0.07	0.03	-0.03	-0.22^
-1	0.02*	-0.07	0.06	0.02	0.00	-0.2^
0	0.00	0.22*	-0.2	0.02	0.04	-0.12
1	0.00	-0.03	-0.30^	0.02	-0.06	-0.03
2	0.01	-0.01	-0.35^	0.04*	0.09	-0.16
3	0.08**	-0.05	-0.32^	0.04*	0.07	-0.31^^
4	0.05*	-0.02	0.04	0.01	-0.07	-0.10
5	0.03	0.15	0.00	0.02	-0.04	-0.05
6	-0.01	0.12	-0.04	0.03	-0.13^	0.01
7	0.01	0.03	-0.1	0.00	-0.05	-0.04
8	0.01	0.06	-0.02	-0.00	0.02	-0.06
9	-0.03	0.18	-0.06	0.01	-0.08	0.11
10	-0.02	0.12	-0.24^	-0.00	-0.02	0.23*
11	-0.01	0.01	-0.19	-0.01	-0.01	0.30**
12	0.00	0.11	-0.34^^	0.00	0.03	-0.02
13	-0.02	0.15	-0.08	-0.01	-0.09	0.06
14	0.00	-0.05	-0.1	-0.00	-0.09	0.03
15	-0.03	0.01	-0.12	0.01	-0.17^	0.09
16	-0.01	0.19*	-0.13	0.00	-0.14^	0.06
17	-0.02	0.09	0.22	-0.01	0.01	0.08
18	-0.04^	0.00	0.23	-0.00	-0.14^	0.02
19	0.01	0.09	-0.09	0.02	0.02	-0.05
20	0.02	-0.03	-0.33^	0.04*	-0.08	-0.04
21	0.04	0.03	-0.26^	0.00	-0.03	0.08

Appendix 13:

Average Cumulative Abnormal Imbalance during Effective Date Classify by Price Range

The daily imbalance of each group of investors is calculated by dividing the difference of buy and sell dollar volume by the summation of buy and sell dollar volume. The abnormal of this imbalance is the difference between the actual imbalance and its expectation which is computed by averaging imbalance between 270 and 21 before effective date. The cumulative abnormal imbalance of each event is computed in various event windows during effective date and classified into three groups equally by price after effective. The first reported result in this table is the average of this cumulative abnormal imbalance of stock split companies. The second is the result of significant level by employing T-test. This table will show * and **, if the cumulative abnormal imbalance is greater than zero at the significant level of .05 and .01 respectively. On the contrary, if the cumulative abnormal imbalance is lower than zero at the significant level of .05 and .01, This table will show ^ and ^^.

Event Windows	Stock Split											
	Retail				Foreign				Institution			
	All	Low	Mid	High	All	Low	Mid	High	All	Low	Mid	High
Day -21 to Day -1	0.13	0.25	0.29	-0.07	-0.61	-2.95^	-0.5	1.75	-0.75	1.13	-0.48	-3.68
Day -21 to Day -10	0.01	0.05	0.25	-0.20	-0.25	-1.79^	0.03	1.12	-0.4	0.93	-0.30	-2.15
Day -10 to Day -1	0.11	0.22	0.03	0.13	-0.36	-1.31^	-0.4	0.72	-0.48	0.43	-0.41	-1.69
Day 0 to Day 1	0.00	-0.01	0.04	0.00	0.20	-0.01	0.23	0.61*	-0.4^	0.15	-0.7^	-0.85^^
Day -3 to Day 3	0.15*	0.05	0.21	0.16	-0.03	-0.56	0.31	0.35	-0.73^	0.41	-1.05	-1.85^^
Day -5 to Day 5	0.19*	0.06	0.27*	0.22	0.07	-0.42	0.22	0.53	-0.77^	0.06	-0.63	-2.23^^
Day 1 to Day 10	0.12	0.07	0.17	0.15	0.43	0.73	0.86	-0.19	-0.76^	-1.20	-0.35	-1.14
Day 10 to Day 21	-0.08	0.02	-0.34	0.12	0.56	-0.23	1.64*	0.09	-0.93^	-0.03	-1.15	-1.53
Day 1 to Day 21	0.05	0.08	-0.13	0.29	0.88	0.44	2.26**	-0.20	-1.35^	-1.01	-1.24	-2.16

Average Cumulative Abnormal Imbalance during Effective Date Classify by Price Range

The daily imbalance of each group of investors is calculated by dividing the difference of buy and sell dollar volume by the summation of buy and sell dollar volume. The abnormal of this imbalance is the difference between the actual imbalance and its expectation which is computed by averaging imbalance between 270 and 21 before effective date. The cumulative abnormal imbalance of each event is computed in various event windows during effective date and classified into three groups equally by price after effective. The first reported result in this table is the average of this cumulative abnormal imbalance of Stock dividend companies. The second is the result of significant level by employing T-test. This table will show * and **, if the cumulative abnormal imbalance is greater than zero at the significant level of .05 and .01 respectively. On the contrary, if the cumulative abnormal imbalance is lower than zero at the significant level of .05 and .01, This table will show ^ and ^^.

Event Windows	Stock Dividend											
	Retail				Foreign				Institution			
	All	Low	Mid	High	All	Low	Mid	High	All	Low	Mid	High
Day -21 to Day -1	0.21	0.27	0.20	0.06	0.29	0.36	-0.2	1.31*	-1.63^^	-1.17	-1.15	-2.53^
Day -21 to Day -10	0.12	0.22	0.11	0.03	0.04	-0.37	-0.01	0.74	-1.07^^	-1.08	-0.78	-1.67^
Day -10 to Day -1	0.12	0.06	0.12	0.07	0.29	0.81	-0.19	0.72	-0.80^^	-0.30	-0.50	-1.31^
Day 0 to Day 1	0.04	0.06	0.06	-0.01	-0.01	-0.04	-0.03	-0.05	-0.12	0.09	-0.12	-0.11
Day -3 to Day 3	0.18**	0.18	0.29*	0.07	0.09	0.28	-0.25	0.28	-0.9^^	-0.14	-0.81	-1.36^^
Day -5 to Day 5	0.23*	0.19	0.37*	0.11	0.03	0.44	-0.28	0.24	-0.98^^	-0.32	-0.71	-1.49^^
Day 1 to Day 10	0.15	0.03	0.27	0.11	-0.21	0.03	-0.38	0.08	-0.23	0.30	0.16	-0.83
Day 10 to Day 21	0.04	0.09	0.17	-0.07	-0.56	-0.5	-1.12	-0.22	0.56	0.44	0.9	0.22
Day 1 to Day 21	0.19	0.12	0.45	0.03	-0.75	-0.57	-1.42	-0.13	0.19	0.54	0.87	-0.71

Appendix 14:

Average Abnormal Return for Various Pre and Post Effective Date

The daily abnormal return is the difference between the actual return and its expectation which is computed by market model (The estimation period is day 270 through day 21 before effective date). This daily abnormal return of each event is computed in 10 days consecutively before and after effective date. The first reported result in this table is the average of daily abnormal return of both stock split and stock dividend companies. The second is the result of significant level by employing T-test. This table will show * and **, if the daily abnormal return is greater than zero at the significant level of .05 and .01 respectively.

Day	Stock Split	Stock Dividend
-10	0.14	-0.43
-9	0.24	-0.28
-8	0.18	-0.20
-7	-0.40	-0.19
-6	0.22	-0.33
-5	-0.47	0.01
-4	0.68*	-0.31
-3	1.73*	-0.27
-2	1.79**	-0.19
-1	0.95*	-0.35
0	-0.21	-0.08
1	-0.35	-0.37
2	0.49	-0.42
3	0.59	-1.02
4	-0.40	-0.36
5	0.56	-0.48
6	0.12	-0.30
7	0.04	-0.25
8	-0.06	-0.25
9	0.12	-0.51
10	0.31	-0.27

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