

**HOW LONG DOES STOCK PRICE REACT TO  
DIVIDEND PAYMENT ANNOUNCEMENT?**



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Supatra Roipornkasemsuk

## **HOW LONG DOES STOCK PRICE REACT TO DIVIDEND PAYMENT ANNOUNCEMENT?**

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### **ABSTRACT**

This study investigates the number of average day that stock price reacts to cash dividend announcements for the period 1999–2011 employing data from the SETSMART database. First in this paper, a thorough investigation is done with the help of ‘event study methodology’ to analyze the average number of day that reach the average of maximum cumulative abnormal return (CAR) and average of minimum cumulative abnormal return (CAR) after the cash dividend announcement. Second, examines the trend of rate of return of each stock impact to the number of day to reach the average maximum CAR and average minimum CAR of each cash dividend announcement. Third, examines the industry effect to the number of day to reach the average maximum CAR and average minimum CAR of each cash dividend announcement. Forth, examines that cash dividend announcement might have an impact to the investment behavior of each investor types. The study finds that the average number of day to reach the average of maximum or minimum CAR faster is the good event new from the dividend change. It is expected that the study will not only help in developing investors’ awareness regarding stock price sensitivity towards dividend declaration, but also help to design their investment decision to protect their interest. However, only cash dividend announcement news is the limitation for study as well. So more news information will be helped to get more efficiency analyze for investment planning.

**KEY WORDS:** Dividend announcement / dividend change / cumulative abnormal return / stock price / SET

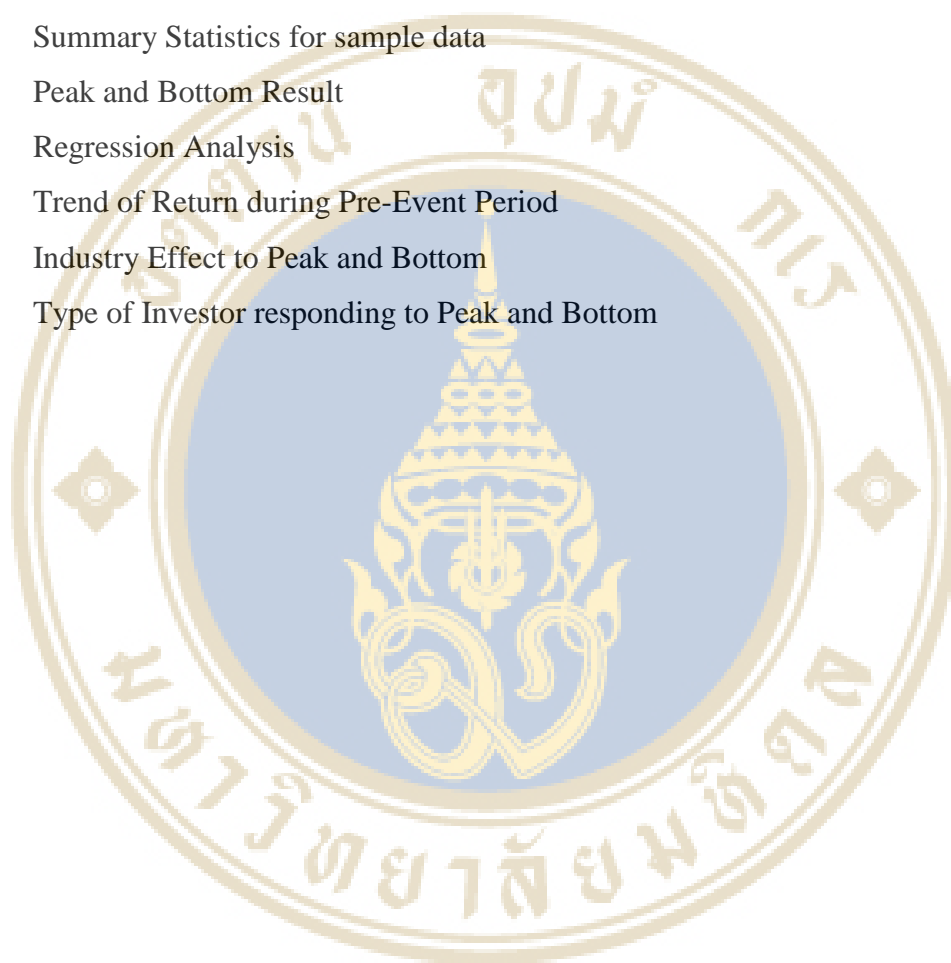
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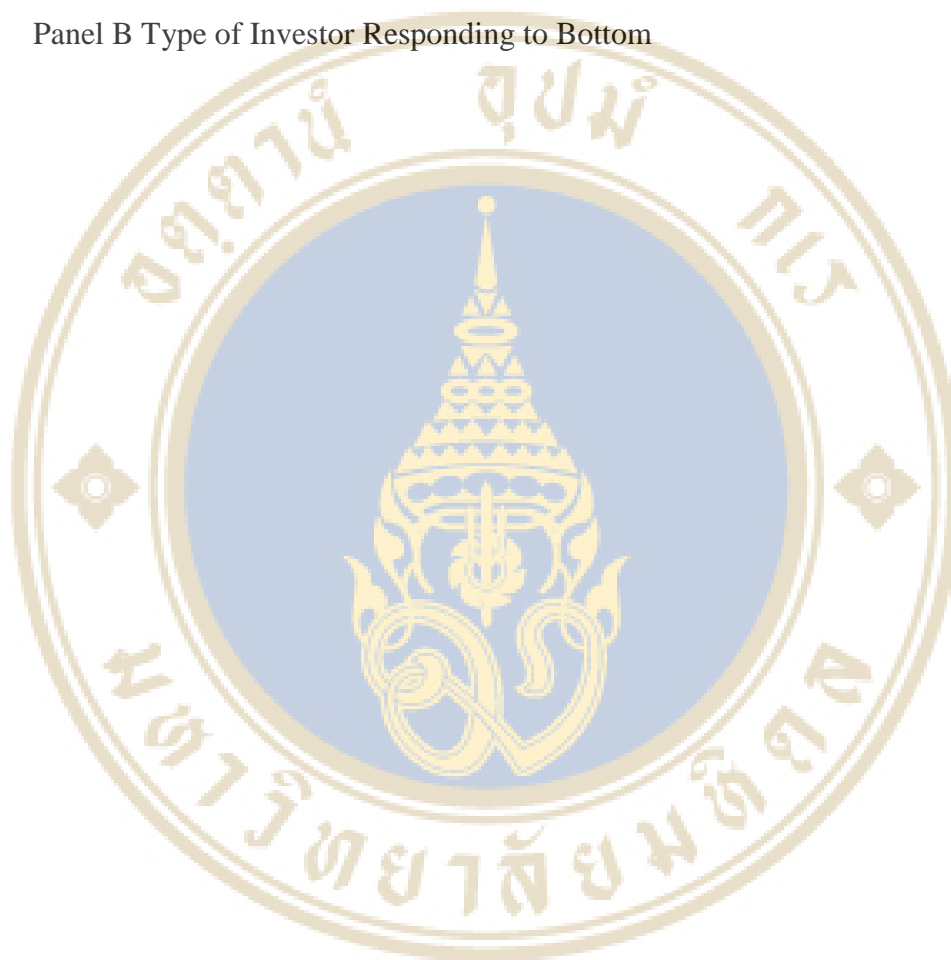
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## **CHAPTER I**

### **INTRODUCTION**

Investors consider several factors in investing funds in any particular securities, of which, the most important factor is the return from the investment in securities that typically depends on the dividend declaration in the stock market. Dividends are basically a form of paying back excess wealth generated by the firm to its shareholders which is either paid in form of cash dividends or stock dividends. In other words, it's the profits made by the firm which is paid back to the shareholders in form of dividends. Cash dividends refers to the excess wealth generated being paid in form of cash while stock dividends also known as bonus issue refer to issuing the shareholders with additional shares in proportion to the shares already held by the shareholders. The decision whether to pay dividends in form of cash or stock is solely the decision of the management of the firm. However, this paper focuses and does its study on cash dividends as cash dividends is the most common dividend payout method used. Also the investors are bias towards cash dividends and prefer investing in companies paying cash rather than issuing additional shares.

The relevance and irrelevance of dividend announcement and shareholder reaction has been a debate over long time which has been shown in prior empirical studies. Miller and Modigliani (1961), showed the irrelevancy of dividend announcement on shareholders wealth after which many studies were undertaken by various researchers like being Bhattacharya (1979), Aharony and Swary (1980), Asquith and Mullins (1983) Miller and Rock (1985) etc to study the relevance of dividend announcement on shareholders wealth.

From the empirical studies conducted prior, mostly have shown that there is an effect on stock market return when a company announces dividend irrespective of positive or negative change reflecting the that dividends do signal information about the future prospects of the company. So this study examines the cash dividends change of positive change as good event and negative change as the bad event.

Consequently, this paper aims to study the number of average day that stock price reacts to cash dividend announcements which considers in the announcement date before the investment. It would be benefit for the investors to analyze and improve the investment plan in short run strategy if they can estimate time of peak or bottom. They would aware on the average number of day that reaches the average of maximum cumulative abnormal return and the average of minimum cumulative abnormal return after the cash dividend announcement. The sample data is collected from SETSMART for the period since January 1999 to December 2011

This paper examines the average number of day from good event to reach the average of maximum cumulative abnormal return as called "Peak". And the average number of day from bad event to reach the average of minimum cumulative abnormal return as called "Bottom".

Second, the study examines the pre-event (event period -40 to -1) return effect to the trend of rate of return of each stock which impacts to the average number of day to reach the average of maximum cumulative abnormal return for good events and average of minimum cumulative abnormal return bad events. The trend of the rate of return of each common stock in the Stock Exchange of Thailand (SET) during the pre-event period would be classified into 2 types as "Positive" and "Negative". Therefore, there are 4 types of result as positive peak, positive bottom, negative peak and negative bottom.

Third, the study continues examine the industry effect. Due to there are many types of industry in the SET, which each of them has a different business nature. Thereby, the investors would have various reactions in each cash dividend announcement of each industry. There are 8 major industries in SET as agriculture, consumption, financial, industry, property and construction, resource, services, and technology. So the industry is main information to use as the index to search the average number of day to reach the average of maximum cumulative abnormal return for good events and average of minimum cumulative abnormal return bad events.

Forth, the further examine in the investor type reactions to the cash dividend announcement. The study intends to know which the reaction of each investor type to the average number of day that reaches the average of maximum CAR for good events and average of minimum CAR.



## **CHAPTER II**

### **LITERATURE REVIEW**

Research on the study event period and the effect of dividend announcement to the stock price are relevant to this paper. Therefore, the event study methodology is conducted in this paper which is the standard approach established by Fama et al. (1969). There are the studies about the reaction of the stock return after the specific news items in order to support the idea of under reaction, which is defined as average post-event abnormal returns of the same sign as event date returns.

The study of Timm O. Sprenger and Isabell M. Welp (2011) about the stock market reaction to different types of company-specific news events showed that the absolute value of cumulative returns prior to a news event are more pronounced for positive news than they are for negative news, suggesting more widespread information. And the market reaction differs substantially across various types of news events. In addition, a cross-industry comparison indicates that industry classification may partially explain the market reaction to the same event type

From Roni Michaely, Richard H. Thaler and Kent L. Womack (1995), concluded about the price reactions to dividend initiations and omissions that the magnitude of the short-run price reactions to omissions are greater than for initiation, In the year following the announcements, prices continue to drift in the same direction, though the drift following omissions is stronger and more robust. This post-dividend initiations / omissions price drift is distinct from and more pronounced than that following earning surprise. And the stock splits could also fall in this category, examined recently by Ikenberry and Ramnath (2002), with similar conclusions.

In addition, the relation between dividend announcement and shareholder reaction has been an interesting topic in financial research over many years. Over the years there have been many studies conducted to test this relation. Of the early works are of Miller and Modigliani (1961) demonstrating that under perfect capital market conditions (i.e. absence of taxes, perfect information, rationality) there is no effect of

dividend on shareholders wealth. Although Miller and Modigliani demonstrated in perfect market that dividend policy is irrelevant, it is needed to act as an intermediary to send out information to the market participants i.e. it has informational content. This informational content of dividends concept was applied by various researchers of earlier ones being Bhattacharya (1979), Miller and Rock (1985), John and Williams (1985) to develop the dividend signaling theory. As studied by Miller and Modigliani that in perfect capital market dividend has no effect on the firm's value, however in the real world there exists no perfect capital market. In the real market world investors do not have access to all information and managers take advantage of this by using inside information to signal about the earnings of the firm by way of dividends. Aharony and Swary (1980), Asquith and Mullins (1983) took their study further to asymmetric information and cited that there is a positive relation between dividend announcement and stock returns as dividends do convey some information about a firm's future earnings. Aharony and Swary (1980) in their paper tested whether dividend announcement give more signal over current earnings about the expected future earnings. Their findings showed a remarkable increase of 1% of average excess return over the 2 day announcement period. Their studies show that dividends provide more information about the future earnings than the current earnings announced by the management. Moreover, their results at the same time also support the semi form of efficient capital market in which the stock price efficiently adjusts to the newly acquired information. Asquith and Mullins (1983) studied the dividend announcement and the dividend increment and arrived to the same conclusion as that of Aharony and Swary (1980) that dividends do convey information about future earnings and impact the stock price. However, Asquith and Mullins do not take into account the current earnings; they based their study conclusions by analyzing the announcement of dividend and dividend increase in subsequent time. For their study they tested 168 firms which either pay dividend or initiate once to pay dividends. Though the result is that dividend does signal information, the notable part is that the signal is stronger for firms which paid dividend for the first time as compared to firms which paid dividends regularly or increased the dividend in the subsequent time. Their result was an evident that dividends do affect stock price which is the shareholder's wealth indirectly. The study of Scott D. Below and Keith H. Johnson (1996) also supports the differential

share price reaction to dividend increase and decrease announcements with respect to market phase. Moreover, the market phase has a significant impact on abnormal returns around the announcement, and it appears that more information is conveyed by dividend change announcements which run counter to market phase.



## **CHAPTER III**

### **DATA AND METHODOLOGY**

#### **3.1 Data Sources**

To test the effect of the average day that the stock price reacts to cash dividend announcement, this paper is obtained the daily investors' trading type from cumulative intraday data from SETSMART for 13 successive years January 1999 to December 2011. The final file consists of identity of security, trading day, buy and sell volume and value of each investor types.

The news sample of cash dividend file is obtained from rights and benefits data file which is collected from SETSMART. This file contains all information of all corporate actions that associate with right for stockholders between 1975 and 2013 periods. The data consist of identity of security, type of corporate actions such as cash dividend or capital increase, announcement day, ex dividend day, right amount, etc. In addition, the cash dividend is collected only XD data for common stocks cover with trading data period between January 1999 and December 2011. The samples are excluded if others important news associated within study periods. Then, they are combined duplicate announcement day for the same identity security

Daily transaction data are collected from daily and monthly stock trade files from SETSMART. These two files report identity of security, opening price, close price, volume and value of trade and Set index.

After I have all required sample of news and trade data, we merge trade data with news. Incomplete and error observations are excluded.

To see overview on corporate actions cover in this study period, Table 3.1 provides the sample selection. Table 3.1 shows the summary data announcement by year which I can see that listed firms increase in number of cash dividend announcement from year 1999 to 2011.

**Table 3.1 Sample Selection**

This table presents the number of cash dividend announcement by year which the analysis covers time period from January 1999 to December 2011.

<b>YEAR</b>	<b>Total</b>
1999	27
2000	131
2001	160
2002	201
2003	263
2004	311
2005	371
2006	423
2007	445
2008	472
2009	446
2010	517
2011	543
<b>Total</b>	<b>4310</b>

### **3.2 News Classification**

For testing the dividend effect, final dividend dates announced by the companies have been collected from SETSMART database. The paper under study has chosen to take into consideration final dividends in order to test dividends effect on stock price. In this study, the dividend announcement date which has been used is defined as the date on which the company releases i.e. announces its intention to pay dividend in the near future. This piece of news appears on various leading financial newspaper and also on SET, thereby making the shareholders aware of future dividends to be paid. Neither the dividend paid date nor the ex-dividend paid date is taken into consideration. These dates have not been taken into consideration primarily because effect of an event is seen when the event is announced and not after the event is effective. In other words shareholders react when dividends are announced which make the stock price fluctuate giving abnormal returns and not when paid.

Studies conducted by Aharony and Swary (1980), Asquith and Mullins (1983) show increase in dividend are associated with a sound company that have healthy cash flows, and strong future earnings. A dividend decrease is associated with poor future earnings growth. In developed markets it is generally observed that a positive dividend change (i.e. an increase in the dividend) generates an increase in stock price thus generating an abnormal (i.e. In excess) return for the investor and a negative dividend change (i.e. a decrease in the dividend) generates a decrease in the stock price thus again generating an abnormal return but this time on the negative side for the investor.

As stated earlier, final dividend per share paid by each company has been taken into consideration for this study. The dividend change for each company for each announcement date has been calculated as follow:

$$Div_i = Div_{it} - Div_{it-1} \quad (1)$$

Where  $Div_i$  is the dividend change of stock i

$Div_{it}$  is the dividend payment of stock i on day t

$Div_{it-1}$  is the dividend payment of stock i on day t-1

After calculating the dividend change three possible outcomes are observed which are no dividend change, positive dividend change and negative dividend change. No dividend change implies that the company didn't increase nor decrease its current dividend announced compared to the previous announcement date to shareholders which results to zero dividend change excluding from the sample for calculation. Positive dividend change implies that the company increased its dividend announced to the shareholders in the current announcement date as compared to last announcement resulting to a positive increase in dividend change. Lastly, negative dividend change connotes a decrease in the current dividend announced by the company as compared to its announcement for the previous dividend resulting in a negative dividend change. Next, based on the results obtained from the above calculation, the sample divided into these two groups as: positive dividend change is good event and negative dividend change is bad event which is showed in Table 3.2 Summary Statistics for sample data. It shows the summary data announcement by effect of dividend change and by year.

**Table 3.2 Summary Statistics for sample data**

This table presents the number of cash dividend announcement by effect of dividend change from positive change as good event and negative change as bad event and by year which the analysis covers time period from January 1999 to December 2011.

<b>YEAR</b>	<b>Good</b>	<b>Bad</b>	<b>Total</b>
1999	20	5	25
2000	79	37	116
2001	90	44	134
2002	101	73	174
2003	116	96	212
2004	131	124	255
2005	147	154	301
2006	175	169	344
2007	172	179	351
2008	201	163	364
2009	153	183	336
2010	234	187	421
2011	267	195	462
<b>Total</b>	<b>1886</b>	<b>1609</b>	<b>3495</b>

### 3.3 Methodology

Standard event methodology is used in this study to examine the average days that the stock price reacts to the dividend announcement date. To test market efficiency, I calculate daily return, daily abnormal return around for each trading day. In addition, I have added the day trade (running number) based on each date.

#### Event Study

In order to access the abnormal returns generated by each stock which announced dividends from 1999 to 2011, I compute daily abnormal returns by taking the different between daily stock return and daily index return. The stock return is calculated as follow:

$$R_{it} = \left[ \frac{C_{it} - C_{i,t-1}}{C_{it}} \right] \quad (2)$$



where  $R_{it}$  is the daily return of stock  $i$  on day  $t$ .

$C_{it}$  is the close price of stock  $i$  at the end of day  $t$ .

$C_{i,t-1}$  is the close price of stock  $i$  at the end of day  $t-1$ .

Next daily abnormal returns are computed, I use market adjust return as previous study (Brown and Warner, (1985)). I calculate daily SET index return by take the different between index close on day  $t-1$  and index close on day  $t$ .

In this study, event window taken is  $\pm 40$  days around the event date (dividend announcement date) which means 40 days prior to the event (-40,-39,-38....-1) and 40 days after the event (+1,+2,+3) and 0 refers to the event date which is the day the company announces dividend as I choose 81 days windows which centered on the event day. In addition, there is only one event ID as the indicator in each event. There are no associate important events within the event windows on pre and post announcement period. Daily abnormal returns are computed as following:

$$AR_{it} = R_{it} - R_{mt} \quad (3)$$

Where  $AR_{it}$  is the abnormal return of stock  $i$  on day  $t$

$R_{it}$  is the return of stock  $i$  on day  $t$

$R_{mt}$  is the return of SET index on day  $t$

I also calculate cumulative abnormal return (CAR) across companies for each day by:

$$CAR_{i,t1,t2} = \sum_{t1}^{t2} AR_{it} \quad (4)$$

Where  $CAR_{i,t1,t2}$  is the cumulative abnormal return for each firm between day  $t1$  and day  $t2$  period. And I also add the event running number start from event period -1 till the end of post event to be parts of indicator for finding peak or bottom in each event.

### Peak and Bottom Result

Peak and bottom selection is obtained from each event that has maximum CAR and minimum CAR, respectively, along with the event running number. The running number here is the number of day per each event. Next, the average number of day to reach “peak” or “bottom” is calculated from the average of running number of



each result of maximum CAR for peak and minimum CAR for bottom. Therefore, the average running number will represent the amount of day in the average to reach the maximum CAR and minimum CAR for each announcement.

### LS-Mean Significant Test

According to the result from good news is the average number of days to reach the peak, whereas, the result from bad news is the average number of days to reach the bottom. Thereby, LS-mean significant test is used to examine the difference.

The Null Hypothesis:

$H_0$ : LS-mean of good news is equal to LS-mean of bad news

The Alternate Hypothesis:

$H_1$ : LS-mean of good news is not equal to LS-mean of bad news

If the t-test is significant, it means that the null hypothesis will be rejected and there is different between both LS- mean of good news and LS-mean of bad news.

### Simple Linear Regression Test

Simple linear regression test is used to investigate the linear relationship of the number of days which reach the maximum CAR and minimum CAR and the maximum CAR and minimum CAR. Simple linear regression test is computed as following:

$$MCAR_i = \alpha_i + (\beta_i \times RN_i) + e_i \quad (5)$$

Where  $MCAR_i$  is maximum CAR and minimum CAR of event no. i

$RN_i$  is the running no. of days of event no. i

$e_i$  is the error term of the sample

The Null Hypothesis:

$H_0$ :  $\beta_i$  is equal to zero.

The Alternate Hypothesis:

$H_1$ :  $\beta_i$  is not equal to zero.

If the t-test is significant, it means the null hypothesis will be rejected and there is a liner relationship between  $RN_i$  and  $MCAR_i$ .

### **Pre-Event Return Effect**

Pre-event return effect is used for examine the trend of rate of return of each stock impact to the number of day to reach the maximum CAR and minimum CAR of each cash dividend announcement. It is classified to 2 types as “positive trend” and “negative trend” basing on the average return of each stock during the pre-event (event period -40 to -1) of each cash dividend announcement. Moreover, the classification is also from the average return sign. Such as the average return result is positive sign, the trend of rate of return of pre-event will be classed as positive trend. In contrast with the negative result sign, the trend of rate of return of pre-event will be classed as negative trend. In addition, the trend results are based on the effect of dividend change, the good event and bad event. So the result would be positive of good event, negative of good event, positive of bad event, and negative of bad event comparing with the Table 4.1 peak and bottom result.

### **Industry Effect**

As the described in Peak and Bottom Result, industry effect uses the industry ID as index to examine the number of day to reach the peak and bottom of maximum CAR and minimum CAR, respectively.

### **Type of Investor Responding to Peak and Bottom**

To calculate trading imbalance, I follow Kaniel et al (2008). Trading imbalance is calculated by deduct selling baht value from buying baht value and divided by total buying and selling baht value on each security and investors type. The imbalance equation is as follow:

$$Timb_{i,j}^t = \frac{DBUY_{i,j}^t - DSELL_{i,j}^t}{DBUY_{i,j}^t + DSELL_{i,j}^t} \quad (6)$$

where  $Timb_{i,j}^t$  is trading imbalance on stock  $i$  at day  $t$  by investor group  $j$ .

$DBUY_{i,j}^t$  is daily buy baht value on stock  $i$  at day  $t$  by investor group  $j$ .

$DSELL_{i,j}^t$  is daily sell baht value on stock  $i$  at day  $t$  by investor group  $j$ .

In addition, to study the trend of the investor trading, the cumulative daily trading buy-sell imbalance (Timb) is essential to be indicator to find out the effect of different trading volumes of peak or bottom date after each cash dividend announcement event



## **CHAPTER IV**

### **EMPIRICAL RESULTS**

This section brings out the results for the methodology conducted in chapter III above which shows the average number of day that the stock price reacts to the cash dividend announcement. It has been observed that how many days that dividend increases and decreases are an effective signaling component. Changes in dividend payout proportions actuate abnormal stock returns through increase or decrease in stock prices as they convey important information.

#### **4.1 Peak and Bottom Result**

The study conducted for the maximum CAR and minimum CAR shows the result of average number of days in peak and bottom in Table 4.1 Peak and Bottom Result. Peak result, after the cash dividend announcement date, it spends 21 days in the average to reach the average of maximum CAR at 11.4158%. And bottom result, after the cash dividend announcement date, it spends 29 days in the average to reach the average of minimum CAR at -12.8559%. Therefore the peak result from good events and the bottom result from bad event, it is found that the peak is responded faster than the bottom to reach the average of CAR.

The total of good event and bad event are 1,886 events, and 1,609 events, respectively. There is only one of maximum CAR and minimum CAR in each good event and bad event, respectively. The CAR maximum in good event is 182.3194% while the minimum CAR is 0.00% and the minimum CAR in bad event is -149.5074% while the maximum CAR is 0.00% because of the study's assumption that the first day of CAR calculation is started at -1 of the event study date and it is no sharply decreasing in abnormal return in the average during the post event period.

In addition, table 4.1 also describes LS-mean which good event and bad event are different. Moreover, the result of test is significant at 99% of confident interval level. As a result that both events is difference to each other.

**Table 4.1 Peak and Bottom Result**

This table presents the average number of day from good event and bad event that reach the average of maximum CAR (Peak) and minimum CAR (Bottom), respective, and the result of LS-mean. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	Events	Days (Average)	Car (Average)	Day (SD)	Car (SD)	Car Max	Car Min
<b>Peak</b>	1886	20.7333 ***	11.4158% ***	16.2088	13.0856%	182.3194%	0
<b>Bottom</b>	1609	28.6159 ***	-12.8559% ***	16.0457	14.8780%	0	-149.5074%
DIFF		7.8826					
T-Value		14.40 ***					

## 4.2 Regression Analysis

Refer to the Table 4.1 Peak and Bottom Result, it is continued to investigate that the average number of day to reach the peak and bottom has the liner relationship. From the Table 4.2 Regression Analysis, it provides the analysis of variation on the F-test probability for both good and bad events that are lower than 0.001. So the simple model of both good and bad events is fitted for the population. In addition, the adjusted R-Square of good and bad events is 17.24% and 14.55%, respectively. It can be indicated that the maximum CAR of event<sub>i</sub> for 17.24% and the minimum CAR of event<sub>j</sub> for 14.55%. In addition, they are significant at 99% of confident interval level.

**Table 4.2 Regression Analysis**

This table presents the analysis of variation on the F-test probability for both good and bad events. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

<b>GOOD</b>	<b>Variable</b>	<b>Parameter Estimates</b>	<b>Standard Error</b>	<b>t Value</b>	<b>Pr &gt;  t </b>
	Intercept	0.04457	0.00445	10.01	<0.0001
	RN	0.00336	0.00016916	19.84	*** <0.0001
	R-Square		0.1728		
	Adj. R-Square		0.1724		
	F-Value		393.64		
<b>BAD</b>	<b>Variable</b>	<b>Parameter Estimates</b>	<b>Standard Error</b>	<b>t Value</b>	<b>Pr &gt;  t </b>
	Intercept	-0.02716	0.00701	-3.87	0.0001
	RN	-0.00354	0.00021374	-16.58	*** <0.0001
	R-Square		0.1460		
	Adj. R-Square		0.1455		
	F-Value		274.84		

### 4.3 Trend of Return during Pre-Event Period

As mentioned in Chapter III Data and Methodology, part 3.3 Pre-Event Return Effect, it studies the trend of the rate of return of each common stock in SET during the pre-event period which is classified into 2 types as “Positive” and “Negative” as presenting in Table 4.3 Pre-Event Effect to Peak and Bottom.

The positive and negative for pre-event trend result, it can indicate that the average number of day to reach the maximum CAR and minimum CAR is near to the average number of day of peak and bottom result. In addition, they are significant at 99% of confident interval level.

**Table 4.3 Trend of Return during Pre-Event Period**

This table presents the trend of the rate of return of each common stock in SET during the pre-event period which is classified into 2 types as “Positive” and “Negative”. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	Type of Return	Events	Days		Car				
			(Average)		(Average)	Car (SD)	Car Max	Car Min	
<b>PEAK</b>	Peak Result	1886	21	***	11.4158%	***	13.0856%	182.3194%	0
	Positive	1262	21	***	11.5432%	***	13.0813%	182.3194%	0
	Negative	614	21	***	10.9807%	***	12.9913%	113.9997%	0
<b>BOTTOM</b>	Bottom Result	1609	29	***	-12.8559%	***	14.8780%	0	-149.5074%
	Positive	967	28	***	-13.0360%	***	16.2514%	0	-149.5074%
	Negative	642	29	***	-12.5846%	***	12.5358%	0	-113.0508%

#### 4.4 Industry Effect to Peak and Bottom

The variety of industries in SET is from the different business nature which effect to the return on stock price as well. The stock price reaction to the cash dividend announcement has effected from the different industries which is shown in Table 4.4 Industry Effect to Peak and Bottom.

For peak result, the fastest industry that reach peak is MAI industry. It spends 18 days in average after the good event of cash dividend announcement to reach the average of maximum CAR at 13.2479%. And the slowest industry is service industry. It spends 24 days in average after the good event of cash dividend announcement to reach the average of maximum CAR at 11.5166%. Moreover, the sample is significance at 99% of confident interval level except the other industry which is not significance from 2 sample event. In addition, MAI industry normally, has low capitalization comparing with other industry, which also leads to small trading volume per day or less active. So it would reach the peak faster than other industries. While the slowest industries are service industries has a quite strong fundamental.

For bottom result, the fastest industry that reach peak is consumer product industry. It spends 27 days in average after the bad event of cash dividend announcement to reach the average of minimum CAR at -12.7202%. And the slowest industry is technology industry. It spends 32 days in average after the good event of cash dividend announcement to reach the average of maximum CAR at -13.0012%.



Moreover, the sample is significance at 99% of confident interval level except the other industry which is not significance from 6 sample event. Furthermore, the consumer product industry has quite good fundamental even it was hit by the bad news, the mostly investor will buy it when it undervalue anyway. While, the slowest industries are technology industries which has a quite strong fundamental and also has high trading volume per day or more active.

**Table 4.4 Industry Effect to Peak and Bottom**

This table presents the effect of the variety of industries to the average number of days to reach the average maximum CAR and minimum CAR. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

		Events	Days (Average)	Car (Average)	Car (SD)	Car Max	Car Min
<b>Peak</b>	OTHER	2	17	7.0571%	2.5779%	8.8799%	5.2343%
	Agro & Food Industry	245	22	*** 13.3274%	*** 14.9846%	85.5840%	0
	Consumer Products	173	22	*** 12.2292%	*** 12.2771%	71.0118%	0
	Financials	267	20	*** 10.6445%	*** 12.2820%	80.4688%	0
	Industrials	251	20	*** 10.6885%	*** 10.8273%	67.5682%	0
	Property & Construction	193	20	*** 10.8051%	*** 12.6317%	92.2128%	0
	Resources	135	22	*** 9.6444%	*** 17.3160%	182.3194%	0
	Services	373	24	*** 11.5166%	*** 11.4036%	100.6672%	0
	Technology	139	20	*** 10.6877%	*** 13.6523%	113.9997%	0
	MAI Industry	110	18	*** 13.2479%	*** 15.2832%	67.3663%	0
		Events	Days (Average)	Car (Average)	Car (SD)	Car Max	Car Min
<b>Bottom</b>	OTHER	6	25	-15.5872%	9.6049%	-4.3694%	-29.3549%
	Agro & Food Industry	226	30	*** -14.5789%	*** 21.1537%	0	-149.5074%
	Consumer Products	132	27	*** -12.7202%	*** 12.2770%	0	-69.7708%
	Financials	192	28	*** -12.4427%	*** 15.7540%	0	-130.5536%
	Industrials	202	29	*** -12.9058%	*** 14.5218%	0	-120.0376%
	Property & Construction	204	28	*** -12.1628%	*** 12.1915%	0	-84.8999%
	Resources	109	29	*** -11.0973%	*** 14.4361%	0	-101.5291%
	Services	296	29	*** -12.1364%	*** 13.3337%	0	-113.0508%
	Technology	121	32	*** -13.0012%	*** 12.0255%	0	-92.2960%
	MAI Industry	123	31	*** -14.4031%	*** 13.2239%	0	-81.1382%



#### **4.5 Type of Investor Responding to PEAK and BOTTOM**

By looking into each industry effect, it is also need to look at investment of different investor types. Cash dividend announcement might have an impact to the investment behavior. From Table 4.5 Type of Investor Responding to PEAK and BOTTOM, the net trading imbalance is used to measure the responding of investors. These four investor categories are Local individual, or so-called “Retail investor”, Foreign Investors, Local Institutions, and Proprietary Trading.

For peak result, after the cash dividend is announced in average of 21 days to reach the average of maximum CAR at 11.4158%, it influences local institution, proprietary trading, and foreign investors to execute the orders “Selling” in the market investing with the negative net trading imbalance of -4.4762%, 2.400%, and 6.6617%, respectively. Except the local individual execute the orders “Buying” in the market investing with the positive net trading imbalance of 1.3415%. In addition, the table is also shown that they are significance at 99% of confident interval level.

For bottom result, after the cash dividend is announced in average of 29 days in the average to reach the average of minimum CAR at -12.8559%, it influences local institution to execute the orders “Selling” in the market investing with the negative net trading imbalance of - 4.9576% which is shown the significance at 99% of confident interval level. And proprietary trading executes the orders “Buying” in the market investing with the positive net trading imbalance of 0.6127% which is shown the significance at 90% of confident interval level. The rests of investors, foreign investors and local individual are not significance at confident interval level, thus they cannot be explained the trend of trading responding to the peak and bottom.

**Table 4.5 Type of Investor Responding to PEAK and BOTTOM**

This table presents the type of investor responding to peak and bottom. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

<b>PEAK</b>			
<b>Investor Type</b>	<b>Days (Average)</b>	<b>Car (Average)</b>	<b>Net Trading Imbalance</b>
	21	11.4120%	***
Local Institution			-4.4762% ***
Proprietary Trading			-2.4003% ***
Foreign Investor			-6.6617% ***
Local Individual			1.3415% ***
<b>BOTTOM</b>			
<b>Investor Type</b>	<b>Days (Average)</b>	<b>Car (Average)</b>	<b>Net Trading Imbalance</b>
	29	-12.8438%	***
Local Institution			-4.9576% ***
Proprietary Trading			0.6127% *
Foreign Investor			-0.3562%
Local Individual			0.0973%

Moreover, the Figure 4.1 Panel A Type of Investor Responding to Peak and the Figure 4.2 Panel B Type of Investor Responding to Bottom show the significant different trading for each investor type during the study period basing on the cumulative imbalance of each investor type

The figure will represent in the percentage of each investor type, when the number is positive, it represents that investor type has a significant buying. In the other hand, the number is negative, it represents that investor type has a significant selling. CVM is represented the Local Institutions. CVP is represented the Proprietary Trading. CVF is represented the Foreign Investors. CVC is represented the Local individual. While number of day represent the event day from -1 to peak day result from Figure 4.1 Panel A and the number of day represent the event day from -1 to bottom day result from Figure 4.2 Panel B.

Based on the Figure 4.1 Panel A and the Figure 4.2 Panel B, the figures from both panels have very similar trend. The trend clearly indicates that the local institutions have a very high selling trend after the cash dividend announcement. Moreover, the proprietary trading and foreign investor constant increase selling after the cash dividend announcement as well. The only one type buying investor is local individual investor. Although, the new will be good or bad, this investor type has behavior to buy the stocks.

**Figure 4.1 Panel A Type of Investor Responding to Peak**

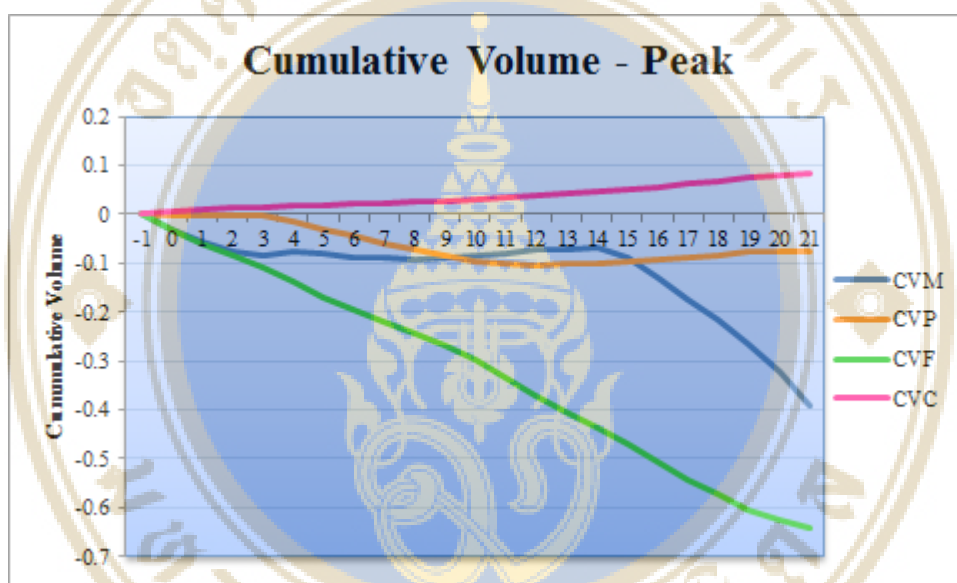
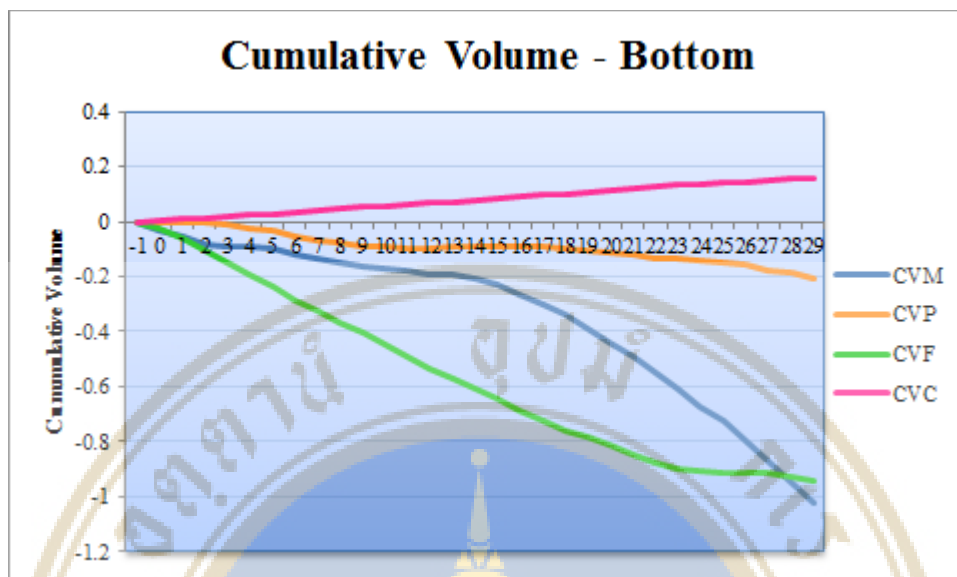


Figure 4.2 Panel B Type of Investor Responding to Bottom



## CHAPTER V

### CONCLUSION

This study demonstrates that the average number of day to reach maximum cumulative abnormal return and minimum cumulative abnormal return after the cash dividend announcement. From the empirical result, it would be found that the bad event will spend more time than the good event to reach the minimum CAR for bad event and maximum CAR for good event. For the investment planning, if the good news is expected to be announced, so the investor should hold for approximately 21 days to reach the highest return and sell on that day. In another way, if the bad news is expected to be announced, so the investor should wait for approximately 29 days to reach the lowest return and buy on that day. The paper also uses the average maximum CAR and minimum CAR to be the benchmark for planning the investment strategy of selling or buying stock.

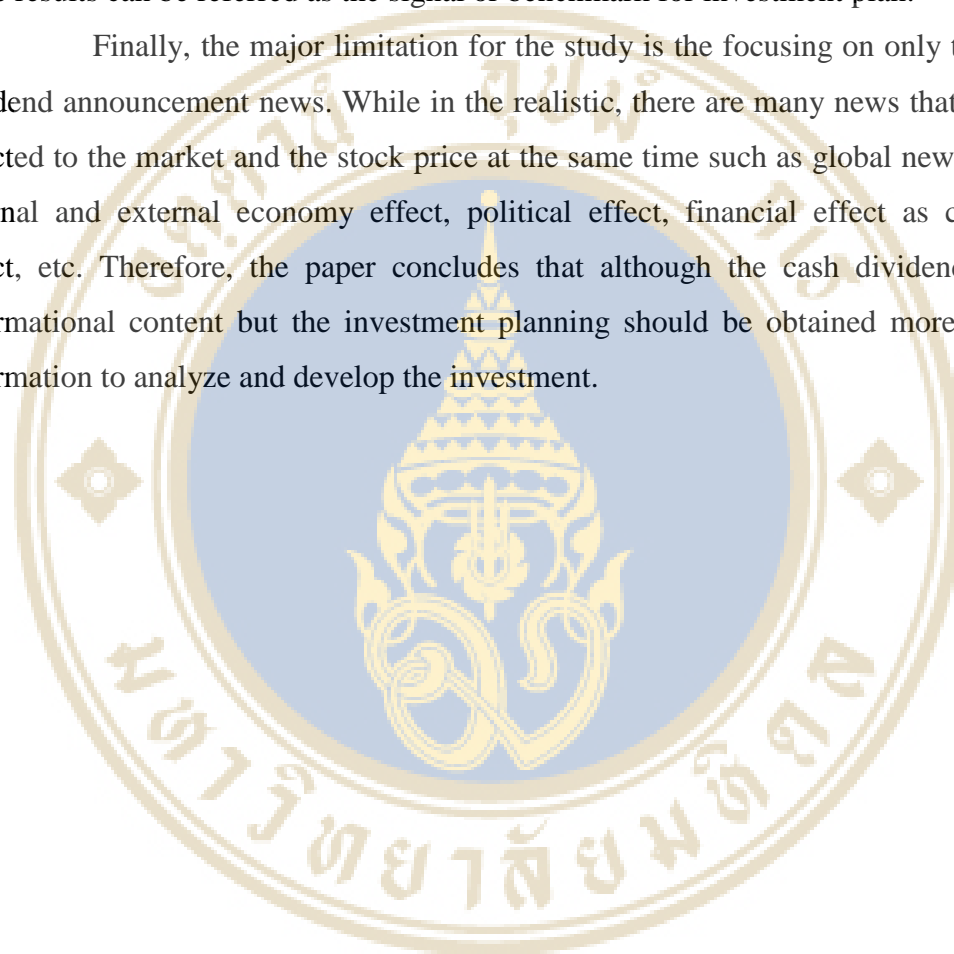
To study the trend of stock return during the pre-event period would be explained that the pre-event period before the cash dividend announcement does not have any effect to the average number of day to reach maximum CAR for good event and minimum CAR for bad event.

Further examine could be extended the industry effect. Good event, MAI industry used time after the cash dividend announcement to reach the maximum CAR faster than other industries. In other hand, the service industry used time after the cash dividend announcement to reach the maximum CAR slowest than other industries. Bad event, consumer products industry used time after the cash dividend announcement to reach the minimum CAR faster than other industries, while technology industry used time after the cash dividend announcement to reach the minimum CAR slowest than other industries. Therefore, the result can be a sign for peak and bottom forecast to reach the maximum and minimum in order to adjust the portfolio for obtaining the appropriate profit.

Finally for the study result in the daily trading imbalance at maximum

CAR date and minimum CAR date. For the peak result, the study shows that the most of investors (local institution, proprietary trading, and foreign investors) execute the order to sell in the market except the local individual which execute the order to buy in the market. For the bottom result, the study shows that local institution and, proprietary trading execute the order to sell and to buy in the market, respectively. However, it still need to study more to discover the rational of these results, therefore, these results can be referred as the signal or benchmark for investment plan.

Finally, the major limitation for the study is the focusing on only the cash dividend announcement news. While in the realistic, there are many news that will be affected to the market and the stock price at the same time such as global news effect, internal and external economy effect, political effect, financial effect as currency effect, etc. Therefore, the paper concludes that although the cash dividends have informational content but the investment planning should be obtained more related information to analyze and develop the investment.



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