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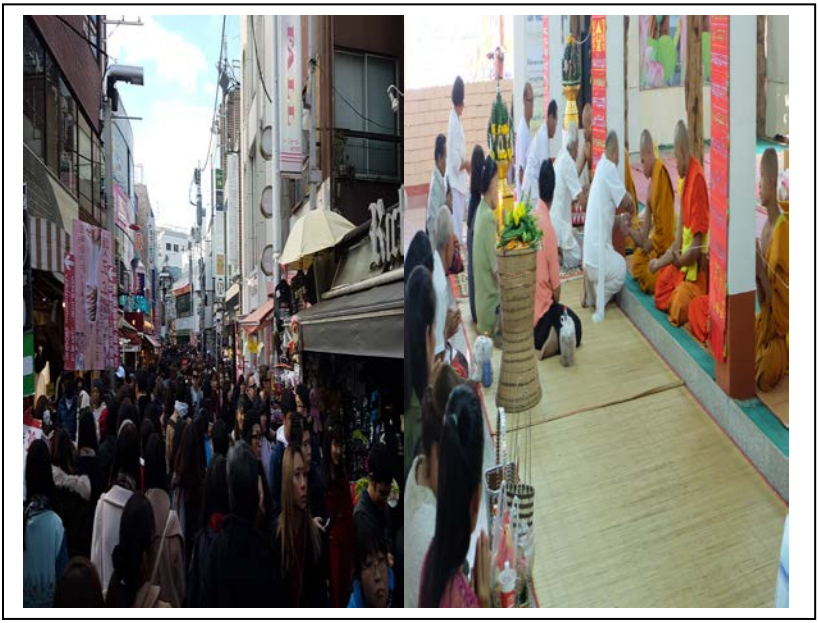

Holiday Effect in Stock Exchange of Thailand from January 1992 - August 2013

การศึกษาผลกระทบของวันหยุดทำการต่อการซื้อขายในตลาดหลักทรัพย์แห่งประเทศไทยระหว่างเดือนมกราคม 2535-เดือนสิงหาคม 2556

Eakapat Manitkajornkit*
เอกภัทร มานิตขจรกิจ

* Faculty of Business Administration, Western University, Thailand;
E-mail: eakapatm@gmail.com

Abstract

This study examines the holiday effect in the Stock Exchange of Thailand (SET) which includes both long and short holidays on different market timing. Moreover, we also observe the pattern of trading behavior of different types of investors by focusing on average net trading volume per day. An experiment is conducted using the daily SET index data from January 1, 1992 to August 31, 2013. There are totally 5,026 normal trading days with 283 pre-holidays. Both event study and regression-based approach are employed. The research found that the pre-holiday effect exists on SET and they are observable larger during the long holiday than the short holiday. We also found that during the pre-holiday, proprietary and foreign investors are the main sellers of the stock.

Keywords: Stock Exchange; Holiday Effect; Type of Investors

บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์ 1) เพื่อศึกษาถึงผลกระทบในวันหยุดทำการของตลาดหลักทรัพย์แห่งประเทศไทยซึ่งรวมถึงวันหยุดยาวและช่วงสั้นในแต่ละช่วงเวลาของตลาด 2) เพื่อศึกษาถึงรูปแบบพฤติกรรมการซื้อขายของนักลงทุนประเภทต่างๆ โดยเน้นปริมาณการซื้อขายเฉลี่ยต่อวัน การศึกษานี้ใช้วิธีการศึกษาโดยวิธีทำการทดลอง โดยใช้ข้อมูลดัชนีตลาดหลักทรัพย์ประจำวันตั้งแต่วันที่ 1 มกราคม 2535 ถึง วันที่ 31 สิงหาคม 2556 โดยมีวันทำการซื้อขายปกติ 5,026 วัน และวันหยุดเทศกาลก่อนกำหนด 283 วัน ใช้ทั้งการศึกษาเหตุการณ์และวิธีการถดถอย ผลการวิจัย พบว่า ก่อนวันหยุดมีผลต่อดัชนีตลาดหลักทรัพย์ (SET Index) และสามารถสังเกตได้ในช่วงวันหยุดยาวกว่าวันหยุดสั้นๆ นอกจากนี้ยังพบว่าในช่วงก่อนวันหยุดนักลงทุนที่เป็นบริษัทและนักลงทุนต่างชาติเป็นผู้ขายหลักของหุ้นในตลาดหลักทรัพย์แห่งประเทศไทย

คำสำคัญ : ตลาดหลักทรัพย์; ผลกระทบของวันหยุดทำการ; ประเภทของนักลงทุน

Introduction

In the last decades, numerous studies are interested in calendar anomalies causing abnormal stock returns. The holiday effect is among the best known calendar anomaly that results in significant different returns between pre-holiday and the rest of working days. First identified as early as Fields (1934), the holiday effect is arguably one of the oldest and most consistent of all seasonal regularities. Unlike some other anomalies, the pre-holiday effect seems to be persistent over time (Lakonishok and Maberly, 1990). This study provides new evidence on the existence of a holiday effect in SET markets and contributes to the literature on the efficiency of emerging financial markets. Our findings could be another relevant information to investors to make their investment decisions. The rest of the paper is structured as follows, literature reviews, objectives of the study, research methodology, results, discussion and suggestion respectively.

Objectives

1. Examines the holiday effect in the Stock Exchange of Thailand (SET) which includes both long and short holidays on different market timing.

2. To observe the pattern of trading behavior of different types of investors by focusing on average net trading volume per day.

Literature Review

In the US, Lakonishok and Maberly (1990) study returns one daybefore and after holidays and find significant abnormal returns before holidays. Ariel (1990) studies of CRSP equal-weighted and value-weighted indices from 1963-1982 and find high return prior to holiday period. Cadsby and Ratner (1992) consider Canada, Japan, Hong Kong and Australia from 1962 to 1989. The results indicate significant pre-holiday effects in all of the sample markets, with the highest returns appearing on days just prior to joint holidays. Meneu Vicente, Pardo Angle (2003) study on the existence of the pre-holiday effect in the most important stocks of Spanish Stock Exchange that is also traded in both the New York Stock Exchange and Frankfurt Stock Exchange. The result shows high abnormal returns on the trading day prior to holiday. McGuinness (2005) provides the evidence that the effect on the return before holiday had significant in the Hong Kong stock market during period 1976 to 1990. Foodd Olgadd and Gakhovich Alex (2011), using Central and Eastern Europe data, show that the mean pre-holiday returns exceed the mean returns for all non-pre- holidays. There is little research on the holiday effect in emerging market such as Stock Exchange of Thailand (SET). The purpose of this research is to present the evidence on the holiday effect for SET and to find the cause of this positive returns. This research uses SET daily index data from the main stock exchange market of Thailand. We emphasize on the common holiday to observe the pre-holiday effect on stock returns from 1992 to 2013. Our result shows that holiday effect exists in SET and long holidays are the main driven force of the holiday effect especially during up

market. We also examine different investor type trading behavior to show who is the net buyer and seller during this pre-holiday period

Research Methodology

Samples of the study

Stock Exchange Thailand (SET) was established on April 30, 1975. Trading is restricted to listed and authorized securities and supervised by the Securities Exchange Commission (SEC) (Chiyachantana & Likitapiwat, 2012). The samples for this study were the market data and trading volumes of the SET Index from January 1992 to August 2013 providing a total of 5,026 trading days and there are 283 pre-holidays during this period.

Trading is normally Monday to Friday, with the market closed on Saturdays, Sundays and official holidays. Follow the procedure of Taechapiroontong, Charoenwong, Chiyachantana and Lurang (2014), we exclude stocks with trading halts as they have impact on security returns. The Bank of Thailand regulates bank holidays, which differ slightly from those observed by the government. The main official holidays in SET is the same as that announced by Bank of Thailand. The list of legal holidays is provided in Table 1.

Table 1 : List of Legal Holidays to be observed by the Bank of Thailand and Financial Institutions in Thailand

Items	Name	Local Name
1.	Buddhist Lent Day	วันเข้าพรรษา (Wan Kao Phan Sa)
2.	Chakri Day	วันจักรี (Wan Chakkri)
3.	Chulalongkorn Day	วันปิยมหาราช (Wan Piya Maharat)
4.	Constitution Day	วันรัฐธรรมนูญ (Wan RatthaThammanun)
5.	Coronation Day	วันฉัตรมงคล (Wan Chattra Mongkhon)
6.	H.M. the King's Birthday	วันเฉลิมพระชนมพรรษาพระบาทสมเด็จพระเจ้าอยู่หัว (Wan Chaloem Phra Chonmaphansa Phra Bat Somdet Phra Chao Yu Hua)
7.	H.M. the Queen's Birthday	วันเฉลิมพระชนมพรรษาสมเด็จพระนางเจ้าฯ พระบรมราชินีนาถ (Wan Chaloem Phra Chonmaphansa Somdet Phra Nang Chao Phra Boromma Rachini Nat)
8.	Makha Bucha Day	วันมาฆบูชา (Wan Makha Bucha)
9.	Mid-Year Closing Day	วันหยุดครึ่งปีธนาคาร
10.	National Labor Day	วันแรงงาน (Wan Rang Ngarn
11.	New Year's Day	วันขึ้นปีใหม่ (Wan Khuen Pi Mai)
12.	Songkran Festival	วันสงกรานต์ (Wan Songkran)
13.	Special Holiday	วันหยุดพิเศษ
14.	Wisakha Bucha Day	วันวิสาขบูชา (Wan Wisakha Bucha)

We define a holiday as a weekday when trading would normally have occurred but did not trade. Analyzing stock market return around holidays will help the investor understand the behavior of SET stock market during a holiday period. To identify pre-holiday date, when a public holiday falls on a Monday, then last trading day is taken (Friday). If a public holiday falls on a weekend,

then Monday becomes a day off for some of the holidays. In this case, Friday returns are considered to be pre-holidays.

Table 2 , reports the descriptive statistics of the common holiday in Thailand stock market. First, there are totally 5,309 trading days which can be divided into 5,026 normal trading days and 283 pre-holiday trading day. In each pre-holiday trading days, we divided into long and short pre-holiday trading day. If there are two or more holiday consecutively, we consider it long holiday, else it would be short holiday. Out of 283 common holidays, there are 184 long holidays and 99 short holidays.

Table 2 : Sample Description for common holiday in Thailand stock market

Sample Description of market return	Number of days
Normal Trading days	5,026
Common Holiday	283
Long Holiday	184
Short Holiday	99

Methodology

We use the event study methodology to investigate holiday effect. We examine market response for the event windows of the pre-holiday. The event study at day 0 we define is the public holiday in calendar. We consider that one day before public holiday is pre-holiday. We also excluded the weekend. Then the pre-holiday period for this study is (-1,-1). The key assumption of this methodology is that the market must be efficient. The effects of the event will be reflected immediately in the stock prices. The returns are calculated as follow:

$$r(t) = \left(\frac{p(t)}{p(t-1)}\right) - 1$$

where, r (t) = stock market return from date t-1 to date t.

p(t) = stock market closing price index on date t.

p(t-1) = stock market closing price index on date t-1.

To classify the market condition into up and down market, the year with positive return is classified as an up market and the year with negative return is grouped to down market.

Results of the Study

Empirical Results

Firstly, we classify the 5,026 trading day over the period January 1992 to August 2013 into each of common holiday in Thailand. Table 3.1 represents the trading returns for the whole sample of public holiday in SET. The study shows that the market returns during the pre-holiday period is mostly positive. The average market return for pre-holiday period is approximately 0.31% which is 38 times higher than regular trading day. The returns are significant on New Year's Day, Songkarn festival day (Thai New Year), Makha Bucha Day and National Labour Day. The evidence on statistical significant demonstrates that the holiday effects are indeed exists in SET.

Table 3 : Pre-Holiday Returns for Thai Stock Mark

Holiday	Mean (%)	t Value	Min	Max	SD	N
Trading day	0.008	0.725	-14.84	12.02	1.48	5026
Buddhist Lent Day	-0.298	0.327	-3.48	2.15	1.28	22
Chakri Day	0.253	0.422	-2.55	3.05	1.19	22
Chulalongkorn Day	0.250	0.393	-2.83	4.78	1.37	21
Constitution Day	0.290	0.398	-2.77	4.28	1.56	21
Coronation Day	0.793	0.193	-2.77	10.10	2.12	21
H.M. the King's Birthday	0.068	0.793	-2.44	3.02	1.02	21
H.M. the Queen's Birthday	0.075	0.790	-2.17	2.32	1.08	22
Makha Bucha Day	0.449	0.090*	-1.38	5.92	1.37	22
Mid Year Closing Day	-0.024	0.914	-1.47	1.59	0.71	16
National Labour Day	0.685	0.051*	-3.62	6.21	1.44	22
New Year's Day	0.523	0.002*	-1.03	1.97	0.68	22
Songkran Festival	0.697	0.034*	-3.64	4.57	1.41	22
Special Holiday	0.362	0.454	-0.86	2.76	1.02	7
Wisakha Bucha Day	0.275	0.408	-2.30	3.20	1.19	22

*significance

Next, in Panel A of Table 4, we separate our calendar into normal trading day and pre-holiday to compare the difference. The average returns for pre-holiday period are 0.318% which 38 times higher than normal trading day. In Panel B we separate our data into long and short holiday. Our result show that long holiday yields significant returns of 0.3542% which is higher than yield of the short holiday of 0.25%.

Table 4 : Market returns in SET by holiday types

Holiday	Mean	t Value	Min	Max	SD	N
Panel A						
Normal Trading day	0.0082	0.35	-14.84	12.02	1.6504	5026
Pre-Holiday	0.3184	3.66*	-3.64	10.10	1.4633	283
Panel B						
Long Holiday	0.3542	3.73*	-3.64	6.21	1.2885	184
Short Holiday	0.2517	1.43	-3.48	10.10	1.7477	99

*significance

We further investigate holiday effect in different market timing. In panel A of table 3.3, during both up and down period, market returns for pre-holiday is much higher than that of the normal trading days. In panel B,

long holiday has consistent higher returns than short holiday for both up and down period. To further test the significant of the difference, we use OLS regression in the next section.

Table 5 : Market Returns under Different Market Condition.

Holiday	Up Period			Down Period		
	Mean (%)	t-Value	N	Mean (%)	t-Value	N
Panel A						
Normal Trading day	0.13*	6.76	5039	-0.11*	-4.2	3891
Pre-holiday	0.41*	5.31	284	0.19*	2.05	209
Panel B						
Long Holiday	0.43*	4.79	188	0.32*	3.1	133
Short Holiday	0.37*	2.54	96	-0.05	-0.31	76

*significance

Regression Model

To further confirm the effect of pre-holiday on returns, we employ OLS regressions and estimate regressions in the following form:

$$R_t = \beta_0 + \beta_1*(D_{pre}) + \beta_2*(D_{updown}) + \varepsilon_t$$

Where R_t is the daily set return

D_{pre} is the dummy variable for pre-holiday;

D_{updown} is dummy variable to control market condition

ε_t is a white noise error term.

We also test the effect of long versus short holiday on returns by employing following OLS regressions:

$$R_t = \beta_0 + \beta_1*(D_{Long}) + \beta_2*(D_{updown}) + \varepsilon_t$$

Where R_t is the daily set return

D_{Long} is the dummy variable for short holiday;

D_{updown} is dummy variable to control market condition

ε_t is a white noise error term.

Table 6 :The Regression for the effect of pre-holiday return

Variable	SET		
	Parameter Estimate	Standard Error	t-Value
Panel A			
Pre-Holiday	0.3113*	0.1000	3.110
Up-Down Dummy	-0.2397*	0.0451	-5.320
Panel B			
Long-holiday	0.1918*	0.0697	2.750
Up-Down Dummy	-0.2396*	0.0451	-5.320

*significance

Panel A of Table 6, shows the results of the regression of returns on a set of dummy variables for common holidays with the control market condition. The result reports significant positive returns during the pre-holiday period. The coefficient of pre-holiday variable is 0.3113 higher average returns during pre-holiday.

For panel B, we shift our focus to short and long holiday. From OLS regression, we found that the coefficient of the long holiday variable, which represents the difference in average returns between Long holiday and Short holiday, is significant at 0.1918 meaning that Long holiday returns are significantly higher than Short holiday returns.

Investor Type Trading during Pre-Holiday

The trading behavior and trading performance of various investor types in Thailand's stock market are examined using the intraday data set from the Stock Exchange of Thailand (SET) that separates investor into four types: institutional investors, proprietary traders, foreign investors and local investors. Our study on trading type is motivated by Yang, Goh, Chiyachantana (2016) which find that institutional investors trade differently from other traders and their trade significantly affect stock returns and vice versa.

Table 7, presents average daily net trading volume by four investors type for SET. During holiday local investors are the net buyer of 15.95 million shares while institutional traders, proprietary traders and foreign traders are all net seller. It is clearly seen in the table that these pattern of trading results from long holiday trading. During long holiday, only local investors are willing to keep stocks to gain profit after the holiday period.

Table 7 : Pre-Holiday Trading by Different Investor Type

		Pre-Holiday	Long Holiday	Short Holiday
Local Institutes	**Avg. Volume**	-0.81	-1.32	0.15
	t-Value	-0.3	-0.4	0.03
Proprietary Trading	**Avg. Volume**	-3.11*	-5.16*	0.69
	t-Value	-2.41	-2.93	0.41
Foreign Investors	**Avg. Volume**	-12.03	-16.76	-3.24
	t-Value	-1.36	-1.63	-0.2
Local Investors	**Avg. Volume**	15.95*	23.24*	-3.24
	t-Value	1.83	2.26	-0.2

*significance

Discussion and suggestion

This paper provides additional insights into holiday effect. Using the daily Stock Exchange of Thailand index data from January 1, 1992 to August 31, 2013, we found that there are holiday effect in SET. The main driven force of this pre-holiday effect is the long holiday. This notation is true for both up and down market condition. The market returns during long holiday is significantly higher than that of the short holiday. Furthermore, it is clearly seen that more informed trader such as proprietary trader, foreign trader and institutional traders are the net sellers during this pre-holiday period, consistent with the findings of Chiyachantana, Nuengwang, Taechapiroontong, Thanarung (2015) in that informed investors

anticipate the release of information during the holiday and sell before the holiday to reduce their risk exposure. Thus, this findings provide new evidence on security returns and trading behaviors pre- and post- holiday. Further study may examine the role of day of the week (Chiyachantana, 2013) together with the impact of holiday effect on security price and trading behavior in Thailand. We leave this potential research topic for further research.

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