

Insider Trading in Family Firms: Evidence from Thailand

Miss Paweenon Pramukkiattiyos



An Independent Study Submitted in Partial Fulfillment of the
Requirements

for the Degree of Master of Science in Finance
Department of Banking and Finance

FACULTY OF COMMERCE AND ACCOUNTANCY

Chulalongkorn University

Academic Year 2020

Copyright of Chulalongkorn University

การซื้อขายหลักทรัพย์โดยใช้ข้อมูลภายในใน บริษัท ครอบครัว: หลักฐานจากประเทศไทย



สารนิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต

สาขาวิชาการเงิน ภาควิชาการธนาคารและการเงิน

คณะพาณิชยศาสตร์และการบัญชี จุฬาลงกรณ์มหาวิทยาลัย

ปีการศึกษา 2563

ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Independent Study Title Insider Trading in Family Firms: Evidence from
Thailand
By Miss Paweenon Pramukkiattiyos
Field of Study Finance
Thesis Advisor Assistant Professor SUPARATANA
TANTHANONGSAKKUN, Ph.D.

Accepted by the FACULTY OF COMMERCE AND
ACCOUNTANCY, Chulalongkorn University in Partial Fulfillment of
the Requirement for the Master of Science

INDEPENDENT STUDY COMMITTEE

----- Chairman
()
----- Advisor
(Assistant Professor SUPARATANA
TANTHANONGSAKKUN, Ph.D.)
----- Examiner
(NARAPONG SRIVISAL, Ph.D.)
----- Examiner
(TANAKORN LIKITAPIWAT, Ph.D.)

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

ปวีณอร ประมุขเกียรติยศ : การซื้อขายหลักทรัพย์โดยใช้ข้อมูลภายในใน บริษัท ครอบครัว: หลักฐานจากประเทศไทย. (Insider Trading in Family Firms: Evidence from Thailand) อ.ที่ปรึกษา
หลัก : ศศ. ดร.สุภารัตน์ ตันทนงศักดิ์กุล



สาขาวิชา การเงิน
ปีการศึกษา 2563

ลายมือชื่อ นิสิต

ลายมือชื่อ อ.ที่ปรึกษาหลัก

6284043626 : MAJOR FINANCE

KEYWORD

D:

Paweenon Pramukkiattiyos : Insider Trading in Family Firms: Evidence from Thailand. Advisor: Asst. Prof. SUPARATANA TANTHANONGSAKKUN, Ph.D.



Field of Study: Finance

Academic Year: 2020

Student's Signature

.....
Advisor's Signature
.....

ACKNOWLEDGEMENTS

Paweenon Pramukkiattiyos



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

TABLE OF CONTENTS

	Page
ABSTRACT (THAI)	iii
ABSTRACT (ENGLISH).....	iv
ACKNOWLEDGEMENTS	v
TABLE OF CONTENTS.....	vi
1 Introduction.....	1
1.1 Introduction and motivation	1
1.2 Objectives	4
2. Literature review and hypothesis development	5
2.1 Insider trading in Thailand.....	6
2.2 Family firm	6
3. Data sources and sample selection.....	7
3.1. Insider Trading and Firm Data.....	7
3.2 Family Firm	10
4. Methodology	12
4.1 Hypothesis development.....	12
4.2 Event study analysis	15
4.3 Cross-sectional regression analysis	19
5. Results and Conclusions	21
5.1 Abnormal returns around insider trading.....	21
5.2 The Effect of Family Ownership	25
5.3 Cross-sectional Regression Analysis	26
5.4 Conclusions.....	30
REFERENCES	32
VITA.....	35

List of Tables

Tables	Page
Table1: Dataset selection procedure	9
Table2: Summary statistics from 2016 – 2019	11
Table3: The cumulative abnormal return around insider's trading transaction	22
Table4: Abnormal return to insider's transaction according to family ownership and control	26
Table5: Cross-sectional regression analysis	28
Table6: Summary of findings	30

List of figures

Figures	Page
Figure1: The cumulative daily abnormal return for purchases transactions	23
Figure1: The cumulative daily abnormal return for sales transactions	24



List of abbreviations

Symbols/Abbreviations	Terms
CAR	Cumulative Abnormal Return
CAAR	Cumulative Average Abnormal Return
SEA	Securities and Exchange Act
SEC	Securities and Exchange Commission



Abstract

This study examines the profitability of corporate insider trading in Thailand's stock market and whether the abnormal return depends on the company's characteristics and insider characteristics. The result shows that there is a significant abnormal return on corporate insider trading transactions. The difference in ownership structure is also important, with the results supporting that insider trading by family firms is more profitable than non-family firms. Moreover, the finding indicates that the trading of CEOs has more valuable information about the company's prospects than other insiders.



1 Introduction

1.1 Introduction and motivation

Corporate insiders' trading behavior involves material and non-public knowledge that has information on the valuation of an asset and produces the potential to receive an abnormal return from superior information. For example, Seyhun (1986) find that corporate insider trades predict abnormal returns. Although the importance of the business is unclear, their major contribution to market discovery seems to be a beneficial result of insider trading. Moreover, a firm's ownership characteristic may have a major impact on the leakage of information from the company. Anderson et al. (2012) highlight that corporate insiders in family firms is possible to involve in informed trading. This allows corporate insiders, who are close to the family, to exercise extensive control over the companies. This characteristic may lead insiders who first know special information to potentially use this information to gain abnormal return by trading on their own securities, resulting in managerial agency problems since the private benefits of control are large.

Most of previous studies concentrate on significant abnormal returns from insider trading in many financial markets such as the U.S. stock markets, Jaffe (1974) and Finnerty (1976) further show that it was possible for insider traders to make positive, mainly large, trading profits, and that outsiders could also earn profits by simply following the trading of insiders after the public release of insider open-market transactions data. Moreover, after the end of the 80s, the common of studies (Seyhun, 1986, Rozeff and Zaman, 1988, Lin and Howe, 1990 and Lakonishok and Lee, 2001) reveal two key components comparing with previous research. First, insiders are still

able to make abnormal profits, but these profits are not especially high. Second, outsiders mimicking them are not able to earn abnormal returns, net of transaction costs. More recently, researchers have shown similar results about the financial markets of the United States (Tavakoli et al., 2012 and Cohen et al., 2012) Insiders are still able to make abnormal returns from their transactions, but these abnormal returns are very small. In addition, research studies conducted on the German stock market (Linnertová and Deev, 2015) and on the British stock market (Pope et al., 1990) be susceptible to verify the same evidence: Corporate insiders are able to make abnormal returns

Overall, from all research, several main results emerge. First, it seems that it contain valuable information in corporate insider trading transactions, as they can earn abnormal profits. Second, individual investors who only observe and then mimic the actions of corporate insiders cannot earn abnormal returns.

Previous insider trading studies indicate insiders' potential to make abnormal profits, thus refusing the strong form of the Efficient Market Hypothesis. Among these prior efforts, the majority have primarily focused on U.S. capital markets, then their conclusions may not be applicable to other stock market. In addition, the study with the similar objective has been studied on Asian markets just a few, especially the stock markets of Thailand. Accordingly, this paper seeks to fill this gap by focusing on the Stock Exchange of Thailand (SET).

Over the last few years, some studies have found family ownership to be the most common form of corporate ownership in the world, although this type of ownership is uncommon in the US. (e. g., Claessens, Djankov and Lang, 2000;

Bertrand, et al. 2008). Substantial ownership can make it possible for family members to receive personal benefits at the expense of minority shareholders. In addition, controlling shareholders may accrue personal benefits by earnings excess returns on trading their own stocks - a possibility that has not been investigated in the prior literature in Thailand. This paper fill in this gap by examining the differences in insider trading of corporate insider behavior between family member and non-family member in family-controlled businesses in Thailand market.

Controlling families of family-own businesses are different from other investors. Anderson and Reeb (2003) indicate that family-own business has lengthy investment horizons and undiversified portfolios where distinguish founding family members from both small atomistic shareholders. These attributes give the founding family members special incentives and means to obtain more detailed knowledge of the business relative to traditional managers and outside investors. The central position of controlling family members within the firm also allow them with greater flexibility to manipulate private information. Thus, compared to other investors, founding family members can use their position for their own benefits and are best able to harvest the surplus income from their stock exchanges.

Insider trading in the Thai stock market is interesting and exclusive in its own setting. Laoniramai (2012), Glaewketgarn (2013) documents that the number of Thai listed family firm are around 77% in the market. Budsaratagoon, Hillier and Lhaopadchan (2012) suggest that the country has weak financial institutions, legal security and regulation, and an external governance mechanism. Thailand also has appropriate publicly available data of both listed and private companies, which can

identify the shareholders structure with accuracy. So, we base our study on the Stock Exchange of Thailand (SET) and Market for Alternative Investment (MAI).

To narrow the gap in the literature regarding insider trading and corporate insider's characteristics, in this paper focuses on how family-controlled structures can influence the information asymmetry of insider trading. I also explore more on insider characteristic where potential information leakage come from family insiders or non-family insiders during a large information asymmetry period such as before firm's earnings and dividend announcement.

1.2 Objectives

To examine on how company's ownership structures can influence trading behavior between the family-controlled businesses and non-family companies in Thailand market for a sample of Thai stock market during Jan 2016 – Dec 2019.

To inspect the empirical of insider characteristic between family insiders or non-family insiders for a sample of Thai stock market during Jan 2016 – Dec 2019.

This paper focuses only on publicly transactions involving the selling and purchasing of securities by insiders without the use of undisclosed knowledge. Thai SEC require all insiders to disclose their trades within three days of the trading day and the trade information is shown on the SEC website at the end of the day. Moreover, insider who are not follow the Section 59 will be penalized for delayed reporting without an appropriate reason. This 3-day interval is shorter compared to

others. There is up to 6 days in the UK and up to 40 days in the US. Therefore, I expect insider trades in Thailand to be particularly informative.

This study has at least two contributions. First, we examine the extent to which corporate insider characteristics in family-owned firm affect firm's information leakage in Thailand. Second, my study provides more evidence to the research on insider trading. We provide evidence of how various types of CEOs and ownership structures influence insider trading conduct. However, this analysis has some drawbacks because insider trading data is derived from reports filed by the insiders.

The rest of the paper is organized as follows. Section 2 presents literature review and hypothesis development. Section 3 describes the data sources and the sample. Section 4 presents the research method Section 5 results and concludes the paper.

2. Literature review and hypothesis development

Previous studies on insider trading focused on insiders' profit and outsider's profit who follows insider's trading transaction in stock which have two main conclusions. First, corporate insiders have ability to earn significant profits by trading the securities of their own firms. Second, outsiders use publicly available information about insider trading to earn significant abnormal profits like insiders. However, some studies such as Rozeff and Zaman (1988), argued that the abnormal profits disappear from transaction costs such as commission fees and bid-ask spread.

2.1 Insider trading in Thailand

In developing countries like Thailand, Boonyawat, Jumreornvong and Limpaphayom (2005) document that the corporate insiders can earn abnormal returns especially from purchase transactions. Also indicate that outsiders who follow insider buying signals can make abnormal returns as well. Moreover, Budsaratragoon, Hillier and Lhaopadchan (2012) claim that the corporate insiders are likely to take their informational advantages to gain personal profits.

According to Securities and Exchange Commission's (SEC) of Thailand's Act of B.E 2535 section 59 regulates that insiders are required to disclose their trading transaction by filling form 59-2 for management trading information within three business days of any change their interests, which is the original source for insiders' trading information. Also stringent restrictions on the 3-day reporting interval for companies are enforced by the SEC of Thailand, though abnormal return from insider trading is still apparent. In other words, outsiders may gain abnormal profits by trading like insiders.

2.2 Family firm

Prior research generally argue that family insiders hold more information due to their long-standing knowledge and major control over the firm (e.g. Anderson and Reeb, 2003, Ali et al., 2007, Chen et al., 2008, Chan et al., 2010). With benefit of easy access to privileged information create chance of engaging in informed trading on their own or by supplying information to outside investors. Also, stringent insider trading laws, tightly regulated and monitored insiders of the family may still have information leaked to their relatives or associates with less public scrutiny.

On the other hand, the family firm also has incentives to limit informed trading. First, as long-term investors, they are less likely to trade for short-term benefits. Founding family often keep the family business for future generations (Villalonga and Amit, 2006). Second, the family founders and heirs especially concern about the reputation and commitment to the firm. Therefore, they are less likely to engage in information-based transactions to outside investors, which could harm their economic benefits and reputation.

In our study, we focus on family firms and explore whether family control and affiliation to the family can influence corporate insiders' potential to engage in information leakage.

3. Data sources and sample selection

3.1. Insider Trading and Firm Data

This study uses the insider trading information data from the 59-2 Form¹ provided by the Securities and Exchange Commission's (SEC) during Jan 2016 – Dec 2019. Insider trading with only purchase and sale transactions in Thailand are quite large around 2,000 to 3,000 per year so they make good representation for the study. The data in Form 59-2 contains (1) name of company and management, (2) relationship to management positions, (3) report date which is the date that corporate insider submits the form to SEC, (4) filing date which is the date that the SEC

¹ Bases on Securities and Exchange Act of B.E. 2535 Section 59, the director, manager, person who holds management position as specified in the notification of the SEC Office, and an auditor of the securities issuing company must prepare and submit Form 59-2 to the SEC Office on each person's securities holding and the holding of their spouse, cohabiting couple and minor children in accordance with the rules and procedures as specified in the notification of the SEC Office within 3 days after the transaction date.

submits the form (usually the same as report date), (5) transaction date which is the date that corporate insiders trade their own securities, (6) types of securities that are traded mostly are common share, warrant and units, (7) number of securities that are traded, (8) average securities that are traded,(9) method of acquisition and disposition. . The insiders are obliged to report with no exception

Stocks included in the sample are listed stocks and have at least 200 days return prior to the trading day as the event day to ensure that I have the complete data set to perform the event study. The study period covers from during Jan 2016 – Dec 2019 since the 59-2 form can be retrieved from SEC's website only 3 years backward from the filling date. In dataset selection procedure, from the original dataset, I select only purchase and sales transactions and only common stock transactions. Firms that do not have complete financial data available for fiscal year 2016-2019, newly listed firms, delisted firms, inactive firms, or firms undergoing financial rehabilitation or restructuring are also excluded from the sample. I also exclude the insiders' trades in financial firms due to the difference in nature of monitoring mechanisms. Then rule out transactions which do not have sufficient price data to conduct the event study with pre-event window of 31 days and an estimation window of 200 days.

To identify day 0, I aggregate the purchases and sales by different insiders in shares of the same company on the same month of trading day to avoid overlapping transactions. Then select the last transaction in each month as the day 0 with the sum amount of net purchase or sales transaction.

Thus, this study investigates only trading (purchase and sales) of common shares traded in the Stock Exchange of Thailand (SET) and Market for Alternative

Investment (MAI). Since the SEC will announce the insider-trading transaction one day after receiving the form, we assume this day as the public announcement date.

Table 1: Dataset selection procedure

This table demonstrates the sample selection process before reaching the final data set with the reason to exclude observations in the first column and the remaining observation in the second column. The final dataset consists of 4,647 observations (2,953 purchases and 1,694 sales) in 388 companies (SET 316 companies and MAI 72 companies). The main difference between initial number and final data set result from monthly sum up of net purchases and sales of each company together.

Sample selection procedure	Remaining observations
Initial number of observations	24,233
Selecting only common stock	21,761
Selecting only purchase and sell transaction	20,831
After excluding firm with incomplete financial data	18,603
After excluding firm in financial industry	17,244
After aggregating the purchases and sales and rule out transactions which do not have sufficient price data to conduct the event study.	4,647

My data also cover company specific information such as accounting data, ownership structure, number of shares outstanding which are collected from the Stock Exchange of Thailand and SETSMART. I obtain the trading data from Thai SEC. The control variables are obtained from Bloomberg

3.2 Family Firm

Prior researches provide suggestions on how to classify family firms. The 1992 Limited Public Company Act allows shareholders who own at least 25% to vote some important resolutions such as issuing seasoned shares and performing merger and acquisition. However, there are possibilities that the significant shareholder is the only ultimate owner or with a second controlling shareholder who owns at least 10% or 20% voting rights. In this paper, considering family ownership in Thai market, I implement cut-off at 10% as ultimate shareholders'.

To clearly identify the ownership structure and determine whether or not a sample firm is considered to be family-owned based on the identity of the shareholders. In this paper use the SETSMART database provided by the Stock Exchange of Thailand, which lists up to 0.5% of shareholding of each firm. Then identify family ownership with data limitation, counting shareholders with the same surname as family for direct shareholdings. Moreover, if shares owned by another public or privately held company, we trace upward for identify indirect shareholdings. Then aggregating shares owned by individual family members or owned by family-affiliated firms under family control to find total family ownership. We classify any company in the sample with using list of shareholdings only in 2018 because the ownership structure of Thai listed companies, especially family firms, are not complex and are barely change the ultimate shareholder. They are preferable to maintain their control through company's structure (Claessens, Djankov and Lang, 2000). The ownership structure data are manually collected from SETSMART.

Table 2: Summary Statistics from 2016 – 2019

This table shows the distribution during 2016 to 2019 of the number of transactions separated into purchase transactions and sales transaction of the insider trading, number of firm and value of transaction in thousand baht. The standardizations are high since there are big gap between minimum and maximum insider trading transaction.

	All	Purchase	Sales
No. of transaction			
All transactions	4,647	2,953	1,694
Transaction in Family firm	2,856	1,831	1,025
Transaction in Family member	1,224	911	313
Transaction in Family CEO	250	166	84
No. of firm			
No. of all firms	388	345	294
No. of family firms	208	188	159
Value of insider trading transaction (Thousand baht)			
Median		355	955
Mean		12,457	32,081
Maximum		8,279,464	2,500,000
Minimum		0.12	0.03
Std. Dev.		180,087	179,001

4. Methodology

4.1 Hypothesis development

As a first step in this paper, I test the hypothesis¹ that insiders' transactions contain valuable information or the market believes that their trades contain favorable information. Insiders' sales may contain less valuable information because they could sell their shares due to personal liquidity needs or remuneration rather than expectations of decreasing in future value of the firm and insider purchases can earn four times abnormal return compare to sales in US market (Lakonishok and Lee, 2001) as well as the evidence from Fildmuc, Goergen, and Renneboog (2006) in UK market.

In developing countries like Thailand, Boonyawat, Jumreornvong and Limpaphayom (2005) find that the corporate insiders can gain abnormal returns from purchase transactions. Budsaratagoon, Hillier and Lhaopadchan (2012) show that the insiders earn abnormal returns from trading around earnings announcement.

Hypothesis 1: Insider trading and abnormal return

H1(a) Insiders' purchases result in positive abnormal return.

Base in the studies of Jaffe (1974), Seyhun (1986) and Lin and Howe (1990) which conclude that if insiders have some superior information and believe that stock price would be rise in the future because of favorable information, they would purchase the stock prior to the release of such information. Consequently, cumulative average abnormal return (CAR) should be positive after insider trading day. This conclusion implies that the insider be able to forecast the future stock movement. If

not, the CAR would become zero or negative following the trading day. Thus, leads to the conclusion that the insider cannot forecast the future trend of stock price.

H1(b) Insiders' sales result in negative abnormal return.

Base in the studies of Jaffe (1974), Seyhun (1986) and Lin and Howe (1990) which conclude that If insider have some superior information, and they believe that stock price would drop in the future because of unfavorable information, they would sell the stock price prior the release of such information. Then negative CAAR should be found following the trading day. This proposition also leads to the conclusion that insider can predict future stock movement. If not. The CAAR would become zero or positive following the trading day.

H1(c) Absolute value of abnormal return to insiders' purchases is lower compare to those of sales.

However, in Thailand, due to the high concentrated ownership structures, the outcomes may differ. Franks, Mayer and Renneboog (2001) propose the entrenchment effect which implies that shareholders with considerable voting rights may become unaccountable and manipulate their private benefits from the expense of minority shareholders. Therefore, the market may respond negatively to insiders' purchase. I expect that the abnormal return from sales effect overshadows the abnormal return from purchase.

Next, I focus on insiders trading in firm characteristic. By structure, family firms have conflict of interest between management and shareholders (Anderson and Reeb, 2003). In some cases, family firms are managed by unaffiliated professional CEOs.

Hypothesis 2:

H2(a) The abnormal return to the transactions of family firms is larger than non-family firms.

Concentrated ownership structure allows large or controlling shareholders to take advantage of resources from minority shareholders. For example, Shleifer and Vishny 1997, Franks, Mayer and Renneboog (2001) and Faccio and Lasfer (1999) find that managements with substantial voting power can hold their positions even though they deliver poor performance

H2(b) Among family firm, the abnormal return to the transactions of family firms' insiders is larger than non-family firms' insiders.

Controlling family usually maintains long- term investment horizon in their firms and places family members as the firm's CEOs or top management positions (Anderson and Reeb, 2003). So, family members hold superior inside information and industry environment compared to the outsiders (Kwak, 2003; Anderson and Reeb, 2003). I expect that the stock trades made by the family firms' insider are more profitable than those made by non-family firms' insider.

Another factor included in my consideration is whether the CEOs of the family firms are family member or outsiders.

H2(c) Among family insider in family firm, the abnormal return to the insiders' transactions of family firms with family member as CEOs is higher than the transactions of family firms as non-CEOs.

Anderson and Reeb (2004) suggest that family shareholders can gain an information advantage by sending one of their family members to hold an active role in the management. Since CEOs have more complete information about the company's current operations and future prospects. Lin and Howe (1990) also test the effect of valuable information and find the strong supporting evidence that CEOs have more information than large shareholders who are not familiar with the company's operation. I expect that insider trades in family firms whose CEOs are family member can earn higher abnormal returns compared to firms managed by professional CEOs.

4.2 Event study analysis

For testing insider trading and abnormal return, I implement a standard event study methodology to observe market reactions from insiders' trades. I perform event studies for insider purchases and sales separately and the event date or day0 is defined as the trading day. If insider trading rules are effective, there should be no abnormal price changes before the public release of relevant news, but should be a clean jump on stock price only on the announcement date.

Computing cumulative abnormal returns by using market model as the benchmark. Brown and Warner (1985) suggest that OLS can be implemented to obtain the beta without misspecifications. The event windows are 30 days prior to and after the event date. Because of blackout policy², thoroughly, I have to ascertain that

² According to Section 56 in The 1992 Securities and Exchange Act (SEA), a publicly listed firm must disclose its corporate policy to prevent illegal insider trading in the annual report (Form 56- 1). Thus, some firms voluntarily declare their own ' blackout policy' which prohibits insider trades their own securities prior to the disclosure of quarterly and annual financial statements and during the period as specified by the firm. The policy operates to prevent insiders to gain advantages from related earnings news (Bettis, Coles and Lemmon, 2000).

significant CAR is due to information value of insiders' trades rather than sensitive news. The beta is estimated from 200 to 31 days before the event dates.

Abnormal return and significant test

To investigate abnormal return (AR), using market model by assuming the last insider trading day in each month as the event day (day 0) and the daily return on stock $r_{i,t}$ for security i on day t , with 200 days pre-event and 30 day pre-event daily return data. The model is as follow;

$$r_{i,t} = \alpha_{i,t} + \beta_{i,t} r_{m,t} + \varepsilon_{i,t} \quad \text{for } t = -200, -30 \quad \dots(1)$$

Where

$r_{i,t}$ = Return on stock i on day t

$r_{m,t}$ = Return on value-weighted portfolio of all SET stocks on day t

$\alpha_{i,t}, \beta_{i,t}$ = Market model intercept and slope as of day t

$\varepsilon_{i,t}$ = Disturbance term assumed to be normally distributed with zero mean and constant variance.

The ordinary least squares (OLS) method is used to estimate model parameter $\alpha_{i,t}$ and $\beta_{i,t}$ with 200 days pre-event and 30 days pre-event daily return data, excluding period of 30 days before to 30 days after the event day. Applying these estimates to realized returns on the market portfolio during the event period of 61 days (i.e., 30 days prior to and 30 days after the event date) in order to get the estimated risk adjusted return for each security for each event date because there were many transactions traded by corporate insiders in each month, we decided to use a

non-overlapping one-month period to classify insider's transaction in order to make window clean from other effects.

Then we calculate the abnormal return ($AR_{i,t}$) for security i on day t , from 30 days before to 30 days after each event by subtracting the estimated return from the realized return for each security and for each event day. That is the model as follows;

$$AR_{i,t} = (r_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i r_{m,t})) \quad \text{for } t = -30, 30 \quad \dots(2)$$

Where

$AR_{i,t}$ = Abnormal return for security i on day t

$\hat{\alpha}_i + \hat{\beta}_i$ = Estimated market model intercept and slope

Next, the average portfolio abnormal return is calculated for the event day t (AAR_t). AAR_t represents the average of all abnormal return for K securities in a given portfolio on day t , where t is the trading day.

$$AAR_t = \frac{1}{K} \sum_{t=1}^{K_t} AR_{i,t} \quad \text{for } t = -30, 30 \quad \dots(3)$$

Where

K_t = Number of firm's abnormal return on event day t

To examine performance over a holding period, we calculate the cumulative daily average abnormal return ($CAAR$) from event day t_1 to event day t_2 by summing the daily average abnormal return as follows;

$$CAAR(t_1, t_2) = \sum_{t=t_1}^{t_2} AAR_t \quad \text{for } t = t_1, t_2 \quad \dots(4)$$

Following Brown and Warner (1985), the statistical significances of the average portfolio abnormal return are measured by standardizing the average portfolio abnormal return by their sample standard error that calculated by using the estimation period both pre-event and post-event, $\hat{\sigma}(AAR)$,

$$t(AAR_t) = AAR_t / \hat{\sigma}(AAR) \quad \dots(5)$$

Where

AAR = Average abnormal return over n different firms on day t

$\hat{\sigma}(APE)$ = Standard deviation of the average abnormal return obtained from the estimation period between day -200 and day -31 before the event day and between day 31 and day 30 after the event day

My null Hypotheses 1 and 2 states that CAAR is equal to zero which implies the strong form efficiency. To test the mentioned hypothesis, I follow Barber and Lyon (1997) and implement the following cross-sectional test statistics:

$$t(CAAR(t_1, t_2)) = \frac{CAAR(t_1, t_2)}{\hat{\sigma}(CAR) / \sqrt{n}} \quad \dots(6)$$

Where

$CAR(t_1, t_2)$ = Cumulative abnormal return across t_1 to t_2 periods of firm i , calculated by

$$CAR_{t_1, t_2} = \sum_{t=t_1}^{t_2} AR_{t_1, t_2}$$

$CAAR(t_1, t_2)$ = Cumulative abnormal return across t period over n different firms or Cumulative average abnormal return return between t_1 to t_2 periods

$\hat{\sigma}(CAR)$ = Standard deviation of the cumulative abnormal return of the cross-sectional sample of n firms on t_1 to t_2 periods

n = Number of sample firms

Brown and Warner (1985) suggest that traditional test statistic is horizontal to an event-induced increase in variances. They demonstrate that if variance is underestimated, this test will lead to more frequent null hypothesis rejection even when the average abnormal return is zero. To handle with the problem of event-induced variance, I implement standardized cross-sectional test proposed by Boehmer, Masumeci, and Poulsen (1991). The test follows standardization of abnormal returns by divided by the residual variance from market model regression.

4.3 Cross-sectional regression analysis

For testing hypothesis H2, we implement cross-sectional OLS analysis. The dependent variable is the estimate of insider's abnormal profit, which is cumulative daily average abnormal return 30 days after the event date (CAAR) (1, 30) because it can represent the complete abnormal return on insider trades. FAMILYFIRM is an indicator variable that is equal to one if the company is a family firm, and zero otherwise. As same as FAMILYMEMBER that indicate type of insider (family firm's insiders versus non-family firm's insiders) and FAMILYCEOs that indicate type of CEOs whether family member of controlling shareholder(s) hold the position as CEOs or not (Family CEOs versus Non-Family CEOs). VALUE is transaction value of the share purchased or sold.

We control for various factors that could affect insider trading profitability. First, we control for firm size (SIZE) since the literature finds that both insider trading

activity and profitability are associated with firm size (Seyhun, 1986; Lakonishok and Lee, 2001). Second, we control for firms' growth options (MB) since several studies suggest insiders trade as contrarians. Rozeff and Zaman (1998)'s pattern of trading across market-to-book portfolios could reflect insiders trading on market pricing errors (e.g., over-reaction to past performance), but it could also reflect insiders' superior knowledge of future earnings performance. Third, we are assuming that return on asset (ROA) is an unbiased representation of the market's expectation about next year's earnings performance to control for prior firm performance; thus, changes in annual earnings represent private information held by management

$$CAAR (1,30) = \alpha_0 + \alpha_1 (FAMILYFIRM) + \alpha_2 (FAMILYMEMBER) + \alpha_3 (FAMILYCEOs) + \alpha_4 (VALUE) + \alpha_5 (SIZE) + \alpha_6 (MB) + \alpha_7 (ROA) + \varepsilon \quad \dots(7)$$

In order to avoid multicollinearity problem, cross-sectional OLS analysis is divided into 3 parts with different value of dummy variable for getting more precise test of the effect of hypothesis H2(a), H2(b) and H2(c) as follows;

For H2(a), to test the relationship among the estimate of insider's abnormal profit, firms' characteristic and financial constraints.

$$CAAR (1,30) = \alpha_0 + \alpha_1 (FAMILYFIRM) + \alpha_2 (VALUE) + \alpha_3 (SIZE) + \alpha_4 (MB) + \alpha_5 (ROA) + \varepsilon \quad \dots(8)$$

H2(b), to test the relationship among the estimate of insider's abnormal profit, firms' characteristic, insider's characteristic, and financial constraints.

$$CAAR (1,30) = \alpha_0 + \alpha_1 (FAMILYFIRM) + \alpha_2 (FAMILYMEMBER) + \alpha_3 (VALUE) + \alpha_4 (SIZE) + \alpha_5 (MB) + \alpha_6 (ROA) + \varepsilon \quad \dots(9)$$

H2(c), to test the relationship among the estimate of insider's abnormal profit, firms' characteristic, insider's characteristic, information level and financial constraints.

$$CAAR (1,30) = \alpha_0 + \alpha_1 (FAMILYFIRM) + \alpha_2 (FAMILYMEMBER) + \alpha_3 (FAMILYCEOs) + \alpha_4 (VALUE) + \alpha_5 (SIZE) + \alpha_6 (MB) + \alpha_7 (ROA) + \varepsilon \quad \dots(10)$$

5. Results and Conclusions

I start this chapter by presenting the cumulative abnormal return (CAAR) occurred around insiders purchases and sales in 5.1 I implement different test statistics as described in the methodology. Then, I discuss the cumulative abnormal return further with the effect of family ownership in 5.2. In the second section, I compare the cross-sectional regression results with the event study results for investigating family characteristic effect in 5.3.

5.1 Abnormal returns around insider trading

The cumulative abnormal return for purchases transactions and sales transactions with their t-statistics are represented in table4 and the cumulative daily abnormal return for purchase transactions and sales transactions are plotted in figure 1 and 2, respectively.

Table 3: The cumulative abnormal return around Insiders' trading transaction

This table shows the cumulative average abnormal return (CAARs) for insiders' purchases and sales for eight intervals around trading date: full event period (-30, 30), pre-event period (-30,0), (-20,0) and (-10,0), event date (0,1) and post-event period (1,10), (1,20) and (1,30).

	CAAR(-30,30)	CAAR(-30,0)	CAAR(-20,0)	CAAR(-10,0)	CAAR(1)	CAAR(1,10)	CAAR(1,20)	CAAR(1,30)
<i>All Purchase</i>								
CAAR	-2.8208%	-4.1976%	-3.5924%	-2.6700%	0.6767%	1.1797%	1.2519%	1.3767%
t_{CAPE}	-4.2759	-7.6507	-7.3684	-6.4543	5.7729***	4.83444***	4.1852***	3.4765***
<i>All Sales</i>								
CAAR	4.4039%	6.3268%	5.9372%	4.0920%	-0.4544%	-0.8032%	-1.0473%	-1.9228%
t_{CAPE}	4.6171	7.9005	8.1627	7.7692	-3.0467***	-2.3995***	-2.1310**	-3.1183***

*, ** and *** represent significant at 10, 5 and 1 percent level with one-tail t-test, respectively.

Consistent with the Hypothesis 1(a) which states that there is positive abnormal return following insider's purchases. The post event CAARs (CAAR1,10, CAAR1,20 and CAAR1,30) in purchase transactions are 1.18%, 1.25% and 1.38% respectively. When insiders' purchase will gain positive abnormal returns. Moreover, Consistent with Hypothesis 1(b) which states that there is negative abnormal return following insider's sales. The post event CAARs (CAAR1,10, CAAR1,20 and CAAR1,30) in sales transactions are -0.80%, -1.05% and -1.92% respectively. The post event CAARs values in both sales and purchase transactions are significantly different from zero regardless of the statistic test.

In contrast with the many insider trading literatures Franks, Mayer and Renneboog (2001), I hypothesize in 1(c) that an absolute value of abnormal return

from insiders' purchases is lower compared to sales. The absolute CAARs for post event are inconsistent with the hypothesis except the absolute CAARs 1,30 for purchase are little bit lower than sales. So, the result failed to reject Hypothesis 1(c). The possible explanation is following Scott and Xu (2004) where only large sales that also accounted for large percentages of insiders' holdings predicted significantly negative future abnormal returns. Small sales that represented small percentages of shares owned not only did not predict poor performance but were associated with significantly positive abnormal returns. The complete picture of purchases and sales patterns are illustrated in Figure 1 and 2.

Figure 1 shows the cumulative daily abnormal return of purchases transactions over the event window period (-30, 30) which indicate there is adjustment before and after the event day 0 since that CAARs decrease and then increase after the event date. In the pre-event period, CAARs are significantly negative and then revert after the event day 0. However, they do not return to their initial level. As a result, the CAAR -30, 30 which represents the entire event window is negative.

Figure 1: The cumulative daily abnormal return for purchases transactions

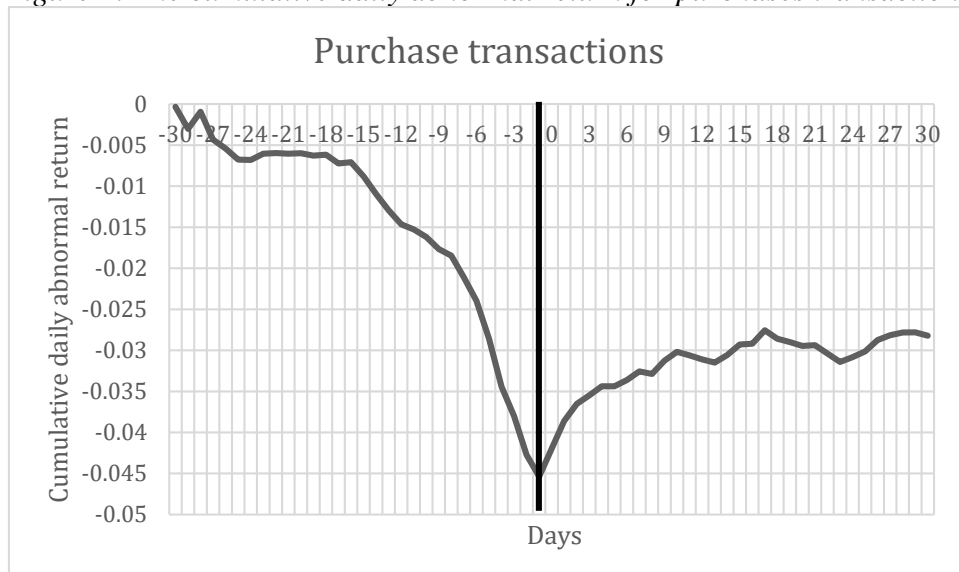
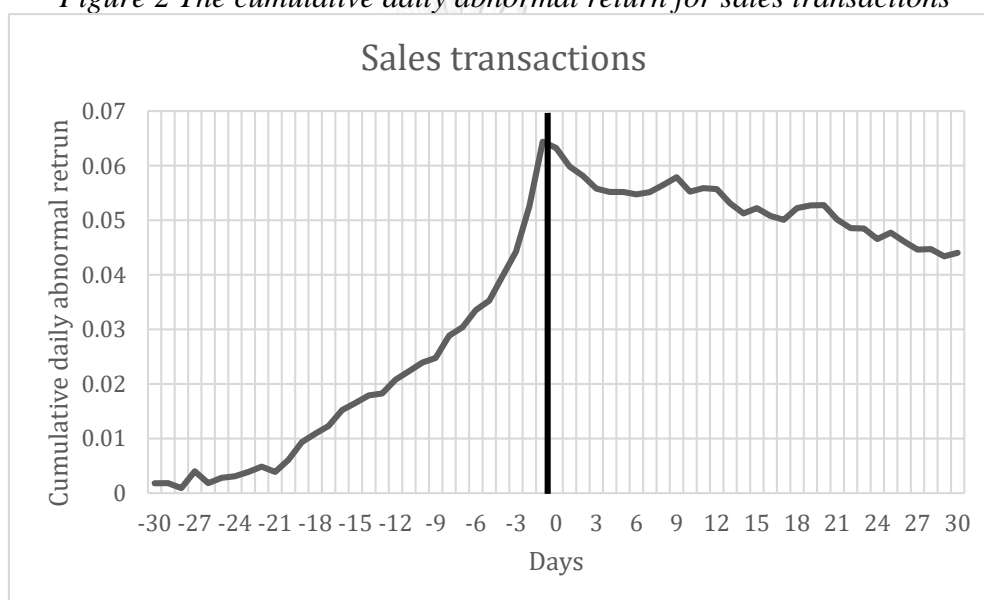


Figure 2 shows the cumulative daily abnormal return of sales transactions over the event window period (-30, 30) which indicate there is adjustment before and after the event day 0 since that CAARs increase and then decrease after the event date. In the pre-event period, CAARs are significantly positive and then revert after the event day 0. However, they do not return to their initial level. As a result, the CAAR -30, 30 which represents the entire event window is positive.

Figure 2 The cumulative daily abnormal return for sales transactions



The pre-event and post-event CAARs for both purchases and sales transactions have similar pattern. It can be implied that abnormal return from insider is significant, so it is containing material and non-public information on stock price. The results consistent with the Hypothesis 1. The evidence in Thai stock market suggests that corporate insiders seem to have information about intrinsic price.

The asymmetry between insider purchases and sales reflects differences in the information content of these actions. When an insider purchases company shares, the primary reason is to make money; the buyer probably thinks the stock is undervalued

at the time of purchase. So, for that insider purchase to be associated with good future returns is not surprising. As for insider selling, the motivation most assumed and tested in the literature is the insider's belief that the company stock is overvalued. If the insider possesses useful information, this type of sale should signal poor returns ahead. So, I conclude that insiders' purchase can be interpreted as favorable signal whereas insiders' sales can be interpreted as unfavorable signal.

5.2 The Effect of Family Ownership

In previous section, I argue that insider transactions contain two different signal which can enhance or mitigate the abnormal return. In this section, I investigate further on how family ownership affects CAARs earned by the insiders.

Table 4: Abnormal return to Insiders' Transaction According to Family Ownership and Control

This table reports the cumulative average abnormal return according to family ownership. I use the 10% cut-off level to separate first and second tier family firms and non-family firms. The table summarize the CAARs of purchase and sales transactions. This table shows the cumulative average abnormal return (CAARs) for insiders' purchases and sales for four intervals around trading date: pre-event period (-30,0) and post-event period (1,10), (1,20) and (1,30). The CAARs indicate that both insiders in family and nonfamily firms follow similar pattern on post-event CAARs.

	Purchase				Sales			
	CAAR (-30,0)	CAAR (1,10)	CAAR (1,20)	CAAR (1,30)	CAAR (-30,0)	CAAR (1,10)	CAAR (1,20)	CAAR (1,30)
Family Firms								
CAAR	-3.7791%	1.4331%	1.4414%	1.8472%	7.1168%	-0.7123%	-1.3292%	-2.5135%
t_{CAAR}	-4.9370	4.2571***	3.5846***	3.4981***	5.6598	-1.6755**	-1.8993**	-2.9171***
Non-Family Firms								
CAAR	-4.6983%	0.8762%	1.0248%	0.8136%	5.3962%	-0.9103%	-0.7147%	-1.2268%
t_{CAAR}	-5.9903	2.4817***	2.288**	1.3637*	5.8693	-1.714***	-1.0455	-1.3958*

*, ** and *** represent significant at 10, 5 and 1 percent level with one-tail t-test, respectively.

The insiders of family firm earn around two times in CAAR (1,30) more than the insiders of non-family firms in both purchase and sales transaction. For purchase transactions (1.85% for family firm and 0.81% for non-family firm) results for purchases are significantly different from zero. Also, with sales transactions (-2.51% for family firm and -1.23% for non-family firm). These CAARs are also significantly different from zero across test statistics. This evidently supports that the insiders of family firms can derive benefits from private information. Hence, this results partly support hypothesis 2 which will be investigate further on cross-sectional analysis in 5.2.

5.3 Cross-sectional Regression Analysis

Furthermore, to compare CAARs of transactions directly, I perform cross-sectional regression analysis with the CAAR (1,30) from market model as dependent variable and dummy variables representing the family firm, family member and family member as CEOs. In the regression's analysis, I can control other factors such as relative transaction value, firm size, market to book and return on assets. Table 6 summarizes the regression results for both insiders' purchases and sales.

In order to clarify the ownership and control effect, I separate the family ownership and family controlled into different models. The coefficients for the family ownership and control yield the similar results presented in Table 6. Model 1 test the ownership effect, which is family firm or non-family firm (equation 8). Model 2 test the control effect, which is family member or non-family member (equation 9). Model 3 test the control effect, which is family CEO or non-family CEO (equation 10).

Table 5: Cross-sectional Regression Analysis

This table presents the results of cross-sectional analysis regressions of purchases and sales transactions. The dependent variable is CAAR (1, 30) and the event date is the trading date. *Family Firm* equals one when family ownership exceeds 10%. *Family Member* equal one when the insider is family member. *Family CEOs* equal one when the insider is family member holding position as CEO. *Value* is relative transaction value of the share purchased or sold which is defined as the relative value of shares traded by insiders to total share outstanding. *Size* are the natural logarithm of revenue at the beginning of the year. *M/B ratio* is the market per book. *ROA* are the return on assets. The standard errors are reported in parentheses.

Cross-sectional Regression Analysis						
	Purchases			Sales		
Variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Family Firms	0.0021 (0.0044)	0.0024 (0.0051)	0.0022 (0.0051)	-0.0066 (0.0072)	-0.0093 (0.0078)	-0.0087 (0.0078)
Family Member	-	-0.0005 (0.0054)	0.0003 (0.0054)	-	0.0095 (0.0101)	0.0148 (0.0102)
Family CEO	-	-	-0.0213** (0.0092)	-	-	-0.0690*** (0.0166)
Value	-0.1392 (0.1638)	-0.1393 (0.1638)	-0.1434 (0.1637)	0.0724 (0.1772)	0.0565 (0.1780919)	0.1202 (0.1779)
Size	-0.0019 (0.0049)	-0.0019 (0.0049)	-0.0018 (0.0049)	-0.0020 (0.0069)	-0.0017 (0.006873)	-0.0037 (0.0068)
MB	-0.0016* (0.0008)	-0.0016 (0.0009)	-0.0014 (0.0009)	0.0018*** (0.0004)	0.0017*** (0.0004)	0.0016*** (0.0004)
ROA	-0.0001 (0.0003)	-0.0001 (0.0003)	-0.0001 (0.0003)	-0.0004 (0.0031)	-0.0004 (0.0003)	-0.0005 (0.0003)
_cons	0.0128*** (0.0039)	.01277** (0.0039)	0.0136*** (0.0039)	-0.0233*** (0.0061)	-0.0234*** (0.0062)	-0.0201** (0.0062)
Adj. R-squared	0.0001	-0.0002	0.0013	0.0121	0.0120	0.0214

*, ** and *** represent significant at 10, 5 and 1 percent level with one-tail t-test, respectively.

The result of the regression for the purchases and sales transaction is inconsistent with the expectation, the coefficients of Family firm and Family member are not significant different from zero in model 1 and 2, respectively. The evidence suggests that in the Thai stock market, corporate insiders who are family member in family firm seem not to know valuable insider information than other insiders. Therefore, I fail to reject Hypothesis 2 (a) and Hypothesis 2 (b).

Consistent with the expectation, there is only factor that can explain the larger of abnormal return from family firm and support hypothesis 2 which is coefficients of Family CEOs in model 3 where the result is significant different from zero. This finding indicates that sales transaction of insider trading in family firm made by CEO are more profitable than those made by non-CEOs.

However, purchases transactions are negative meaning that abnormal return from family CEO is lower than non-family CEO. The possible reason is the transaction cost. For example, family CEOs hold more information than others which lead to more trading then the profit is shadowed by transaction cost.

Table6: Summary of Findings

This table represent summary of all findings of hypothesis test in this paper. In summary, there are 3 hypotheses confirmed which are H1(a) where there is positive abnormal return from insider's purchase transaction, H 1(b) where there is negative abnormal return from insider's sales transaction and H 2(c) where CEOs have more valuable information about the company future since CEOs can earn better profitability in sales transaction.

Hypothesis:	Insiders' Purchases		Insiders' Sales	
	Expected abnormal return	Hypothesis Confirmed	Expected abnormal return	Hypothesis Confirmed
H1 (a)/(b) Purchases and Sales	Positive	Yes	Negative	Yes
H1(c) Absolute value of abnormal return to insiders' purchases is lower compare to sales.	Lower absolute abnormal return	No	Higher absolute abnormal return	No
H2(a) The abnormal return to the transactions of family firms is larger than non-family firms.	More positive for family firms	No, not significant	More negative for family firms	No, not significant
H2(b) Among family firm, the abnormal return to the transactions of family firms' insiders is larger than non-family firms' insiders.	More positive	No, not significant	More negative	No, not significant
H2(c) Among family insider in family firm, the abnormal return to the insiders' transactions of family firms with family member as CEOs is higher than the transactions of family firms as non-CEOs.	More positive	No, significant	More negative	Yes, significant

5.4 Conclusions

The evidence presented in this study indicates that, corporate insiders in the Thai stock market can make abnormal returns on stock when they know some favorable private information and take the action for purchases or sales before market participants.

My sample consists of 4,647 insiders' transactions performed between January 2016 and December 2019. Several conclusions come to light. First, insiders' purchases and sales affect shares price significantly. The results are consistent with most existing studies in both developed and emerging markets. Implementing event study methodology, the 30 days post-event market model CAARs equal to 1.38% and -1.92% for purchases and sales, respectively.

Second, in contrast to previous studies, insiders' purchases trigger less abnormal return compared to sales. It implies that the entrenchment effect as negative news is strong for purchases. This argument is the insiders seem to time their trades according to their private information. The evidence is provided by significantly negative (positive) pre-events CAARs before purchases (sales) date and only large sales can trigger abnormal return.

Third, there is a strong relationship between family ownership with the price reaction to insiders' trades. The insiders of family firms earn almost two times CAARs when compared to the insiders of non-family firms for both purchases and sales transactions.

Lastly, when investigate more on family firm the evidence in this study show that family member who hold position as CEOs in Thai firm have more valuable information about the company's future prospects than other family insider.



REFERENCES

- Ali, A., Chen, T.-Y., Radhakrishnan, S. J. J. o. a., & economics. (2007). Corporate disclosures by family firms. *44*(1-2), 238-286.
- Anderson, R. C., Duru, A., & Reeb, D. M. J. J. o. F. e. (2009). Founders, heirs, and corporate opacity in the United States. *92*(2), 205-222.
- Anderson, R. C., Reeb, D. M., & Zhao, W. J. T. J. o. F. (2012). Family-controlled firms and informed trading: Evidence from short sales. *67*(1), 351-385.
- Anderson, R. C., & Reeb, D. M. J. A. s. q. (2004). Board composition: Balancing family influence in S&P 500 firms. *49*(2), 209-237.
- Anderson, R. C., & Reeb, D. M. J. T. j. o. f. (2003). Founding-family ownership and firm performance: evidence from the S&P 500. *58*(3), 1301-1328.
- Barber, B. M., & Lyon, J. D. J. J. o. f. e. (1997). Detecting long-run abnormal stock returns: The empirical power and specification of test statistics. *43*(3), 341-372.
- Bennedsen, M., Nielsen, K. M., Pérez-González, F., & Wolfenzon, D. J. T. Q. J. o. E. (2007). Inside the family firm: The role of families in succession decisions and performance. *122*(2), 647-691.
- Bertrand, M., & Schoar, A. J. J. o. e. p. (2006). The role of family in family firms. *20*(2), 73-96.
- Bettis, J. C., Coles, J. L., & Lemmon, M. L. J. J. o. f. e. (2000). Corporate policies restricting trading by insiders. *57*(2), 191-220.
- Boonyawat, K., Jumreornvong, S., & Limpaphayom, P. J. T. R. (2005). Insider trading: evidence from Thailand. *10*(1), 48-91.
- Brown, S. J., & Warner, J. B. J. J. o. f. e. (1985). Using daily stock returns: The case of event studies. *14*(1), 3-31.
- Budsaratagoon, P., Hillier, D., Lhaopadchan, S. J. A., & Finance. (2012). Applying developed-country regulation in emerging markets: an analysis of Thai insider trading. *52*(4), 1013-1039.
- Chan, L. H., Chen, T. Y., Hilary, G. J. J. o. A., & Economics. (2010). Insider trading and family firms. *44*, 238-286.
- Cheng, L. T., Leung, T. J. A., & Finance. (2008). Is there information content from insider trading activities preceding earnings and dividend announcements in Hong Kong? , *48*(3), 417-437.

- Claessens, S., Djankov, S., & Lang, L. H. J. J. o. f. E. (2000). The separation of ownership and control in East Asian corporations. *58*(1-2), 81-112.
- Cohen, L., Malloy, C., & Pomorski, L. J. T. J. o. F. (2012). Decoding inside information. *67*(3), 1009-1043.
- De La Brunière, S. N., Haye, J.-C., Mazza, P. J. I. R. o. L., & Economics. (2020). The performance of corporate legal insiders on the French stock market. *61*, 105880.
- Faccio, M., & Lasfer, M. J. C. B. S. R. P. (1999). Managerial ownership, board structure and firm value: The UK evidence.
- Fidrmuc, J. P., Goergen, M., & Renneboog, L. J. T. J. o. F. (2006). Insider trading, news releases, and ownership concentration. *61*(6), 2931-2973.
- Financing, C. J. J. o. F. E. (1984). Investment Decisions when Firms have Information that Investors do not have. *13*(2), 187221.
- Finnerty, J. E. J. T. j. o. f. (1976). Insiders and market efficiency. *31*(4), 1141-1148.
- Foley, S., Kwan, A., McInish, T. H., & Philip, R. J. P.-B. F. J. (2016). Director discretion and insider trading profitability. *39*, 28-43.
- Franks, J., Mayer, C., & Renneboog, L. J. J. o. f. i. (2001). Who disciplines management in poorly performing companies? , *10*(3-4), 209-248.
- Hillier, D., Korczak, A., & Korczak, P. J. J. o. C. F. (2015). The impact of personal attributes on corporate insider trading. *30*, 150-167.
- Ingkasit, R., & Leemakdej, A. (2018). Family Affair—Insider Trading and Family Firms: Evidence from Thailand. In *Finance & Economics Readings* (pp. 117-132): Springer.
- Jaffe, J. F. J. T. J. o. B. (1974). Special information and insider trading. *47*(3), 410-428.
- Kwak, M. J. M. S. M. R. (2003). The advantages of family ownership. *44*(2), 12.
- Lakonishok, J., & Lee, I. J. T. R. o. F. S. (2001). Are insider trades informative? , *14*(1), 79-111.
- Lin, J. C., & Howe, J. S. J. T. J. o. F. (1990). Insider trading in the OTC market. *45*(4), 1273-1284.
- Maug, E. J. T. j. o. f. (1998). Large shareholders as monitors: Is there a trade-off between liquidity and control? , *53*(1), 65-98.
- Morris, T., & Boubacar, H. J. M. R. R. (2018). Abnormal returns on Canadian insider purchases before press releases.
- Pope, P. F., Morris, R. C., Peel, D. A. J. J. o. B. F., & Accounting. (1990). INSIDER TRADING:

SOME EVIDENCE ON MARKET EFFICIENCY AND DIRECTORS'SHARE
DEALINGS IN GREAT BRITAIN. *17*(3), 359-380.

Schulze, W. S., Lubatkin, M. H., Dino, R. N., & Buchholtz, A. K. J. O. s. (2001). Agency relationships in family firms: Theory and evidence. *12*(2), 99-116.

Scott, J., & Xu, P. J. F. A. J. (2004). Some insider sales are positive signals. *60*(3), 44-51.

Seyhun, H. N. J. J. o. f. E. (1986). Insiders' profits, costs of trading, and market efficiency. *16*(2), 189-212.

Shleifer, A., & Vishny, R. W. J. T. j. o. f. (1997). A survey of corporate governance. *52*(2), 737-783.

Tavakoli, M., McMillan, D., McKnight, P. J. J. I. R. o. E., & Finance. (2012). Insider trading and stock prices. *22*(1), 254-266.

Theeravanich, A. J. J. o. E., & Business. (2013). Director compensation in emerging markets: A case study of Thailand. *70*, 71-91.

Villalonga, B., Amit, R., Trujillo, M.-A., & Guzmán, A. J. A. R. o. F. E. (2015). Governance of family firms. *7*, 635-654.

Villalonga, B., & Amit, R. J. J. o. f. E. (2006). How do family ownership, control and management affect firm value? , *80*(2), 385-417.

VITA

NAME Paveenon Pramukkiattiyos
DATE OF BIRTH 21 January 1993
PLACE OF BIRTH Bangkok

