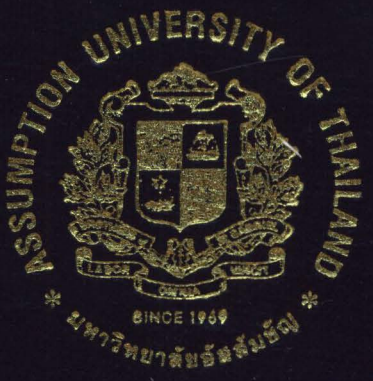

THE PERFORMANCE OF INITIAL PUBLIC OFFERINGS: THE THAI STOCK MARKETS EVIDENCE

WISARUT WIKYANONT

An Independent Study
Submitted in Partial Fulfillment of the Requirements
for the Degree of

MASTER OF SCIENCE IN FINANCIAL ECONOMICS

MARTIN DE TOURS SCHOOL OF MANAGEMENT AND ECONOMICS
Assumption University
Bangkok, Thailand

May 2015

THE PERFORMANCE OF INITIAL PUBLIC OFFERINGS: THE THAI STOCK MARKETS EVIDENCE

By

WISARUT WIKYANONT

An Independent Study
Submitted in partial fulfillment of the requirements
for the Degree of

MASTER OF SCIENCE IN FINANCIAL ECONOMICS

MARTIN DE TOURS SCHOOL OF MANAGEMENT AND ECONOMICS
Assumption University
Bangkok, Thailand

May 2015

MARTIN DE TOURS SCHOOL OF MANAGEMENT AND ECONOMICS
MASTER OF SCIENCE IN FINANCIAL ECONOMICS
ASSUMPTION UNIVERSITY

This Study by: Mr. Wisarut Wikyanont

Entitled: "The Performance of Initial Public Offerings: The Thai Stock Markets Evidence"

has been approved as meeting the independent study requirement for the:

DEGREE OF MASTER OF SCIENCE IN FINANCIAL ECONOMICS

Dr. Wiyada Nittayagasetwat, Chairperson

Asst. Prof. Dr. Nopphon Tangjitprom, Member

Dr. Marisa Laokulrach, Advisor

Date of Defense May 29, 2015

MARTIN DE TOURS SCHOOL OF MANAGEMENT AND ECONOMICS
MASTER OF SCIENCE IN FINANCIAL ECONOMICS
ASSUMPTION UNIVERSITY

Declaration of Authorship Form

I, **Mr. Wisarut Wikyanont**

declare that this independent study and the work presented in it are my own and has been generated by me as the result of my own original research.

The Performance of Initial Public Offerings: The Thai Stock Markets Evidence

I confirm that:

1. This work was done wholly or mainly while in candidature for the M.Sc. degree at this University;
2. Where any part of this independent study has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this independent study is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the independent study is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

Signed: Wisarut W. Date: May 29, 2015

MARTIN DE TOURS SCHOOL OF MANAGEMENT AND ECONOMICS
MASTER OF SCIENCE IN FINANCIAL ECONOMICS
ASSUMPTION UNIVERSITY

Student Name: Mr. Wisarut Wikyanont
ID: 511-9700

ADVISOR'S STATEMENT

I confirm that this independent study has been carried out under my supervision and it represents the original work of the candidate.

Signed:

Dr. Marisa Laokulrach,
Advisor

Date:

ACKNOWLEDGEMENTS

This independent study could not have been completed without the contribution of many people who took part in my master degree study. I would like to take this opportunity to express my gratitude to those who are part of my success.

I would like to express deep gratitude to my advisor, Dr. Marisa Laokulrach for her invaluable advice as well as her continuous and kind encouragement in the completion of my independent study. In addition, I would like to express my special appreciation to Dr. Wiyada Nittayagasetwat, Program Director of Master of Science in Financial Economics and the Chairperson of the committee, and Asst. Prof. Dr. Nopphon Tangjitprom, the committee member, who gave precious suggestions and comments that improved the quality of this study.

I also wish to express my gratitude to all lecturers who taught me the finance and economics theories and their application during my master degree. I also wish to express my appreciation to all faculty officers of Master of Science in Financial Economics, especially Ms. Chotipa Subhitham, for her sincere assistance and accommodation throughout this program.

I also wish to express special thanks to all my colleagues in the second batch of this program for the joy and memorable times that we spent together.

Finally, I wish to express my greatest gratitude to my beloved family for their endless encouragement and support in the completion of my master degree.

Wisarut Wikyanont

May 2015

ABSTRACT

The study aims to examine the performances of 118 initial public offerings (IPOs) listed on the Stock Exchange of Thailand (SET) as well as 78 IPOs listed on the Market for Alternative Investment (MAI) during 2004-2012. The underpricing (short-term performance) and the underperformance (long-term performance) of IPOs have been analyzed. In addition, this study also explores the relationship between the long-term performance and two different factors including the age of companies prior to going public and the issue size of IPOs.

To verify the existence of underpricing in Thai stock markets, the average initial return must be calculated. The buy-and-hold investment strategy for two years has been implemented to determine the underperformance in the long-term period. Multiple regression has been executed to examine the factors that affect the long-term underperformance.

It is found that the underpricing exists in both SET and MAI markets. For the long-term performance analysis, the IPOs listed on SET do not underperform for the two-year anniversary. In contrast, the IPOs listed on MAI underperform the market if buy-and-hold for 6, 12, and 18 months. Lastly, the age of companies prior to going public and the issue size do not affect the long-term performance of IPOs listed on MAI. Investors should consider other factors when deciding to invest in these IPOs.

TABLE OF CONTENTS

LIST OF TABLES

Tables **Page No.**

MARTIN DE TOURS SCHOOL OF MANAGEMENT AND ECONOMICS
MASTER OF SCIENCE IN FINANCIAL ECONOMICS
ASSUMPTION UNIVERSITY

Form signed by Proofreader of the independent study

I, STEPHEN CANNELL, have proofread this independent study entitled
The Performance of Initial Public Offerings: The Thai Stock Market Evidence
(by Wisarut Wikvanont)
and hereby certify that the verbiage, spelling and format is commensurate with the quality of internationally acceptable writing standards for a master degree in financial economics.

Signed:

STEPHEN CANNELL
Contact Number / Email Address: 089-893-9170 / stevec_12@hotmail.com

Date:

22/5/15

CHAPTER I – GENERALITIES OF THE STUDY

1.1 Background of the Study

The economic growth of many countries is largely related to the development of financial markets. Many companies can take advantages of various types of financial instrument in financial markets, such as bonds, stocks, or derivatives, in order to explore their business opportunities or to raise additional funds for their future growth from both domestic and international investors. The capital market, one type of financial market, plays a significant role in supporting the economic growth of countries. A very interesting and popular activity for companies to acquire additional funds is to issue its stock for the first time in the capital market or what is called "Initial Public Offerings" (IPOs).

There are numerous international researches and studies about the performance of IPOs both in developed countries such as the United States of America (Ritter, 1991), Spain (Alvarez & Gonzalez, 2001), and the United Kingdom (Levis, 1993; Brennan & Franks, 1997), or even in emerging and developing countries such as China (Chan, Wang & Wei, 2004), Sri Lanka (Peter, 2007), countries in most of South East Asia (Lee, Taylor & Walter, 1996; Connelly, Limpaphayom & Siraprapasiri, 2004; Kim, Kitsabunnarat & Nofsinger, 2004; Chorruk & Worthington, 2009), countries in Eastern Europe, the Middle East (Ewing & Ozfidan, 2003), and Latin America (Aggarwal, Leal & Hernandez, 1993). The international evidence has focused on two anomalies; the underpricing of stock in the short-run, and the underperformance of stock in the long-run (Ritter, 1991). Regarding the underpricing of stock, IPOs are set to be offered at the lower price in order to create higher initial returns on the first trading day. That is, they outperformed the market. For the long-run underperformance, the returns of the IPOs seem to decrease significantly or give negative returns, after holding for a longer period of one to three years. These previous studies mainly concern the U.S., European countries, and even some emerging countries such as China or Latin America. This paper could shed some light on the underpricing and long-term performance of IPOs in Thailand along with the relationship between different variables and the excess returns of IPOs, if any.

History of Equity Markets in Thailand

In Thailand, there are two secondary markets for Thai companies to raise additional funds by launching IPOs i.e. the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (MAI).

Initially, the Thai stock market was established as a limited partnership in July 1962 by a private group. The group then transformed to be a limited company and changed the name of the Thai stock market to the Bangkok Stock Exchange Co., Ltd. (BSE) in 1963. The BSE ceased its operation in the early of 1970s because it lacked official support from the government and there were a limited number of investors who understood the capital market (Vithessonthi, 2008; Chorruk and Worthington, 2009).

Subsequently in 1972, the Thai government recognized the need for a fair and disciplined securities market and wanted to take control and regulate the operations of finance and securities companies. Additionally, the government wanted to raise funds in order to support industrialization and economic development. Thus, they established the Securities Exchange of Thailand in May 1974, started trading on April 30, 1975, and changed its name to the Stock Exchange of Thailand (SET) on January 1, 1991 (Chorruk and Worthington, 2009).

The Market for Alternative Investment (MAI) was established on November 11, 1998, with operations officially commencing on June 21, 1999. Trading started on September 17, 2011. The establishment of MAI was another step in the development of the Thai capital market. The companies in MAI are mainly young, high-growth, innovative, and knowledge-based small-and-medium enterprises (SMEs). The purposes of the inception of the MAI market were to provide opportunities for innovative or high growth potential companies to raise funds for their business expansion, along with providing a wide range of investment choices to investors (Vithessonthi, 2008).

1.2 Statement of the Problem

In the year 2015, the ASEAN Economic Community (AEC) will be fully established. The countries in the AEC are composed of ten countries in the South East Asian region including Thailand, Indonesia, Malaysia, Singapore, Philippines, Brunei, Vietnam, Laos, Myanmar, and

Cambodia. Thailand, as an emerging market, can draw benefits from trading between these countries as it is located in the center of the region. This can significantly lead to the country's economy development. Therefore, many companies have to prepare themselves for business expansion once the AEC is fully established. Consequently, they need to finance their companies through the capital markets by issuing their stocks to the public in order to acquire additional funds to support their business expansion. This has made IPO activities more popular.

However, the concern about IPO activities is the performance of those stocks after becoming public, and whether there are any factors that could influence their performance. The availability of study about the performance of IPOs listed on the MAI market is also limited. Hence, this study will provide the latest evidence about the performance of Thai IPO companies listed both on SET and MAI. Additionally, this study does not only seek to answer whether underpricing exists in Thailand, which may serve as a potential short- or long-term investment, but also to shed light on any possible factors that could influence IPO performance.

1.3 Research Objectives

The purposes of this study are:

1. To analyze whether the underpricing of IPOs exists in Thai stock markets.
2. To analyze the performance of 196 IPOs of listed companies on SET and MAI during 2004-2012 by applying buy-and-hold strategy for two years after listing.
   The year 2012 is the end period of the study in order to achieve two year's performance in 2014, which provides recent results up to the current time.
3. To determine the relationship using cross-sectional analysis between the performance of IPOs with respect to two different variables including the age of companies and the IPO size, and then to compare the results of stocks listed on SET and MAI.

1.4 Research Questions

The research questions are:

1. Does underpricing exist for IPOs during the period 2004-2012?
2. Does underperformance of IPOs exist after a holding period of 6, 12, 18, and 24 months?

3. Does the age of companies and size affect the buy-and-hold performance of IPOs?

1.5 Scope of the Research

This study seeks to determine the underpricing as well as the performance of the IPOs listed on SET and MAI along with the relationship between performance and two different variables as mentioned above. The scope of this study is to focus on IPOs listed on Thai stock markets during the years 2004-2012. The methodology of Thomadakis, Nounis, and Gounopoulos (2007), who studied the performance of Greek IPOs during the period 1994-2002, was applied in order to undertake this study.

1.6 Limitations of the Research

There are some limitations in this study. Firstly, some factors are excluded from this study such as a corporate condition of the company (whether it is a privately-owned company or a state-owned-enterprise), market conditions, ownership concentration, and underwriters' reputation. The reason for excluding corporate condition is that most of the companies in Thailand are privately-owned companies. The number of state-owned-enterprises in Thailand during the period of study is relatively low. The available information about market conditions, ownership concentration as well as the underwriters' reputation is also limited, and they have, therefore, been excluded from this study. Secondly, the period of this study might reveal different results when compared to other studies of IPOs in Thailand at different periods of time.

1.7 Significance of the Study

The significance of this study is in providing various types of information about IPOs in Thailand e.g. academic and business aspects, which could be employed in future empirical studies about Thai IPOs and could be replicated in real business.

For the academic aspect, this study provides fresh evidence as to whether the underpricing and the underperformance of IPOs exist in Thailand as well as analyzing the relationship between IPO performance and two different variables. Additionally, this study also sheds light on the

evidence of IPOs listed on MAI because most of the previous studies in Thailand have focused on IPOs listed on the SET market.

In the business aspect, this study provides information to investors when deciding to invest in Thai IPOs for a short- or long-term period. Furthermore, investors can make the decision to invest in Thai IPOs by considering the relationship between the two different factors and IPO returns.

1.8 Definition of Terms

Age of company is the time a company has been established before going public, which is measured by the difference between the year of establishment and the company's offering year (Ritter, 1991; Kim et al., 2004).

Buy-and-hold is a strategy in which the investor buys stock on the first trading day and holds it until another specific point of time e.g. after sixth months. It reflects the long-term performance of the stock (Thomadakis et al., 2007).

Information Asymmetry is the situation where two groups of investors have unequal information. That is, one group of investors has privilege over the other group of investors by having superior information (Rock, 1986).

Initial Public Offering (IPO) is the process in which a private company sells its shares to the public for the first time. The main purpose is to increase its capital in order to expand its business (Ljungqvist, 2006; Thomadakis et al., 2007).

Performance is the comparison of the stock return and the market return for the same period. If the stock return is lower than the market return, this means the stocks underperform the market. In contrast, if the stock return is greater than the market, this means the stocks outperform the market (Loughran and Ritter, 2004).

Size of company is the issuing size of the IPO, which is computed by multiplying the number of shares sold by the offer price (Thomadakis et al., 2007; Chorruk and Worthington, 2009).

Underpricing is the measurement of the initial return of stocks, which is calculated by holding period returns, using the offering price (the price that is offered to the investors for the first time) and the closing price on the first trading day in the secondary market (Ljungqvist, 2006).

The remainder of this paper is organized into five chapters and proceeds as follows. Following Chapter One, the generalities of the study, will be a review of the literature about the theories relevant to IPOs as well as the evidence on the performance of IPOs in Chapter Two. Chapter Three presents the research hypotheses, the characteristics of data and discusses the research methodology. The discussion of results will be presented in Chapter Four, and the conclusions will be presented in Chapter Five.

CHAPTER II - REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents a review of the related literature regarding the performance of IPOs.

2.1 Theories Related to Initial Public Offerings (IPOs)

There are also many theories relevant to the performance of IPOs. In this paper, the reasons for IPO underpricing can be explained by the following theories; the efficient market and adverse selection theories.

2.1.1 The Efficient Market Theory

The theory of efficient market was introduced by Fama (1970). The theory states that the current stock prices fully reflect all available information including historical, public as well as inside information; in other words, the appropriate price of stocks is the current price. Fama (1970) explained three categories of market efficiency based on the available information: weak, semi-strong, and strong forms.

The weak form concerns historical information (e.g. price and volume). This means the current price of stocks already reflect historical information. The result showed that historical information has no relationship with the future stock price. Thereby, excess returns cannot be achieved using technical analysis. This is supported by Kendall and Hill (1953) who suggested that the movement of the stock price is random. Historical information including price has zero correlation to the future stock price (Kendall and Hill, 1953).

The semi-strong form is where the stock prices fully reflect historical information as well as the available public information. This means the current stock prices already reflect the historical and public information. The result showed that excess returns cannot be achieved using both technical and fundamental analysis. This is consistent with the study of Reinganum (1981) on the purchase of stocks using quarterly public information, which indicate that excess returns cannot be achieved from knowing this information.

The strong form is where the stock prices fully reflect historical, public and inside information. The result showed that it is not possible to get excess returns from knowing this information.

This is aligned with the research of Gregory, Matatko, Tonks, and Purkis (1993) on the excess returns from the trading of stocks by insiders. The result showed that excess returns can be found only in smaller companies and reduce substantially over time. Gregory et al. (1993) concluded that insiders do not receive higher returns than general investors, in other words, they get no excess returns.

Accordingly, the theory of efficient market can explain the behavior of the stock price. The performance of the IPOs changes quickly based on the available information. Thereby, no one can get an excess return from the IPOs.

2.1.2 The Information Asymmetry

Another theory that can explain the underpricing of IPOs is the asymmetry of information. Information asymmetry is the condition where one particular group has superior information to the others. Rock (1986) explained the asymmetry of information that exists between each investor by introducing the model called 'Winner's Curse Hypothesis'. Investors are separated into two groups: informed investors and uninformed investors. The assumption is that informed investors know all the information about the IPOs so they can identify good companies, avoid bad companies, and invest only when the newly issued companies are underpriced. In contrast, uninformed investors cannot distinguish between good and bad companies because they had insufficient information about the companies. So, they randomly invest in newly issued companies and especially those companies that are overpriced. The informed investors are the winners whilst the uninformed investors are the losers. This causes the problem of adverse selection between these two groups. Underpricing tends to absorb the risk of loss for uninformed investors, which is also beneficial to informed investors.

However, the 'winners' sometimes seem to be the losers or be cursed. Thaler (1988) explained that the 'winner's curse' is a scenario in which all bidders had the same information about the object they were bidding for while their estimations about the bidding price were different. However, the winner of the bidding, which is the one who placed the highest price, tended to be a loser, in other words 'be cursed', because the winner paid a higher amount than the value of the object.

Based on the previous studies mentioned above, information asymmetry can be used to explain the underpricing of IPOs. The issuers of the IPOs (informed investors) know all the information about their companies and even the underpricing of their IPOs. If their IPOs are underpriced, they will buy IPOs and leave a minor interest for other investors (uninformed investors). Thereby, the issuers of the IPOs can get positive returns from the underpricing scheme. On the other hand, if the IPOs are not underpriced, they will not buy any IPOs and leave them for the uninformed investors. Once the IPOs become public, the uninformed investors will receive negative returns (or 'be cursed') by buying these IPOs.

2.2 Empirical Evidence on the Performance of IPOs

There are many studies that explained the performance of initial public offerings over time. Ritter (1991) studied the IPO performance in the U.S. by sampling 1,526 IPOs issued during 1975-1984. The study concluded that IPOs generated an average initial return of approximately 16.4%. For the long-term performance, the study measured from the first day of trading and held the stock for three years. The results showed that companies of similar size and industry significantly underperformed by as much as 29.1% at the end of the third year after their listing.

Levis (1993) examined the performance of 712 newly issued stocks in the United Kingdom from 1980 to 1988 by employing the same methodology as Ritter (1991). The results on the initial returns and performance also correspond with the results of Ritter (1991). The consequence was an average positive initial return of 14.3% while the market underperformed by almost 30.6% at the end of the third year after their listing.

Aggarwal, Leal, and Hernandez (1993) analyzed IPO performance in three emerging countries in Latin American including Brazil, Mexico, and Chile, where capital markets play a significant role. The sample consisted of 62 Brazilian IPOs issued between 1980 and 1990, 36 Chilean IPOs issued between 1982 and 1990, and 44 Mexican IPOs issued between 1987 and 1990. The results were similar to the studies in the U.S and the United Kingdom. It showed that IPOs generated average initial returns of 78.5% in Brazil, 16.7% in Chile, and 2.8% in Mexico. It also showed that IPOs underperformed by 47.0% in Brazil after three years, 23.7% in Chile after three years, and 19.6% in Mexico after one year.

Hensler, Herrera, and Lockwood (2000) also investigated the differences in the performance of 68 IPOs in the Mexican market. The sample was categorized into two groups, 14 bank stocks and 54 non-bank stocks. The performances outcome on day 300 after listing pointed out that the non-bank stocks underperformed the market by 21% whereas the bank stocks outperformed the market by 56%.

Some small developing markets have also been tested with regard to IPO performance. Thomadakis, Nounis, and Gounopoulos (2007) analyzed the performance of 254 IPOs listed on the Athens Stock Exchange during the period of 1994-2002. The short-run performance was measured on the first trading day while the long-run performance was measured by investing in the IPOs on the offering day and on the first trading day and holding them for three years. The result showed that the average adjusted initial return on the first trading day was 29.26%. Additionally, IPOs underperformed the market by 1.24% if bought on the offering day while they underperformed by 17.44% if bought at the end of the first trading day.

There is also a study of IPO performance in a developing country. Peter (2007) tried to investigate the returns of 30 IPOs in Sri Lanka during the period 1996-2000. The result showed that IPOs generated an average return of 14.2% in the six-month period and 11.7% in the 12-month period. However, if the IPOs were bought on the first trading day and held for three years, they underperformed by 13.0% by the end of the third year.

In Thailand, there have been many studies on both the evidence of underpricing and the performance of IPOs using a buy-and-hold strategy. Vithessonthi (2008) studied the performance of 123 IPOs listed on SET during the period 2000-2005. The study concluded that the underpricing existed as the average initial return on the first trading day was 19.97%. Moreover, the performance using a buy-and-hold strategy showed that the IPO companies underperformed the market by 38.74% by the end of the third year.

Another study from Chorruk and Worthington (2009) also showed a consistent outcome. Chorruk and Worthington (2009) studied 136 IPOs listed on SET during the period 1997-2007 for underpricing along with their aftermarket performance. The results showed that the average initial return was approximately 17.6%, in other words, underpricing existed in Thai stock markets. For aftermarket testing, the buy-and-hold strategy was applied. The results showed that the average buy-and-hold market-adjusted return dropped from 0.95% to -25.39% after three

years; in other words, IPOs underperformed the market. Based on the evidence of Thai cases, underpricing existed and the IPOs underperformed the market in the long-run.

In summary, it seems that IPOs are underpriced; that is, they outperform the market in the short-run. In addition, the studies bring an insight about holding IPO stocks from the first trading day until a different point of time will underperform the markets over longer periods of time. In other words, they provide negative long-run returns.

Table 2.1 shows a summary of empirical evidence regarding the short-term and long-term returns of IPOs.

Table 2.1 Empirical Evidence for Short- and Long-Term Returns

Countries	Studies	Periods	Sample	Short-term returns	Long-term returns
Australia	Lee, Taylor, and Walter (1996)	1976-1995	381/266	12.1%	-51.0%
Austria	Ausenegg (2000)	1965-2002	83/57	6.3%	-46.5%
Brazil	Aggarwal, Leal, and Hernandez (1993)	1980-1990	62	78.5%	-47.0%
Canada	Loughran, Ritter, and Rydqvist (2006)	1971-2002	540	7.0%	-
	Kooli and Suret (2002)	1991-1998	445	-	-16.86%
Chile	Aggarwal, Leal, and Hernandez (1993)	1982-1990	36	16.7%	-23.7%
France	Loughran, Ritter, and Rydqvist (2006)	1983-2000	571/87	11.6%	-4.8%
Germany	Ljunqvist (1997)	1983-2000	545/145	31.1%	-12.1%
Greece	Thomadakis, Nounis, and Gounopoulos (2007)	1994-2002	254	-	-17.44%
Hong Kong	Loughran, Ritter, and Rydqvist (2006)	1980-2001	857	17.3%	-
	McGuiness (1993)	1980-1990	72	-	-18.3%
Hungary	Lyn and Zychowicz (2003)	1991-1998	33	15.12%	19.59%
Japan	Loughran, Ritter, and Rydqvist (2006)	1970-2001	1,689	28.4%	-
	Cai and Wei (1997)	1971-1990	172	-	-27.0%
Korea	Dhatt, Kim, and Lim (1993)	1980-1990	347	78.01%	4.64%
Malaysia	Isa and Young (2001)	1980-1998	401	104.1%	-
	Ahmad-Zaluki, Campbell, and Goodacre (2004)	1990-2000	454	-	-8.16%
Mexico	Aggarwal, Leal, and Hernandez (1993)	1987-1990	44	2.8%	-19.6%
Poland	Lyn and Zychowicz (2003)	1991-1998	103	54.45%	57.17%
Singapore	Loughran, Ritter, and Rydqvist (2006)	1973-2001	441	27%	-
	Hin and Mahmood (1993)	1976-1984	45	-	-9.2%
Spain	Ansotegui and Fabregat (2000)	1986-1998	99	10.7%	-
	Alvarez and Gonzalez (2001)	1987-1997	41	-	-24.19%
Sri Lanka	Peter (2007)	1996-2000	30	14.2%	-13.0%
Thailand	Vithessonthi (2008)	2000-2005	123	19.97%	-38.74%
	Chorruk and Worthington (2009)	1997-2007	136	17.6%	-25.39%
Turkey	Loughran, Ritter, and Rydqvist (2006)	1990-2004	282	10.8%	-
	Yilmaz and Bildik (2005)	1990-2000	234	-	-84.5%
U.K.	Loughran, Ritter, and Rydqvist (2006)	1959-2001	3,122	17.4%	-
	Levis (1993)	1980-1988	712	14.30%	-30.6%
U.S.	Loughran, Ritter, and Rydqvist (2006)	1960-2001	15,333	18.1%	-
	Loughran and Ritter (1995)	1970-1990	4,753	-	-20.0%
	Ritter (1991)	1975-1984	1,526	16.4%	-29.1%

Source: Adapted from Gounopoulos, Nounis and Stylianides (2007)

2.3 Empirical Evidence on the Factors Related to IPO Performance

2.3.1 Age of Companies

The age of a company prior to going public has been selected to be studied in relation to the performance of IPOs. This is because the age of a company plays a role in explaining the theory of information asymmetry according to the previous empirical studies. Older companies tend to have more available information than younger companies. Ritter (1991) analyzed the long-term performance of 1,526 U.S. IPOs issued during 1975-1984. The study concluded that the younger the companies are, and the heavier the volume of trading there is during the year, the lower the IPO performance.

Pagano, Panetta, and Zingales (1998) investigated the performance of stocks listed on the Italian Stock Exchange in relation to the age of companies. The study explained that older companies have more experience in doing business than newer companies. These older companies tended to have better operating performance than younger companies. It can be summarized that the older the companies are prior to going public, the better the performance.

Another study on the age of companies and performance was by Kim, Kitsabunnarat, and Nofsinger (2004) in which they examined the performance of 133 IPOs in the Thai Stock Exchange during 1987-1993. The result showed a positive relationship in the same way as Ritter (1991) and Pagano et al. (1998) that the older the companies are, the greater the performance.

2.3.2 Size of Companies

The size of a company is another factor that could reflect the changes in the stock price on the first trading day. Consequently, it has been selected to be examined in relation to IPO performance. There is some evidence about the performance of IPOs in relation to the size of companies. Mikkelson, Partch, and Shah (1997) studied the performance of 283 U.S. IPOs during the period of 1980-1983 in relation to the total asset size of the companies. The results showed that the larger the companies' total assets, the greater the performance of these companies. Charitou and Constantinidis (2004) also examined the performance of Japanese companies during the period 1992-2001 in relation to their size, measured by market

capitalization. The results are consistent with the study of Mikkelson et al. (1997) that the performance of companies has a strong positive relationship with their size.

In Thailand, Vithessonthi (2008) also studied the relationship between the three-year performance of 123 IPOs listed on SET during the years 2000-2005 and the issue size measured by the gross proceeds. The outcome also showed the same positive relationship between long-term returns and the issue size. Nevertheless, there is some contrasting evidence. Chorruk and Worthington (2009) studied the relationship between the three-year returns of 136 IPOs listed on SET during the period 1997-2007 and the issue size. The result was in contrast to the aforementioned evidence. The issue size of companies had a negative relationship with three-year returns.

Table 2.2 below is a summary of the empirical evidence on the factors related to IPO performance.

Table 2.2 Empirical Evidence on the Factors Related to IPO Performance

Factors	Relationship to the Adjusted Initial Returns	Literature
Age of companies prior to going public	Positive	Ritter (1991); Pagano, Panetta, and Zingales (1998); Kim, Kitsabunnarat, and Nofsinger (2004)
Size of companies	Positive	Mikkelson, Partch , and Shah (1997); Charitou and Constantinidis (2004); Vithessonthi (2008)
	Negative	Chorruk and Worthington (2009)

CHAPTER III – RESEARCH METHODOLOGY

This chapter describes the details of the hypotheses developed for this study, the measurement of variables, and the collection of data. In addition, the methodology used in determining the relationship of the age and issue size with the performance of IPOs is also described in this chapter.

3.1 Research Hypotheses

According to the empirical evidence on the performance of IPOs, the following research hypotheses have been developed.

Underpricing: Based on international and Thai evidence about underpricing (Ritter (1991); Peter (2007); Vithessonthi (2008); and Chorruk and Worthington (2009)), the average initial returns were greater than zero on the first trading day; in other words, underpricing existed. Consequently, the hypothesis regarding the underpricing of IPOs is as follows:

Hypothesis 1: Underpricing exists in Thai stock markets.

Long-term performances: Based on the study of Ritter (1991), Levis (1993), Aggarwal et al. (1993), Peter (2007), and Thomadakis et al. (2007), the buy-and-hold investing strategy was applied to analyze the performance of IPOs after several years. The outcome showed that the IPOs had negative long-term adjusted returns; in other words, they underperformed the market. Consequently, the hypothesis regarding the performance of IPOs is as follows:

Hypothesis 2: IPOs underperform the market in the long-term.

Age of companies: This factor represents a company characteristic. It has been considered in cross-sectional analysis as it can explain the performance of the stocks after listing (Mikkelson et al., 1997). Based on the examination of Ritter (1991), Pagano et al. (1998) and Kim et al. (2004) about the age of companies in relation to the companies'-adjusted return, the result showed that the greater the age of the company prior to going public, the higher the companies' adjusted return. Therefore, the age of a company prior to going public has a positive relationship with the buy-and-hold performance of the IPO. Accordingly, the hypothesis regarding the age of companies before going public is as follows:

Hypothesis 3: Age of companies affects the buy-and-hold market-adjusted returns of IPOs.

Size of companies: Size of companies, which is also a company characteristic, can be used to explain the post-performance of the IPOs as recommended by Mikkelson et al. (1997). Accordingly, it has been included in determining the multiple regression. This factor can be measured in various ways. Mikkelson et al. (1997) measured the size of companies by the total asset size of these companies. Charitou and Constantinidis (2004) measured it by market capitalization. Vithessonthi (2008) measured it by the gross proceeds. However, all results showed that the long-term performance of those companies has a positive relationship with their size. In this study, the size of companies is measured by the number of shares sold multiplied by the offering price. Consequently, the hypothesis regarding the size of companies is as follows

Hypothesis 4: Size of companies affects buy-and-hold market-adjusted returns of IPOs.

Table 3.1 reports a summary of the research hypotheses.

Table 3.1 List of Research Hypotheses

List of Research Hypotheses
Hypothesis 1: *Underpricing exists in Thai stock markets*
Hypothesis 2: *IPOs underperform the market in the long-term*
Hypothesis 3: *Age of companies affects the buy-and-hold market-adjusted returns of IPOs*
Hypothesis 4: *Size of companies affects the buy-and-hold market-adjusted returns of IPOs*

3.2 Data Collection

The data collected are from the database of the Stock Exchange of Thailand (SET), SET Market Analysis and Reporting Tool (SETSMART), Efinance Thai and Bualuang Securities Plc. The periods covered in this study are 9 consecutive years from 2004 to 2012. The sample includes only common stocks in the SET and MAI. Infrastructure funds, property funds, and real estate investment trusts (REITs) as well as the stocks that were delisted from the stock markets are not examined in this study.

The total number of newly issued stocks (including infrastructure funds, property funds and REITs) during the period of 2004-2012 was 236 stocks, which consisted of 158 stocks listed on

SET and 78 stocks listed on MAI. A total number of 196 stocks (118 listed on SET while 78 listed on MAI) after excluding the infrastructure & property funds and REITs. was selected as the sample size.

The variables used in this study are collected from the database of SETSMART and Efinance Thai, whereas the closing prices and indices for the period of 2004-2009 are retrieved from the database of Bualuang Securities Plc. The issue size of companies has been retrieved from the database of the Stock Exchange of Thailand (www.set.or.th).

3.3 Methodology

3.3.1 Underpricing

To answer the first research question as to whether underpricing exists for IPOs during the period of 2004-2012, the methodology as suggested by Ritter (1991), Thomadakis et al. (2007), Peter (2007), and Chorruk and Worthington (2009) has been applied.

The initial stock return, which is the percentage difference between the closing price on the first trading day and the offering price, is calculated in order to determine the underpricing as shown below.

$$IR_{i,1} = \frac{P_{i,1} - P_{i,0}}{P_{i,0}} \quad (1)$$

where $IR_{i,1}$ is the initial return of stock i on the first trading day;

$P_{i,1}$ is the closing price of stock i on the first trading day;

$P_{i,0}$ is the listing or offering price of stock i on the offering day .

Thereafter, the average initial returns have to be calculated and the t-statistic test is applied to check whether the average initial returns are significantly different from zero at the 95 percent level of confidence.

3.3.2 Long-Term Performance

According to Thomadakis et al. (2007), Ritter (1991), Levis (1993), Aggarwal et al. (1993), and Peter (2007), a buy-and-hold strategy will be applied in determining the long-run performance of

IPOs. The methodology associates with the calculation of the buy-and-hold market-adjusted returns for two consecutive years assuming that IPO stocks are held from the first trading day until the period of two years after listing.

The period taken into consideration covers 6, 12, 18, and 24 months after listing. Assume 21 trading days per month, therefore, the following points of time will be used in the calculation.

i. The 6-month trading period after listing (126th day of trading)
ii. The 12-month trading period after listing (252nd day of trading)
iii. The 18-month trading period after listing (378th day of trading)
iv. The 24-month trading period after listing (504th day of trading)

To determine the long-term performance of IPOs using buy-and-hold market-adjusted returns, first the raw returns of IPOs are calculated from the percentage change in the closing price after the holding period, and the first trading day price. Second, the market returns are calculated from the percentage change in the closing index after the holding period and the closing index on the first trading day. Third, market-adjusted returns are calculated by subtracting the market returns from the IPO returns. Formula (2) is used to determine the long-term performance from the first trading day.

$$BHAR_{i,n} = \frac{P_{i,n} - P_{i,1}}{P_{i,1}} - \frac{Index_{m,n} - Index_{m,1}}{Index_{m,1}} \quad (2)$$

where $BHAR_{i,n}$ is the buy-and-hold market-adjusted return of stock i on nth day of trading;

$P_{i,n}$ is the closing price of stock i on nth day of trading;

$P_{i,1}$ is the closing price of stock i on the first trading day;

$Index_{m,n}$ is the closing index of the market (SET or MAI) on nth day of trading;

$Index_{m,1}$ is the closing index of the market (SET or MAI) on the first trading day.

Fifth, the average buy-and-hold market-adjusted returns of all IPOs are calculated.

Thereafter, the t-statistic test is applied to check whether the buy-and-hold market-adjusted returns are significantly different from zero at the 95 percent confidence level.

3.3.3 Cross-Sectional Analysis

The following step is the test of multiple regression in order to see the differences between the two factors that would affect the IPOs after-market performance. The two different factors include the age of companies prior to going public and the size of IPOs. Details of each variable are explained below.

The after-market or long-run performance of IPOs ($BHAR_{i,n}$) using buy-and-hold market-adjusted returns is defined as the dependent variable.

The two different variables that affect the performance of IPOs, the age of companies prior to going public and the size of IPOs, are defined as the independent variables. According to Ritter (1991) and Kim et al. (2004), age of companies prior to going public (*AGE*) is measured by the natural logarithm of the difference between the companies' offering year and the year of establishment. Based on the works of Thomadakis et al. (2007) and Chorruk and Worthington (2009), the size of the IPOs (*SIZE*) is measured by the natural logarithm of the issue size in million baht.

To determine the cross-sectional analysis, the following model has been applied.

$$BHAR_{i,n} = \beta_0 + \beta_1 AGE + \beta_2 SIZE + \mu_i \quad (3)$$

where $BHAR_{i,n}$ is the buy-and-hold market-adjusted return on n^{th} day of trading;

AGE is the natural logarithm of the age of companies prior to going public;

SIZE is the natural logarithm of the issue size of IPOs.

For the clarification of each variable, Table 3.2 below summarizes the explanation along with its measures.

Table 3.2 Summary of Explanatory and Measures of Variables

Category	Abbreviation	Definition	Measures
Dependent Variable	$BHAR_{i,n}$	Buy-and-hold market-adjusted returns on n^{th} day of trading	-
Independent Variable	*AGE*	Age of companies prior to going public	Calculated by the natural logarithm of the difference between the offering year and the year of establishment.
Independent Variable	*SIZE*	Issue size of IPOs	Calculated as the natural logarithm of the issue size of IPOs in million baht

CHAPTER IV – PRESENTATION AND DISCUSSION OF RESULTS

This chapter presents the descriptive analysis of variables. The results of IPO underpricing, and the long-term underperformance of IPOs listed on SET and MAI are presented and analyzed.

4.1 Data Description and Characteristics

Table 4.1 below displays the number of companies listed on SET and MAI during the period 2004-2012 and their issue size whereas Table 4.2 shows the number of these companies categorized by their age prior to going public.

Table 4.1 Number of IPOs Listed on SET and MAI during 2004-2012 & Issue Size

Year	SET		MAI		Total	
	No. of IPOs (companies)	Issue Size (million baht)	No. of IPOs (companies)	Issue Size (million baht)	No. of IPOs (companies)	Issue Size (million baht)
2004	36	75,883.46	14	1,457.35	50	77,340.81
2005	35	30,149.31	14	1,490.03	49	31,639.34
2006	12	36,786.88	6	830.20	18	37,617.08
2007	6	10,782.50	6	769.60	12	11,552.10
2008	8	18,389.30	3	375.00	11	18,764.30
2009	6	4,852.40	11	1,316.22	17	6,168.62
2010	4	6,027.60	7	688.96	11	6,716.56
2011	3	3,793.75	7	1,160.24	10	4,953.99
2012	8	17,181.90	10	2,482.17	18	19,664.07
Total	**118**	**203,847.10**	**78**	**10,569.77**	**196**	**214,416.87**
Average	**13**	**22,649.68**	**9**	**1,174.42**	**22**	**23,824.10**
Maximum	**36**	**75,883.46**	**14**	**2,482.17**	**50**	**77,340.81**
Minimum	**3**	**3,793.75**	**3**	**375.00**	**10**	**4,953.99**

Source: Database of the Stock Exchange of Thailand (www.set.or.th)

Table 4.2 Number of IPOs Categorized by Age of Companies Prior to going Public

Age of Companies Prior to going Public (Years)	SET	MAI	Total
1 – 10	42	28	70
11 – 20	52	28	80
21 – 30	15	19	34
31 and above	9	3	12
Total	**118**	**78**	**196**

In Table 4.1, the total number of IPOs issued on SET and MAI during the period 2004-2012 is 196 companies with an issue size of 214,416.87 million baht. The average number of IPOs during this period is 22 companies per year with an average issue size per year of 23,824.10 million baht. 2004 is the year with the highest number of IPOs at 50 companies and an issue size of 77,340.81 million baht. The lowest number of IPOs is 10 companies, which were issued in 2011, with an issue size of 4,953.99 million baht.

The total number of IPOs listed on SET during the period 2004-2012 is 118 companies with an issue size of 203,847.10 million baht. The average IPOs listed on SET per year is 13 companies with an average issue size of 22,649.68 million baht. The highest number of IPOs listed on SET is 36 companies in 2004 with an issue size of 75,883.46 million baht. 2011 is the year with the lowest number of newly issued stocks at 3 companies with the lowest issue size of 3,793.75 million baht (as shown in Table 4.1). Fifty-two companies were established for 11 to 20 years prior to going public, which represents most of the IPOs listed on SET (as shown in Table 4.2).

For IPOs listed on MAI, the total number listed during this period is 78 companies with an issue size of 10,569.77 million baht. The average IPOs listed on MAI per year is 9 companies with an average issue size of 1,174.42 million baht. The years with the highest number of IPOs listed on MAI are 2004 and 2005 at 14 companies per year. However, the year with the highest issue size is 2012 at 2,482.17 million baht (as shown in Table 4.1). Most of the IPOs were for companies that had been established for 1 to 10 years (28) and 11 to 20 years (28) before being listed on MAI (as shown in Table 4.2).

Table 4.3 Characteristics of Independent Variables

Variables / Characteristics	Age		Issue Size	
	SET	MAI	SET	MAI
Unit of Measurement	Years	Years	Million baht	Million baht
N	118	78	118	78
Minimum	1	2	102.73	32.00
Maximum	58	49	32966.40	600.00
Mean	15.13	15.56	1727.5178	135.5099
Standard Deviation	10.284	8.986	4444.27787	96.58416

The characteristics of the independent variables; age and size of companies are summarized in Table 4.3. The age of companies, which is measured by the difference between the established year and the offering year, has an average of 16 years for the companies listed both on SET and MAI. Bangkok Life Assurance Plc. (BLA) has the greatest number of years of establishment prior to going public at 58 years, among 118 IPOs listed on SET, whereas Phol Dhanya Plc. (PHOL) is the oldest company prior to going public at 49 years, among 78 IPOs listed on MAI. The newest companies prior to going public on SET and MAI are Globlex Holding Management Plc. (GBX) at 1 year and C.I. Group Plc. (CIG) at 2 years, respectively.

For the size of companies, which is represented by the issue size, the average size is 1,727.52 million baht for 118 IPOs listed on SET, while 135.51 million baht is the average size for 78 IPOs listed on MAI. The biggest size of the companies listed on SET and MAI during the period are Thai Oil Plc. (TOP) at 32,966.40 and Chow Steel Industries Plc. (CHOW) at 600 million baht, The companies listed on SET and MAI with the smallest issue size are Global Connections Plc. (GC) at 102.73 million baht and Vintage Engineering Plc. (VTE) at 32 million baht.

4.2 Underpricing

To answer the question whether underpricing exists in Thai stock markets, the initial return for each IPO has to be computed using formula (1), and then the average initial returns are calculated. The t-statistic is then executed to determine whether the average initial returns are significantly different from zero at the 95 percent confidence level. The following hypotheses have been set:-

H_0: Underpricing does not exist in Thai stock markets. (Average initial returns = 0)

H_1: Underpricing exists in Thai stock markets. (Average initial returns ≠ 0)

The results are summarized in Tables 4.4 and 4.5 below. Table 4.4 illustrates the average initial returns of IPOs at the 95 percent level of confidence. Table 4.5 provides a summary of null hypothesis testing for underpricing during the period 2004-2012.

Table 4.4 Initial Returns for IPOs Listed on SET and MAI in 2004-2012

Listing Markets	Issuance Year	*N*	Average Initial Returns; $IR_{i,1}$ (%)	t-statistics	p-value	Standard Deviation	Minimum Returns (%)	Maximum Returns (%)
SET	2004-2012	118	15.2313*	4.662	.000	.3549224	-23.91	200.00
MAI	2004-2012	78	34.2478*	5.963	.000	.5072462	-25.00	200.00
All	2004-2012	196	22.7991*	7.403	.000	.4311503	-25.00	200.00

Average initial returns are calculated as total initial returns of IPOs divided by the sample size.

*Significance at 95 Percent Confidence Interval Level

Table 4.5 Summary of Hypothesis Testing for Underpricing during 2004-2012

Null Hypotheses	Results	t-statistics	p-value
Underpricing does not exist in SET.	Rejected	4.662	.000
Underpricing does not exist in MAI.	Rejected	5.963	.000
Underpricing does not exist in Thai stock markets.	Rejected	7.403	.000

For the 118 IPOs listed on SET, the average initial returns of 15.23%, are significantly different from zero (*p-value* of 0.000 which less than 0.05 as shown in Table 4.5), so underpricing exists for IPOs listed on SET.

Furthermore, the result of 78 IPOs listed on MAI also presents the same result with average initial returns of 34.25%, which is significantly different from zero (*p-value* of 0.000 which is less than 0.05 as shown in Table 4.5).

Overall, the result of 196 IPOs listed on SET and MAI during the period 2004-2012 shows total average initial returns of 22.80%, which are significantly different from zero at the 95 percent level of confidence (*p-value* of 0.000 which is less than 0.05 as shown in Table 4.5).

Based on the aforementioned results, it can be concluded that the null hypothesis is rejected. This can confirm that underpricing exists in the SET and MAI stock markets. The results are

consistent with many previous researches (Ritter (1991); Levis (1993); Aggarwal et al. (1993); Thomadakis et al. (2007); Vithessonthi (2008); and Chorruk and Worthington (2009)).

4.3 Long-Term Performance

To analyze and answer whether the IPOs underperformed the market in the long-term, the average buy-and-hold market-adjusted returns for 6, 12, 18 and 24 months have to be calculated using formula (2). Thereafter, the t-statistic is applied to determine whether the average buy-and-hold market-adjusted returns are significantly different from zero at the 95 percent level of confidence. The following assumptions have been made to determine the t-statistic.

H_0: IPOs do not underperform the market in the long-term.
(Buy-and-hold market-adjusted returns = 0)

H_1: IPOs underperform the market in the long-term.
(Buy-and-hold market-adjusted returns $\neq$ 0)

The testing result is shown in Tables 4.6 and 4.7. Table 4.6 illustrates the average buy-and-hold market-adjusted returns with the level of significance at 95 percent. Table 4.7 summarizes the null hypothesis testing for the long-term performance of IPOs.

Table 4.6 Buy-and-Hold Market-Adjusted Returns for IPOs Listed on SET and MAI in 2004-2012

Listing Markets	Buy-and-Hold Period	*N*	Average Buy-and-Hold Market-Adjusted Returns; $BHAR_{i,n}$ (%)	t-statistics	p-value	Standard Deviation	Minimum Returns (%)	Maximum Returns (%)
SET	6-month	118	-0.6858	-.148	.883	.5029595	-90.12	226.87
	12-month	118	1.8416	.299	.766	.6692687	-73.85	338.17
	18-month	118	1.9458	.270	.788	.7824258	-85.22	421.26
	24-month	118	-3.3935	-.467	.641	.7896120	-107.17	456.85
MAI	6-month	78	-18.0469*	-3.911	.000	.4075514	-102.18	93.75
	12-month	78	-14.1740*	-2.129	.036	.5878661	-122.94	321.80
	18-month	78	-17.1456*	-2.043	.044	.7410994	-160.12	319.12
	24-month	78	-15.3763	-1.367	.176	.9933915	-157.04	368.48

Average buy-and-hold market-adjusted returns are calculated as total buy-and-hold market-adjusted returns for each period divided by the sample size.

* Significance at 95 Percent Confidence Interval Level

Table 4.7 Summary of Hypothesis Testing for Long-Term Performance

Null Hypotheses	Results	t-statistics	p-value
IPOs listed on SET do not underperform the market in the 6-month period.	Accepted	-.148	.883
IPOs listed on SET do not underperform the market in the 12-month period.	Accepted	.299	.766
IPOs listed on SET do not underperform the market in the 18-month period.	Accepted	.270	.788
IPOs listed on SET do not underperform the market in the 24-month period.	Accepted	-.467	.641
IPOs listed on MAI do not underperform the market in the 6-month period.	Rejected	-3.911	.000
IPOs listed on MAI do not underperform the market in the 12-month period.	Rejected	-2.129	.036
IPOs listed on MAI do not underperform the market in the 18-month period.	Rejected	-2.043	.044
IPOs listed on MAI do not underperform the market in the 24-month period.	Accepted	-1.367	.176

The results of buying stocks of IPOs using the closing price on the first trading day and holding for 6, 12, 18 and 24 months are shown in Table 4.6. The average buy-and-hold market-adjusted returns for 6, 12, 18 and 24 months of IPOs listed on SET are -0.69%, 1.84%, 1.95% and -3.39%, respectively, which are relatively low.

For IPOs listed on MAI, the average buy-and-hold market-adjusted returns for 6, 12, 18 and 24 months of IPOs listed on MAI are -18.05%, -14.17%, -17.15% and -15.38%, respectively.

The output of the second hypothesis testing is summarized in Table 4.7. In SET, the average buy-and-hold market-adjusted returns for all periods are not significantly different from zero at the 95 percent level of confidence (*p-value* is more than 0.05). Consequently, the null hypotheses are accepted; the IPOs listed on SET do not underperform the market in the long-term. However, the average buy-and-hold market-adjusted returns from 6 months and 24 months are negative. The average buy-and-hold market-adjusted returns of 12 and 18 months are 1.84% and 1.95%, respectively, which show small returns of IPOs over the market.

On the other hand, the IPOs listed on MAI that were held from the first trading day (as shown in Table 4.7) for 6, 12, and 18 months are significantly different from zero at the confidence level of 95 percent. Therefore, the null hypotheses are rejected (*p-value* is less than 0.05). In contrast, the 24 month buy-and-hold market-adjusted returns are not significantly different from zero, therefore, the null hypotheses are not rejected.

In conclusion, if IPOs listed on SET are held from the first trading day until the two-year anniversary, they do not underperform the markets with very small returns that outperform the market. In contrast, in the case of holding IPOs listed on MAI for two years, they underperform the market except for the 24 month holding period.

4.4 Cross-Sectional Analysis

From the previous section, the IPOs listed on MAI that were held from the first trading day for 6, 12, and 18 months significantly underperformed the market at the confident level of 95 percent. So, this section tests whether the age of companies prior to going public (*AGE*) and issue size (*SIZE*) affect the long-term underperformance of IPOs ($BHAR_{i,n}$). The multiple regression analysis has been applied following formula (3). However, the collinearity[1] must be identified before testing for multiple regression in order to ensure the reliability of the model.

[1] The collinearity is the condition where two independent variables are highly correlated (absolute value greater than 0.8) to each other. It is also known as multicollinearity when more than two independent variables are correlated. The criteria for applying the multiple regression is that the independent variables must not be correlated (or have low correlation) to each other in order to make the model more reliable.

Table 4.8 Pearson Correlation Matrix of Independent Variables

Independent Variables	MAI	
	AGE	SIZE
AGE	1	
SIZE	.133	1

The Pearson Correlation, as shown in Table 4.8, illustrates that no collinearity problem exists between the independent variables because the correlation values are low (.133 between age and size).

The multiple regression model was then executed. The dependent variables are the average buy-and-hold market-adjusted returns for 6, 12, and 18 months of the IPOs listed on MAI. The independent variables are age of companies prior to going public and issue size.

The following hypotheses should be verified.

Where age of companies prior to going public is used as an independent variable, the following hypotheses are to be tested.

H_0: Age of companies prior to going public does not affect the buy-and-hold market-adjusted returns of IPOs

H_1: Age of companies prior to going public affects the buy-and-hold market-adjusted returns of IPOs

Where issue size is used as an independent variable, the following hypotheses are to be tested.

H_0: Size of companies does not affect the buy-and-hold market-adjusted returns of IPOs

H_1: Size of companies affects the buy-and-hold market-adjusted returns of IPOs

The results of the multiple regression analysis for underperformance and the independent variables are shown in Table 4.9. Table 4.10 also provides a summary of null hypothesis testing for cross-sectional analysis.

Table 4.9 Results of Multiple Regression between the Long-Term Performance of IPOs and Age & Issue Size

Independent Variables	Coefficients	Dependent Variable : Buy-and-Hold Market-Adjusted Returns		
		6-month (MAI)	12-month (MAI)	18-month (MAI)
Intercept	Coefficient	-.291	-.446	-.027
	t-statistics	-.729	-.768	-.036
	p-value	.468	.445	.971
AGE	Coefficient	.093	.059	.035
	t-statistics	1.187	.518	.243
	p-value	.239	.606	.809
SIZE	Coefficient	-.027	.032	-.050
	t-statistics	-.346	.284	-.346
	p-value	.730	.777	.731
Model Summary	R^2	.019	.005	.002
	Adjusted R^2	-.007	-.021	-.024
	Std. Error of the Estimate	.409	.594	.750
	F-statistics	.723	.198	.079
	p-value	.489	.821	.924

Table 4.10 Summary of Hypotheses Testing for Cross-Sectional Analysis

Null Hypotheses	Results	F-statistics	p-value
Age of companies prior to going public and size of companies do not affect the 6-month buy-and-hold market-adjusted returns of IPOs listed on MAI.	Accepted	.723	.489
Age of companies prior to going public and size of companies do not affect the 12-month buy-and-hold market-adjusted returns of IPOs listed on MAI.	Accepted	.198	.821
Age of companies prior to going public and size of companies do not affect the 18-month buy-and-hold market-adjusted returns of IPOs listed on MAI.	Accepted	.079	.924

The significance of the models must be initially identified. With reference to Table 4.9, the independent variables (age of companies prior to going public and issue size) cannot be used to predict the 6-, 12-, and 18-month adjusted returns of IPOs listed on MAI at the 95 percent level of confidence as the *p-values* are greater than 0.05 (*p-values* of .489, .821, and .924, respectively).

Furthermore, the coefficients as shown in Table 4.9 for both age and issue size are relatively small indicating that the age of companies prior to going public and the issue size do not affect

the long-term performance of IPOs. Additionally, the R-squared and the adjusted R-squared as shown in Table 4.9 of all models are low. These also indicate that the age of companies prior to going public and issue size cannot be used to predict the long-term performance of IPOs.

The outcomes of the third and fourth hypothesis tests are summarized in Table 4.10. The null hypotheses of all models are not rejected at the 95 percent level of confidence. These are strongly supported by the results of the coefficients, the R-squared and the adjusted R-squared as described above. It can be then be concluded that age of companies prior to going public as well as the issue size do not affect the buy-and-hold performance of IPOs listed on MAI.

CHAPTER V – SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This last chapter provides a summary of results along with the conclusions. The implications are also discussed as well as the recommendation for further study.

5.1 Summary of Results and Conclusions

This study aims to answer three research questions regarding the underpricing phenomenon of 196 IPOs listed on SET and MAI during 2004-2012, the long-term performance of these IPOS under a buy-and-hold investment strategy, and the factors that could affect the long-term performance of IPOs.

For 118 IPOs listed on SET, the average initial returns during 2004-2012 are 15.23%. Underpricing exists for IPOs listed on SET during 2004-2012 and this is consistent with many previous studies. In the case of long-term returns, IPOs listed on SET provide relatively low returns but are not significantly different from zero. It can be concluded that IPOs listed on SET do not underperform the market for two consecutive years. The cross-sectional analysis of IPOs listed on SET is not performed as the long-term market-adjusted returns are not significant.

In the case of 78 IPOs listed on MAI, underpricing also exists in MAI markets as the average initial returns are 34.25%. Furthermore, the underperformance of IPOs listed on MAI exists if these stocks are bought and held for 6, 12, and 18 months as a result of the significant difference from zero of the market-adjusted returns. However, the 24 month returns do not underperform the market.

The cross-sectional analysis of IPOs listed on MAI has been performed for a buy-and-hold period of 6, 12, and 18 months, significant at the 95 percent confidence level. The condition, where the independent variables show a correlation to each other, has been verified and no collinearity problem exists. The results show that all independent variables cannot predict the 6, 12, and 18 month excess returns of IPOs listed on MAI as the p-values are greater than 0.05 at the 95 percent confidence level. Furthermore, the R-squared and adjusted R-squared for all models are low, which implies that age and issue size cannot be used to predict the long-term performance. In contrast to much previous evidence, this study concludes that the age of

companies prior to going public along with the issue size have no effect on the long-term performance of IPOs listed on MAI.

5.2 Implications

This study provides fresh academic evidence about the IPOs issued during 2004-2012. The value added to this research is not only that the IPOs listed on SET are included in this study, but also the IPOs listed on MAI. The results on underpricing are consistent with much previous international as well as Thai evidence. This implies inefficient capital markets in terms of IPO information in Thailand especially in MAI, which is the market for alternative investments. Investors can benefit from public information about IPOs to earn initial returns.

In addition, only the IPOs listed on MAI underperform the markets if held for 6, 12, and 18 months. The IPOs listed on SET provide very small returns over the market for 12 and 18 month holding periods. The results identify the long-term underperformance of IPOs in Thai equity markets, which is in line with the theory of efficient market. Additionally, the age of companies prior to going public and the issue size cannot be used to predict the long-term performance of IPOs listed on MAI as the models are not significant.

For the business world, individuals, as well as institutional investors, can obtain benefits from this study and invest in Thai IPOs as the initial returns on the first trading day are positive. Speculative investors can get benefit from buying IPO stocks and selling them on the first trading day, especially IPOs listed on MAI which provides higher initial returns than IPOs listed on SET.

In addition, investors should consider other factors other than age of companies prior to going public and issue size when deciding to invest in IPOs listed on MAI because they are not related to the performance of IPOs.

5.3 Further Study

Future study about underpricing can be conducted at different periods of time in order to determine whether the underpricing phenomenon still exists in Thai stock markets.

Underperformance can also be studied by expanding the buy-and-hold period e.g. three years. Additionally, the study of the factors affecting the long-run performance can be extended by searching for other variables such as corporate governance evaluation results, or changes in the dependent variable to other possible variables such as initial returns. These studies could provide benefits to academicians, investors, as well as issuers in the future.

BIBLIOGRAPHY

Aggarwal, R., Leal, R., & Hernandez, L. (1993). The aftermarket performance of initial public offerings in Latin America. *Financial Management*, 22, 42-53.

Allen, F., & Faulhaber, G. R. (1989). Signaling by underpricing in the IPO market. *Journal of Financial Economics*, 23, 303-323.

Alvarez, S., & Gonzalez, V. M. (2001). Long-run performance of initial public offerings (IPOs) in the Spanish capital market. *Working Paper*, University of Oviedo. 1-41.

Baron, D. P. (1982). A model of the demand for investment banking advising and distribution services for new issues. *The Journal of Finance*, 37, 4, 955-976.

Brennan, M. J., & Franks, J. (1997). Underpricing, ownership and control in initial public offerings of equity securities in the UK. *Journal of Financial Economics*, 45, 391-413.

Chan, K., Wang, J., & Wei, K. C. J. (2004). Underpricing and long-term performance of IPOs in China. *Journal of Corporate Finance*, 10, 409-430.

Charitou, A., & Constantinidis, E. (2004). Size and book-to-market factors in earnings and stock returns: empirical evidence for Japan. *Department of Business Administration Work Paper*, University of Cyprus, 1-36.

Chorruk, J., & Worthington, A. C. (2009). New evidence on the pricing and performance of initial public offerings in Thailand: 1997-2008. *Discussion Papers Finance*, Griffith University, 1-22.

Ewing, B. T., & Ozfidan, O. (2003). The performance of initial public offerings in an emerging market: the case of the Istanbul stock exchange. *International Journal of Business*, 8, 149-167.

Fama, E. F. (1970). Efficient Capital Markets: A review of theory and empirical work. *The Journal of Finance*, 25, 2, 383-417.

Gounopoulos, D., Nounis, C., & Stylianides, P. (2007). The short and long term performance of initial public offerings in the Cyprus stock exchange. *Journal of Financial Decision Making*, 4, 1-28.

Gregory, A., Matatko, J., Tonks, I., Purkis, R. (1993) UK director's trading: the impact of dealings in smaller firms. *Journal of Economic*. 104, 1-28.

Hensler, D. A., Herrera, M. J. & Lockwood, L. J. (2000). The performance of initial public offerings in the Mexican stock market, 1987-1993. *Journal of International Money and Finance*, 19, 93-116.

Kendall, M. G., Hill, A. B., (1953). The analysis of economic time-series-part I: prices. *Journal of the Royal Statistical Society.* 116, 1, 11-34.

Kim, K. A., Kitsabunnarat, P., & Nofsinger, J. R. (2004). Ownership and operating performance in an emerging market: evidence from Thai IPO firms. *Journal of Corporate Finance*, 10, 355-381.

Lee, P. J., Taylor, S. L., & Walter, T. S. (1996). Expected and realised returns for Singaporean IPOs: initial and long-run analysis. *Pacific-Basin Finance Journal*, 4, 153-180.

Levis, M. (1993). The long-run performance of initial public offerings: the UK experience 1980-1988. *Financial Management*, 22, 28-41.

Ljungqvist, A. (2006). IPO underpricing. *Handbook in Corporate Finance: Empirical Corporate Finance*, 1, 375-422.

Loughran, T., & Ritter, J. R. (2004). Why Has IPO Underpricing Changed Over Time? *Financial Management*, 33, 5-37.

Loughran, T., Ritter, J. R., & Rydqvist, K. (1994). Initial public offerings: international insights. *Pacific-Basin Finance Journal*, 2, 165-199.

Mikkelson, W. H., Partch, M. M., & Shah, K. (1997). Ownership and operating performance of firms that go public. *Financial Economics*, 44, 281-307.

Pagano, M., Panetta, F., & Zingales, L. (1998). Why do firms go public? An Empirical Analysis. *The Journal of Finance*, 1, 27-64.

Peter, S. (2007). Performance of initial public offerings and privatized offers: evidence from a developing country. *Managerial Finance*, 33, 798-809.

Reinganum, M. R. (1981). Misspecification of capital asset pricing: empirical anomalies based on earnings' yields and market values. *Journal of Financial Economic*, 9, 1, 19-46.

Ritter, J. R. (1991). The long-run performance of initial public offerings. *Journal of Finance*, 46, 3-27.

Ritter, J. R. (2003). Differences between European and American IPO markets. *European Financial Management*, 9, 421-434.

Rock, K. (1986). Why new issues are underpriced. *Journal of Financial Economics*, 15, 187-212.

Thaler, R. H. (1988). Anomalies : the winner's curse. *Journal of Economic Perspectives*, 2, 1, 191-202.

Thomadakis, S., Nounis, C., & Gounopoulos, D. (2007). Insights on the long term performance of Greek IPOs. *European Financial Management Journal*, 18, 1-41.

Vithessonthi, C. (2008). Stock price performance of initial public offerings: the Thai experience. *Journal of International Finance and Economics*, 8, 30-43.

Welch, I. (1989). Seasoned offerings, imitation costs, and the underpricing of initial public offerings. *The Journal of Finance*, 44, 421-449.

APPENDICES

Appendix A. List of Initial Public Offerings During 2004-2012 in SET Market (Source: Database of the Stock Exchange of Thailand (www.set.or.th))

No.	Symbol	Name	Industry	Year of Issuance	Issue Size (mil. baht)
1	A	Areeya Property Plc.	Property & Construction	2004	706.50
2	AAV	Asia Aviation Plc.	Services	2012	4,486.25
3	ACD	Asia Corporate Development Plc.	Services	2005	480.00
4	AF-O	Aapico Forging Plc.	Industrials	2005	389.54
5	AI	Asian Insulators Plc.	Resources	2004	960.00
6	AKR	Ekarat Engineering Plc.	Resources	2006	491.40
7	AMC	Asia Metal Plc.	Industrials	2004	175.00
8	ANAN	Ananda Development Plc.	Property & Construction	2012	5,598.60
9	AOT	Airports Of Thailand Plc.	Services	2004	17,489.20
10	APCS	Asia Precision Plc.	Industrials	2011	408.75
11	AQUA	Aqua Corporation Plc.	Services	2004	473.00
12	AS	Asiasoft Corporation Plc.	Services	2008	900.00
13	ASCON	Ascon Construction Plc.	Property & Construction	2005	210.00
14	ASK	Asia Sermkij Leasing Plc.	Financials	2005	235.41
15	BCH	Bangkok Chain Hospital Plc.	Services	2004	1,254.00
16	BEAUTY	Beauty Community Plc.	Services	2012	660.00
17	BLA	Bangkok Life Assurance Plc.	Financials	2009	2,700.00
18	BLISS	Bliss-Tel Plc.	Technology	2004	434.00
19	BLS	Bualuang Securities Plc.	Financials	2005	508.70
20	BMCL	Bangkok Metro Plc.	Services	2006	3,610.94
21	BSBM	Bangsaphan Barmill Plc.	Industrials	2005	988.00
22	BWG	Better World Green Plc.	Services	2007	240.00
23	CAWOW	California Wow Xperience Plc.	Services	2005	300.00
24	CITY	City Steel Plc.	Industrials	2006	264.60
25	CSL	CS Loxinfo Plc.	Technology	2004	1,125.00
26	CSP	CSP Steel Center Plc.	Industrials	2005	300.00
27	DCON	Dcon Products Plc.	Property & Construction	2004	370.00
28	DRT	Diamond Building Products Plc.	Property & Construction	2005	358.80
29	DSGT	DSG International (Thailand) Plc.	Consumer Products	2006	240.64
30	DTAC	Total Access Communication Plc.	Technology	2007	8,880.00
31	EASON	Eason Paint Plc.	Industrials	2005	180.00
32	ECL	Eastern Commercial Leasing Plc.	Financials	2004	125.75
33	ESSO	Esso (Thailand) Plc.	Resources	2008	9,304.00
34	FORTH	Forth Corporation Plc.	Technology	2006	469.50
35	FSS	Finansia Syrus Securities Plc.	Financials	2004	660.00
36	GBX	Globlex Holding Management Plc.	Financials	2004	494.50
37	GC	Global Connections Plc.	Industrials	2005	102.73

No.	Symbol	Name	Industry	Year of Issuance	Issue Size (mil. baht)
38	GL	Group Lease Plc.	Financials	2004	120.00
39	GLOBAL	Siam Global House Plc.	Services	2009	663.00
40	GLOW	Glow Energy Plc.	Resources	2005	12,144.00
41	GRAND	Grande Asset Hotels And Property Plc.	Services	2004	727.50
42	GSTEL	G Steel Plc.	Industrials	2006	2,400.00
43	GUNKUL	Gunkul Engineering Plc.	Resources	2010	540.00
44	IFS	IFS Capital (Thailand) Plc.	Financials	2010	162.00
45	IHL	Interhides Plc.	Industrials	2005	273.75
46	INOX	Posco-Thainox Plc.	Industrials	2004	5,250.00
47	IRP	Indorama Polymers Plc.	Industrials	2005	1,380.00
48	IVL	Indorama Ventures Plc.	Industrials	2010	4,692.00
49	JMART	Jay Mart Plc.	Technology	2009	135.00
50	JMT	JMT Network Services Plc.	Financials	2012	300.00
51	JTS	Jasmine Telecom Systems Plc.	Technology	2006	560.00
52	KBS	Khonburi Sugar Plc.	Agro & Food Industry	2011	1,365.00
53	KCAR	Krungthai Car Rent And Lease Plc.	Financials	2005	220.00
54	KSL	Khon Kaen Sugar Industry Plc.	Agro & Food Industry	2005	1,309.51
55	KTECH	Ktech Construction Plc.	Property & Construction	2004	350.00
56	LHBANK	LH Financial Group Plc.	Financials	2011	2,020.00
57	LHK	Lohakit Metal Plc.	Industrials	2008	220.80
58	MCOT	Mcot Plc.	Services	2004	3,539.50
59	MCS	M.C.S. Steel Plc.	Industrials	2005	336.00
60	MJD	Major Development Plc.	Property & Construction	2007	940.00
61	ML	Mida Leasing Plc.	Financials	2004	255.00
62	MPG	Mangpong 1989 Plc.	Services	2004	509.80
63	NCH	N. C. Housing Plc.	Property & Construction	2004	800.00
64	NNCL	Navanakorn Plc.	Property & Construction	2004	500.00
65	OISHI	Oishi Group Plc.	Agro & Food Industry	2004	706.52
66	PAP	Pacific Pipe Plc.	Industrials	2004	688.50
67	PERM	Permsin Steel Works Plc.	Industrials	2005	350.00
68	PM	Premier Marketing Plc.	Agro & Food Industry	2008	666.50
69	PREB	Pre-Built Plc.	Property & Construction	2005	214.50
70	PRIN	Prinsiri Plc.	Property & Construction	2005	434.00
71	PRINC	Principal Capital Plc.	Property & Construction	2005	525.00
72	PRO	Professional Waste Technology (1999) Plc.	Services	2004	295.00
73	PS	Pruksa Real Estate Plc.	Property & Construction	2005	1,916.75
74	PTL	Polyplex (Thailand) Plc.	Industrials	2004	1,656.00
75	PTSEC	Phatra Securities Plc.	Financials	2005	1,778.56
76	Q-CON	Quality Construction Products Plc.	Property & Construction	2004	640.00
77	RASA	Rasa Property Development Plc.	Property & Construction	2007	130.00
78	RHB OSK	Rhb Osk Securities (Thailand) Plc.	Financials	2006	840.00
79	RICH	Rich Asia Steel Plc.	Industrials	2006	225.00
80	RRC	Rayong Refinery Plc.	Industrials	2006	27,194.40

No.	Symbol	Name	Industry	Year of Issuance	Issue Size (mil. baht)
81	SABINA	Sabina Plc.	Consumer Products	2008	336.00
82	SAM	Samchai Steel Industries Plc.	Industrials	2004	300.00
83	SAT	Somboon Advance Technology Plc.	Industrials	2005	954.60
84	SCG	Sahacogen (Chonburi) Plc.	Resources	2004	432.00
85	SEAFCO	Seafco Plc.	Property & Construction	2004	200.00
86	SECC	S.E.C. Auto Sales And Services Plc.	Industrials	2006	300.00
87	SENA	Sena Development Plc.	Property & Construction	2009	346.50
88	SGP	Siamgas and Petrochemicals Plc.	Resources	2008	2,240.00
89	SIS	SIS Distribution (Thailand) Plc.	Technology	2004	178.45
90	SMIT	Sahamit Machinery Plc.	Industrials	2005	247.50
91	SMM	Siam Inter Multimedia Plc.	Services	2005	245.18
92	SMT	Stars Microelectronics (Thailand) Plc.	Technology	2009	455.40
93	SNC	Snc Former Plc.	Industrials	2004	228.38
94	SOLAR	Solartron Plc.	Resources	2005	640.00
95	SPACK	S. Pack & Print Plc.	Industrials	2004	238.00
96	SPPT	Single Point Parts (Thailand) Plc.	Technology	2005	119.02
97	SRICHA	Sriracha Construction Plc.	Property & Construction	2012	1,173.75
98	SUPER	Superblock Plc.	Property & Construction	2005	507.15
99	SYMC	Symphony Communication Plc.	Technology	2010	633.60
100	SYNEX	Synnex (Thailand) Plc.	Technology	2008	522.00
101	TKT	T.Krungthai Industries Plc.	Industrials	2004	164.00
102	TMT	Thai Metal Trade Plc.	Industrials	2005	505.75
103	TOG	Thai Optical Group Plc.	Consumer Products	2006	190.40
104	TOP	Thai Oil Plc.	Resources	2004	32,966.40
105	TSC	Thai Steel Cable Plc.	Industrials	2005	536.36
106	TTCL	Toyo-Thai Corporation Plc.	Property & Construction	2009	552.50
107	TTW	TTW Plc.	Resources	2008	4,200.00
108	TUCC	Thai Unique Coil Center Plc.	Industrials	2005	229.50
109	TWZ	TWZ Corporation Plc.	Technology	2005	228.00
110	TYM	Thai Yuan Metal Plc.	Industrials	2007	300.00
111	UNIQ	Unique Engineering And Construction Plc.	Property & Construction	2007	292.50
112	UOBKH	UOB Kay Hian Securities (Thailand) Plc.	Financials	2005	465.00
113	UTP	United Paper Plc.	Industrials	2004	291.46
114	VGI	VGI Global Media Plc.	Services	2012	3,080.00
115	VIH	Srivichaivejvivat Plc.	Services	2012	168.75
116	WHA	WHA Corporation Plc.	Property & Construction	2012	1,714.55
117	WORK	Workpoint Entertainment Plc.	Services	2004	580.00
118	YNP	Yarnapund Plc.	Industrials	2005	536.00

Appendix B. List of Initial Public Offerings During 2004-2012 in MAI Market (Source: Database of the Stock Exchange of Thailand (www.set.or.th))

No.	Symbol	Name	Industry	Year of Issuance	Issue Size (mil. baht)
1	2S	2S Metal Plc.	Industrials	2009	114.00
2	ACAP	Acap Advisory Plc.	Financials	2005	161.00
3	AF	Aira Factoring Plc.	Financials	2004	57.20
4	AGE	Asia Green Energy Plc.	Resources	2009	227.50
5	APCO	Asian Phytoceuticals Plc.	Consumer Products	2011	140.00
6	ARIP	ARIP Plc.	Services	2010	124.56
7	ARROW	Arrow Syndicate Plc.	Property & Construction	2012	275.00
8	BGT	BGT Corporation Plc.	Consumer Products	2007	94.00
9	BOL	Business Online Plc.	Services	2004	79.13
10	BROCK	Baan Rock Garden Plc.	Property & Construction	2006	240.00
11	BSM	Buildersmart Plc.	Property & Construction	2008	55.00
12	CHOW	Chow Steel Industries Plc.	Industrials	2011	600.00
13	CIG	C.I.Group Plc.	Industrials	2005	123.75
14	CMO	CMO Plc.	Services	2004	125.92
15	COLOR	Salee Colour Plc.	Industrials	2011	86.70
16	CPR	CPR Gomu Industrial Plc.	Industrials	2005	115.50
17	CRANE	Chu Kai Plc.	Industrials	2008	280.00
18	CYBER	Cyberplanet Interactive Plc.	Technology	2010	96.00
19	DEMCO	Demco Plc.	Resources	2006	152.50
20	DIMET	Dimet (Siam) Plc.	Property & Construction	2008	40.00
21	DNA	DNA 2002 Plc.	Services	2012	304.00
22	E	Evolution Capital Plc.	Agro & Food Industry	2005	92.02
23	EFORL	E For L Aim Plc.	Services	2009	88.00
24	ETG	Eternity Grand Logistics Plc.	Industrials	2006	84.32
25	FOCUS	Focus Development And Construction Plc.	Property & Construction	2004	112.00
26	FPI	Fortune Parts Industry Plc.	Industrials	2012	220.50
27	GFM	Goldfine Manufacturers Plc.	Industrials	2004	186.00
28	HOTPOT	Hot Pot Plc.	Agro & Food Industry	2012	285.54
29	HTECH	Halcyon Technology Plc.	Industrials	2009	61.12
30	HYDRO	Hydrotek Plc.	Property & Construction	2011	101.70
31	ILINK	Interlink Communication Plc.	Technology	2004	85.00
32	JUBILE	Jubilee Enterprise Plc.	Consumer Products	2009	98.00
33	KASET	Thai Ha Plc.	Agro & Food Industry	2005	66.00
34	KIAT	Kiattana Transport Plc.	Services	2009	180.00
35	L&E	Lighting & Equipment Plc.	Consumer Products	2004	77.35
36	LVT	L.V. Technology Plc.	Industrials	2004	60.00
37	MBAX	Multibax Plc.	Industrials	2007	175.00
38	MILL	Millcon Steel Plc.	Industrials	2007	290.00
39	MOONG	Moong Pattana International Plc.	Consumer Products	2009	67.90

No.	Symbol	Name	Industry	Year of Issuance	Issue Size (mil. baht)
40	NBC	Nation Broadcasting Corporation Plc.	Services	2009	145.00
41	NINE	Nation International Edutainment Plc.	Services	2010	36.00
42	OFM	Officemate Plc.	Services	2010	98.00
43	PHOL	Phol Dhanya Plc.	Services	2010	144.00
44	PICO	Pico Thailand Plc.	Services	2004	162.50
45	PJW	Panjawattana Plastic Plc.	Industrials	2012	403.20
46	PPM	Porn Prom Metal Plc.	Industrials	2004	122.00
47	PPS	Project Planning Service Plc.	Property & Construction	2012	84.00
48	PYLON	Pylon Plc.	Property & Construction	2005	100.10
49	QLT	Qualitech Plc.	Services	2009	79.20
50	QTC	QTC Energy Plc.	Resources	2011	100.00
51	SALEE	Salee Industry Plc.	Industrials	2005	99.70
52	SIMAT	Simat Technologies Plc.	Technology	2007	71.25
53	SLC	Solution Corner (1998) Plc.	Technology	2004	55.00
54	SPCG	SPCG Plc.	Resources	2005	43.50
55	STAR	Star Sanitaryware Plc.	Property & Construction	2005	122.85
56	SWC	Sherwood Chemicals Plc.	Industrials	2004	120.00
57	TAPAC	Tapaco Plc.	Industrials	2004	56.25
58	THANA	Thanasiri Group Plc.	Property & Construction	2009	87.50
59	TIES	Thai Industrial & Engineering Service Plc.	Property & Construction	2006	95.20
60	TMC	T.M.C. Industrial Plc.	Industrials	2012	347.10
61	TMI	Teera-Mongkol Industry Plc.	Industrials	2010	70.40
62	TMILL	T S Flour Mill Plc.	Agro & Food Industry	2012	263.50
63	TNDT	Thai Nondestructive Testing Plc.	Services	2007	62.00
64	TNH	Thai Nakarin Hospital Plc.	Services	2005	52.50
65	TPAC	Thai Plaspac Plc.	Industrials	2005	56.00
66	TPOLY	Thai Polycons Plc.	Property & Construction	2009	168.00
67	TRC	TRC Construction Plc.	Property & Construction	2005	51.00
68	TRT	Tirathai Plc.	Resources	2006	172.50
69	TSF	Three Sixty Five Plc.	Services	2005	63.90
70	TVD	TV Direct Plc.	Services	2012	120.24
71	UAC	UAC Global Plc.	Industrials	2010	120.00
72	UBIS	Ubis (Asia) Plc.	Industrials	2007	77.35
73	UEC	Unimit Engineering Plc.	Industrials	2005	342.21
74	UIC	Union Intraco Plc.	Industrials	2011	99.84
75	UKEM	Union Petrochemical Plc.	Industrials	2006	85.68
76	UMS	Unique Mining Services Plc.	Resources	2004	159.00
77	UWC	Ua Withya Plc.	Resources	2012	179.09
78	VTE	Vintage Engineering Plc.	Property & Construction	2011	32.00