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The Aftermarket Performance of Initial Public Offerings

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Abstract

This paper examines the aftermarket performance of initial public offerings (IPOs) and explores the underpricing of IPOs in an Asian emerging equity market using a comprehensive sample of IPOs. Our findings suggest that there exist a significant underpricing. Specifically, new issues have been offered at an average market-adjusted discount of about 20%. The magnitude of IPO underpricing is significantly larger for large firms, older firms and firms with small offering size.

Keywords: Initial Public Offerings; Underpricing; Aftermarket Performance; Market Efficiency; Stock Exchange of Thailand

1. Introduction

Using a comprehensive sample of initial public offering (thereafter, IPO) firms listed in the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (MAI), this study investigates the aftermarket performance of initial public offerings and explores the underpricing of IPOs in Thai Stock Exchanges (both the main board of Stock Exchange of Thailand; SET, and the Market for Alternative Investment; MAI).

We analyze the short-term returns of the Thai IPOs by examining abnormal returns and market adjusted returns in the first day of trading. We hypothesize that (a). there exists an underpricing in Thai stock markets; (b). market characteristics are the main determinant of the underpricing in Thai stock markets. Specifically, IPOs in Market for Alternative Investment exhibit higher initial return than that of Stock Exchange of Thailand; (c). the underpricing can be explained by IPOs characteristics such as industry, firm age, offering size and the use of gross proceeds. Our findings indicate that there exist statistically significant excess initial returns on both SET and MAI. Specifically, the close prices in the

first trading day are significantly higher than the offer prices with an average underpricing of 20%. However, underpricing occurred on both SET and MAI are indifferent from each other. With respect to firm characteristics, we find that large firms, older firms and firms with small offering size tend to exhibit large underpricing.

The remainder of this study is organized in six sections. Section 2 provides literature review including prior research on international IPOs. Section 3 discusses Initial Public Offering Regulation and Procedures in the Stock Exchange of Thailand. Section 4 presents sample data, sample selection and variable descriptions. Section 5 explains methodologies and model specifications. Section 6 offers empirical findings on initial public offering. Finally, Section 7 provides summary and conclusion.

2. Literature Review

The existence of underpricing for new stock issues is well documented in the stock markets around the world. Ljungqvist (2005) shows that the underpricing in the U.S. is between 10% and 20% but there is a substantial degree of variation over time. There are occasional periods when the average IPO is overpriced, and there are more frequent periods when companies go public at discount value. Similarly, Ibbotson (1975), Ibbotson and Jaffe (1975), Ritter (1984) and Rahman and Yung (1999) document that IPOs experience an average underpricing of 15% but the amount of underpricing varies over times and across industries. Jog and Srivastava (1997) document an average underpricing of 8.26% based on their sample of 399 IPOs listed on the Toronto Stock Exchange (TSE).

Such underpricings are not restricted to the North America markets. Levis (1990) studies the first day returns for IPOs on the London Stock Exchange. They find that the new issues have been offered at an average market-adjusted discount of 8.64%. Using a sample of 251 IPOs on both the London Stock Exchange (LSE) and the Alternative Investment Market (AIM), Filatotchev and Bishop (2002) examine U.K. IPOs underpricing but emphasize on the interlink between executive and non-executive characteristics, share ownership, and short-term performance. The average level of underpricing in their sample is 29.6% which is much higher than 8.64% of underpricing reported in the study by Levis (1990). They argue that the underpricing is a reflection of growing uncertainty and speculative trends in the U.K. stock market in the late 1990s. Furthermore, Drobetz, Kammermann and Walchli (2005) investigate the underpricing and long-term performance of a broad set of Swiss IPOs and report an average market adjusted initial return of 34.97%. Dimovski and Brooks (2003) study a relationship between financial characteristics and short-run performance of 358 Australian IPOs and report the underpricing of 23.60%.

IPOs in emerging markets also exhibit a large degree of underpricing. Chi and Padgett (2005) shows that the underpricings of IPOs in Chinese stock markets are remarkably high for "A" shares, which are restricted to Chinese residents. Ghosh (2002) studies a relationship between IPOs underpricing and ex-ante measures of risk proxies on the Bombay Stock Exchange (BSE). He finds that there is high level of underpricing after adjusting for the market (BSE) index return. Yong and Isa (2003) examine the levels of underpricing for new issues in Malaysia using a sample of all new listed companies on the Main Board and the Second Board of the Kuala Lumpur Stock Exchange (KLSE) and report the average initial return (offer-to-open) of 94.91%.

3. Initial Public Offering Regulation and Procedures in the Stock Exchange of Thailand

3.1 The History of the Stock Exchange of Thailand

The modern Thai capital market can be divided into two phases, beginning with "The Bangkok Stock Exchange" which was privately owned, following by the establishment of "The Securities Exchange of Thailand". The inception of the Thai stock market began as far back as July 1962, when a private group established an organized stock exchange as a limited partnership. The group later became a limited company and changed its name to the "Bangkok Stock Exchange Company Limited" (BSE) in 1963. Despite its well-intended foundation, the BSE was rather inactive. Annual turnover value consisted of only 160 million baht in 1968 and 114 million baht in 1969. Trading volumes continued to fall sharply thereafter to 46 million baht in 1970 and then 28 million baht in 1971. The turnover in debentures reached 87 million baht in 1972, but stocks continued to perform poorly, with turnover hitting an all-time low of only 26 million baht. The BSE finally ceased operations in the early 1970s. The evidence shows that the BSE failed to succeed because of a lack of official government support and a limited investor understanding of the equity market.

Despite the failure of the BSE, the concept of an orderly, officially supported securities market in Thailand had by then attracted considerable attention. In 1972, the Government took a further step by amending the "Announcement of the Executive Council No.58 on the Control of Commercial Undertakings Affecting Public Safety and Welfare". The changes expanded Government's control over the finance and securities companies to operate fairly and freely. Following these amendments, a long-awaited legislation establishing "The Securities Exchange of Thailand" (SET) was enacted in May 1974. This was followed by revisions of the Revenue Code at the end of the year, allowing the investment and savings in the capital market. The basic legislative framework was in place and on April 30, 1975, "The Securities Exchange of Thailand" officially started trading. On January 1, 1991 its name was formally changed to "The Stock Exchange of Thailand" (SET).

At present, the Thailand Stock Exchange is operating under the Securities and Exchange Act, 1992. It consists of 2 markets; the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (MAI). The latter was approved by the Securities and Exchange Commission (SEC) on November 11, 1998. The main purpose of MAI is to create new fund-raising opportunities for innovative business with high potential growth as well as to provide a greater range of investment alternatives. MAI officially commenced operation on June 21, 1999. The Brooker Group Public Company is the first company listed in MAI on September 17, 2001.

3.2 Thailand IPO Regulation and Procedures

This section provides an overview of rules, regulations and listing procedures in the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (MAI).

3.2.1 General Listing Criteria for Common Share

Table 1 presents qualifications of companies which listed on the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (MAI). The qualifications of MAI are similar to SET except only the size of the firms, number and distribution of shareholders in order to create new fund-raising opportunities for innovative business and small business.

Moreover to ensure transparent, fair and orderly trading at the Exchange, listed companies are required to disclose to the public information necessary for investment decision-making.

Corporate governance provides shareholders the opportunity to investigate the company's operations and ensure that the listed firm is operated in accordance with its

Table 1: Qualifications of Companies Listed on the Stock Exchange of Thailand and the Market for Alternative Investment

	Qualifications	
	SET	MAI
Status of the Applicant	- Public limited company or corporation established under a special law	- Public limited company or corporation established under a special law
Paid-up Capital for Common Shares (After Public Offering)	- More than 300 million baht.	- More than 20 million baht - If companies have the paid-up capital more than 300 million baht but do not have the SET qualifications fully, They are permitted to listed on MAI.
Distribution of Minor Shareholding and Number of Minor Shareholders	- More than 1,000 shareholders and hold more than 25% of paid-up capital.	- More than 300 shareholders and hold more than 20% of paid-up capital.
<i>Public Offering</i> – Approval	- Has been granted an approval by the SEC (except for a company established under special laws)	- Has been granted an approval by the SEC (except for a company established under special laws)
– Number of shares cumulatively offered for sale	- If paid-up capital less than 500 million baht, must have number of shares offered for sale more than 15% of paid-up capital. - If paid-up capital more than 500 million baht, must have number of shares offered for sale more than 10% of paid-up capital or 75 million baht.	- More than 15% of paid-up capital.
- Method of public offering	- Offering through an underwriter	- Offering through an underwriter
Track Record	- Must have been in operation for at least 3 years. - Must have had the same company management for at least one year prior to the application date. - Must have had net profit all of the followings: <ul style="list-style-type: none"> – Combined minimum net profits from operations of Bt 50 million from the past 2 or 3 years; – Net profits from operations of Bt 30 million for the latest full year, and: – Net profits from operations in the year of filing its listing application, as shown by combining all quarterly results for that year. 	- Must have been in operation for at least 2 years. - If have been in operation less than 2 years, must have been in operation for at least a year and have the market capitalization more than Bt 1,500 million. - Must have had net profits from operations of Bt 30 million for the latest full year.

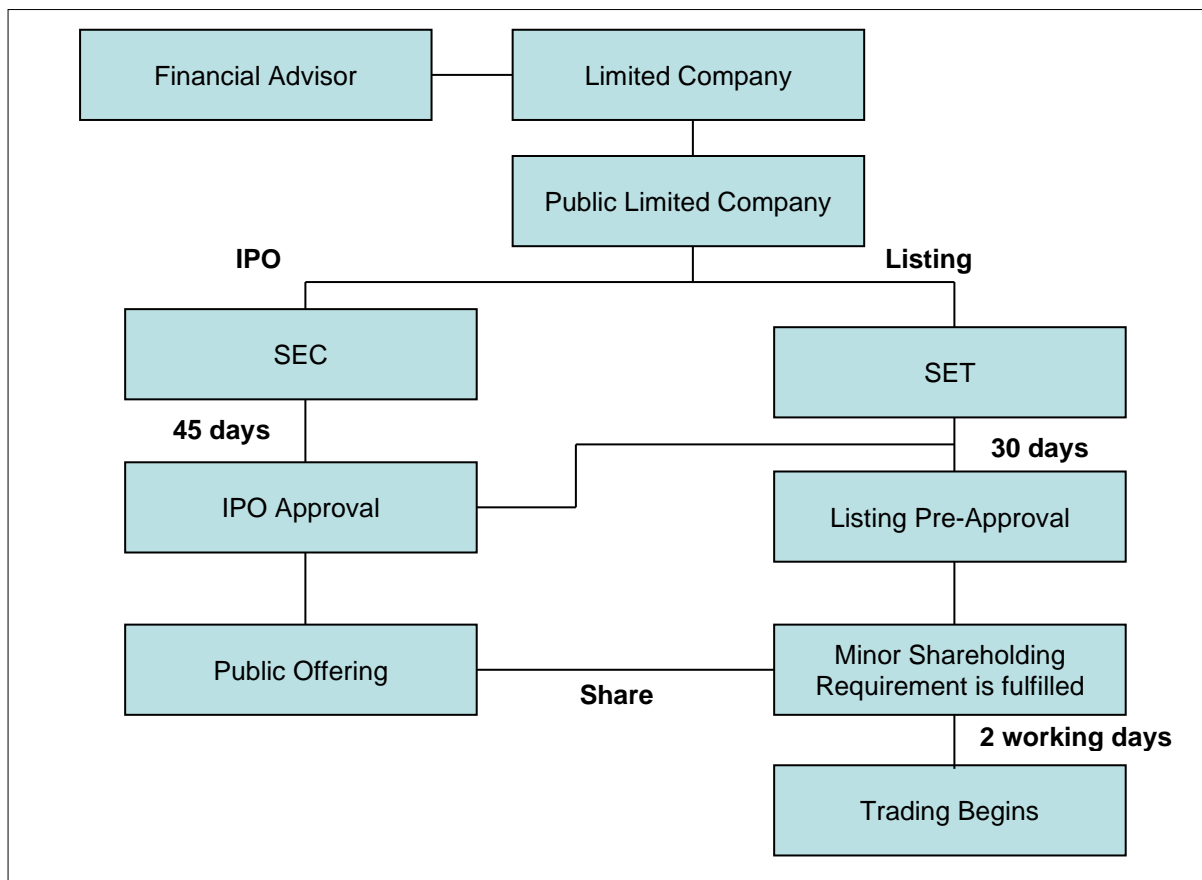
	<ul style="list-style-type: none"> - For a privatized state enterprise, operations prior to privatization will be considered as a continuation of operations; 	
<i>Financial Condition and Liquidity</i>	<ul style="list-style-type: none"> - Have a stable and healthy financial condition and have sufficient working capital - Have a minimum total shareholders' equity of Bt 300 million 	<ul style="list-style-type: none"> - Have a stable and healthy financial condition and have sufficient working capital - Have a minimum total shareholders' equity of Bt 20 million
<i>Management</i>		
<ul style="list-style-type: none"> - Management and Control Persons 	<ul style="list-style-type: none"> - Qualifications for management and control persons should be in line with the SEC regulations and they should not possess any characteristics as prohibited by the SEC. 	<ul style="list-style-type: none"> - Qualifications for management and control persons should be in line with the SEC regulations and they should not possess any characteristics as prohibited by the SEC.
<ul style="list-style-type: none"> - Scope of Duties and Responsibilities 	<ul style="list-style-type: none"> - Duties and responsibilities must be clearly defined as specified by the SEC. 	<ul style="list-style-type: none"> - Duties and responsibilities must be clearly defined as specified by the SEC.
Corporate Governance and Internal Control	<ul style="list-style-type: none"> - Have good corporate governance practices and a qualified audit committee as specified by the SET - Have effective auditing and internal control systems as specified by the SEC. 	<ul style="list-style-type: none"> - Have good corporate governance practices and a qualified audit committee as specified by the SET - Have effective auditing and internal control systems as specified by the SEC.
<i>Conflict of Interests</i>	<ul style="list-style-type: none"> - Must have no existing or potential conflict of interests as specified by the SEC. 	<ul style="list-style-type: none"> - Must have no existing or potential conflict of interests as specified by the SEC.
Articles of Association of the Applicant	<ul style="list-style-type: none"> - Must ensure that the articles of association of the applicant and its subsidiaries are in line with the SEC rules and regulations. 	<ul style="list-style-type: none"> - Must ensure that the articles of association of the applicant and its subsidiaries are in line with the SEC rules and regulations.
<i>Financial Statements and Auditors</i>	<ul style="list-style-type: none"> - Must ensure that financial statements have been prepared in accordance with the SEC rules and regulations. - The applicant 's auditor must be approved by the SEC. 	<ul style="list-style-type: none"> - Must ensure that financial statements have been prepared in accordance with the SEC rules and regulations. - The applicant 's auditor must be approved by the SEC.
Provident Fund	<ul style="list-style-type: none"> - On the date the listing application is filed, the provident fund of the applicant must already be established. 	<ul style="list-style-type: none"> - On the date the listing application is filed, the provident fund of the applicant must already be established.

corporate policies and plans, protecting the rights and interests of all stakeholders. The audit committee plays an important role in establishing good corporate governance. Normally, the Exchange determines that the listed companies must have 3 members of audit committee. At least one member should have financial and accounting knowledge and does not own shares exceeding 5% of paid-up capital of the listed company.

3.2.3 Listing Procedures

In order to offer securities to the public, the transformation of a limited company into a public company limited under the Public Company Act in 1992 is required. Such Act has plays an essential role in the protection of public investors. To file a listing application, the applicant may either 1) submit a listing application to the Exchange following the SEC’s approval of the public offering, or 2) submit listing and public offering applications to the SET and simultaneously to SEC (the Parallel Listing). The consideration of listing application by the Exchange will normally be completed within 30 days after all required documents and information has been submitted to the Exchange. In practice, however, the Exchange may complete consideration of the listing application within 10 days after all required documents and information has been submitted to the Exchange. The applicant must appoint a financial advisor, approved by the SEC, to coordinate listing activities with the SET and prepare listing documents in conjunction with the applicant. Listing procedures and preparation for listing common share are represented in Figure 1 and Table 2, respectively.

Figure 1: Listing Procedures



Applicants prepare to go public in 3 to 6 months before listing application filing. Companies study relevant rules and regulations such as the Public Company Act, SEC

rules and regulations governing the issue and the offering of securities to the public, and SET listing rules and regulations. Moreover, they appoint a financial advisor, discuss company information with a financial advisor in order to examine the applicant's qualifications and make appropriate adjustment in accordance with relevant requirements.

After the companies discuss with a financial advisor, they can submit listing and public offering applications to the SET and SEC and begin trading after the SEC and the exchange approve and common share are distributed to the minor shareholders.

Table 2: Preparation for Listing of Common Share

Duration	Descriptions
3 to 6 months before listing application filing	<ul style="list-style-type: none"> - Study relevant rules and regulations such as the Public Company Act, SEC rules and regulations governing the issue and the offering of securities to the public, and SET listing rules and regulations. - Appoint a financial advisor approved by the SEC - Discuss company information with a financial advisor in order to examine the applicant's qualifications and make appropriate adjustment as needed in accordance with relevant requirements - Plan for information preparation and make schedules - Restructure shareholding of the applicant and the other companies in the group, eliminate existing or potential conflict of interest, and establish a good corporate governance - Prepare financial statements and other accounting reports in line with acceptable accounting standards - Establish an audit committee and appoint independent directors
2 to 5 months before listing application filing	<ul style="list-style-type: none"> - Transform to public limited company - Prepare an initial public offering (IPO) application and relevant documents - Plan for and study pricing and distribution of securities - Prepare public relations plan
1 to 2 months before listing application filing	<ul style="list-style-type: none"> - Establish provident fund - Appoint share registrar - Submit IPO application to the SEC - Prepare for company visit and management interview by the SEC - Prepare listing application and relevant documents
A listing application is filed (the Exchange will be complete consideration of a listing application within 30 days)	<ul style="list-style-type: none"> - Submit a listing application to the Exchange - Prepare for company visit and management interview by the Exchange (For parallel application filings, the SEC and the SET will visit the company together) - Distribute shares to the public - Submit share distribution report and other required documents to the Exchange - Trading begins within three days after share distribution report and other required documents have been submitted to the Exchange

Source: *The Stock Exchange of Thailand (SET)*

4. Data Description and Sample Selection Criteria

4.1 Data Description

The data used in the analysis comprises 150 IPOs from the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (MAI) from January 2001 to December 2005. This study excludes seasonal equity offering (SEO), property funds, preferred stocks, unit trusts, depositary receipts, warrants and derivative warrants. The offering prices, gross proceeds, offering share, offering dates and listing dates are obtained from Security Exchange Commission of Thailand (SEC) Database (Form 81-1) in which advisory firms report to SEC. Additional information (e.g., daily price, market index, company age, investment bankers,

auditors, etc.) is collected from prospectuses filed with SEC and the SETINFO database which comprises Public SIMS Information (PSIMS) and SETSMART. To maintain the integrity of the data set, we cross check a list of IPOs firms and number of other IPOs being issued before first trading day to the Stock Exchange of Thailand's Fact Book.

4.2 Sample Selection Criteria

Table 3 presents sample selection process of new listed securities. There are total of 272 new listed securities. Listed companies in Thailand stock exchange are traded on two markets; The Stock Exchange of Thailand (SET) and The Market for Alternative Investment (MAI). The collective data of new listed securities on SET consists of 222 new securities. New listed securities on SET are classified by type of securities as common stocks, property funds, preferred stocks, unit trusts, depositary receipts, warrants and derivative warrants for 118, 8, 1, 7, 1, 85 and 2 securities, respectively. While the new listed securities on MAI are also classified by type of securities but have only two types; common stocks and warrants for 43 and 7 securities.

Table 3: Summary of Sample Selection

Summary of sample selection of new listed securities						
Sample Selection Process	2001	2002	2003	2004	2005	Total
New Listed Securities in January 2001 to December 2005	24	56	51	70	71	272
<u>Less:</u>						
Common Stocks listed on SET*	0	0	0	0	1	1
Property Funds	0	0	2	0	6	8
Preferred Stocks	1	0	0	0	0	1
Unit trusts	1	5	0	1	0	7
Depositary Receipts	0	0	0	1	0	1
Warrants listed on SET	11	24	20	16	14	85
Derivative Warrants listed on SET	0	0	2	0	0	2
Common Stocks listed on MAI**	3	6	1	0	0	10
Warrants listed on MAI	1	3	0	2	1	7
Final sample of IPOs	7	18	26	50	49	150

This study focuses only on common stocks for both markets. A newly-established firm; the PTT Chemical Public Company Limited (PTTCH) are excluded since it is the merger firm from National Petrochemical Public Company (NPC) and Thai Olefins Public Company (TOC). Furthermore, MAI started publishing its market index on September 2, 2002 after starting trading about one year. Thus, this study excluded the first 10 securities listed on MAI before index created. There are 117 and 33 new listed companies on SET and MAI, respectively. The final sample consists of 150 IPOs during 5 years period¹.

5. Methodology

¹ The 10 securities are omitted i.e. Siam Future Development Public Company Limited (SF), Matching Studio Public Company Limited (MATCH), Shun Thai Rubber Gloves Industry Public Company Limited (STHAI), Daidomon Group Public Company Limited (DAIDO), Traffic Corner Holdings Public Company Limited (TRAF), Yuasa Battery (THAILAND) Public Company Limited (YUASA), Chuo Senko (THAILAND) Public Company Limited (CHUO), Team Precision Public Company Limited (TEAM), Roynet Public Company Limited (ROYNET) and The Brooker Group Public Company Limited (BROOK).

5.1 Raw Initial Return and Market Adjusted Initial Return Calculation Method

We calculate an initial return for each IPO following the conventional method proposed by Aggarwal, Leal and Hernandez (1993), Gounopoulos (2003), Chi and Padgett (2002), Quang and Levich (1998), Kooli and Suret (2002). The raw initial return (RIR) on the first day of trading is calculated as follows

$$RIR_{i,1} = \frac{(P_{i,1} - P_{i,0})}{P_{i,0}} \dots\dots\dots (1.1)$$

where;

- RIR_{i,1} = Raw initial return of company ‘i’ at the end of the first trading day
- P_{i,0} = IPO offer price as per prospectus of company ‘i’
- P_{i,1} = Closing price of IPO of company ‘i’ at the end of the first trading day

Raw initial return is ideal for a market that there exists no opportunity cost and no time lag between the closing day and the first day of trading. During time lag period, major changes in market conditions could occur, and much information can be disclosed. The initial return measured could be affected by changes in market conditions rather than initial mispricing by the underwriters. Therefore, the raw initial return should be adjusted for market changes. The market adjusted initial return is calculated as follows:

$$MAIR_{i,1} = \frac{(P_{i,1} - P_{i,0})}{P_{i,0}} - \frac{(MI_{i,1} - MI_{i,0})}{MI_{i,0}} \dots\dots\dots (1.2)$$

or

$$MAIR_{i,1} = RIR_{i,1} - \frac{(MI_{i,1} - MI_{i,0})}{MI_{i,0}} \dots\dots\dots (1.3)$$

where;

- MAIR_{i,1} = Market adjusted initial return of company ‘i’ at the end of the first trading day
- RIR_{i,t} = Raw initial return of company ‘i’ at the end of the first trading day
- P_{i,0} = IPO offer price as per prospectus of company ‘i’
- P_{i,1} = Closing price of IPO of company ‘i’ at the end of the first trading day
- MI_{i,0} = Market Index at the first offering day of company ‘i’
- MI_{i,1} = Market Index at the close of first trading day of company ‘i’

The raw initial return derived in equation 1.1 is adjusted for market changes by taking into account the movement of market index between the first offering day and the first trading day of the IPOs (Gounopoulos (2003), Uddin (2000), Kooli and Suret (2002)) as shown in equation 1.2. The sample mean of raw initial return and mean of market adjusted initial return for the first trading day are represented by RIR bar and MAIR bar, respectively. The mean of market adjusted initial return can be viewed as a performance index which reflects return, in excess of the market return on an investment, divided equally by *N* new issues in a sample.

$$\overline{RIR}_1 = \frac{1}{N} \sum_{i=1}^N RIR_{i,1} \dots\dots\dots (1.4)$$

$$\overline{MAIR}_1 = \frac{1}{N} \sum_{i=1}^N MAIR_{i,1} \dots\dots\dots (1.5)$$

We examine both mean of raw initial returns and mean of market adjusted initial returns. To test hypotheses that mean of raw initial returns and mean of market adjusted initial returns for the first trading day equal zero, we use t-statistics to examine the statistical significant. T-statistics is computed as follows;

$$t_{RIR_1} = \frac{\overline{RIR}_1}{\left[\frac{S.D.}{\sqrt{N}} \right]} \dots\dots\dots (1.6)$$

$$t_{MAIR_1} = \frac{\overline{MAIR}_1}{\left[\frac{S.D.}{\sqrt{N}} \right]} \dots\dots\dots (1.7)$$

6. Empirical Results

6.1 Univariate Analysis: Raw Initial Return and Market Adjusted Initial Return

Summary of initial and market adjusted returns are presented in Panel A of Table 4. The mean (median) raw initial return and market adjusted initial return of 150 IPOs on the first trading day of 20.41 (7.68%) and 19.96% (6.05%) are statistically significant at 1% level. The standard deviation of raw and adjusted initial return is 36.60% and 35.71%. The mean of raw initial return (RIR) and market adjusted initial returns (MAIR) on SET are 21.64% and 21.07%; both are statistically significant at 1% level. The RIR ranges from -36.40% to 166.67%, while the MAIR ranges from -42.09% to 162.24%. The standard deviations of the raw and adjusted initial return on SET are 36.95% and 36.26%. For MAI, the RIR and MAIR are 16.29% and 16.23%. The *t*-test statistics indicates that both RIR and MAIR are statistically significant at 1% level. The standard deviation (S.D.) of RIR and MAIR are 35.61% and 34.05%.

Panel B shows the tests of differences between the SET and MAI. The tests consist of *t*-test statistics, One Way Analysis of Variance and Wilcoxon Test. The results indicate that the listing on different exchanges does not influence the degree of underpricing. From the parametric test, *t*-test presents the differences in means of IPOs are statistically insignificant. Using one-way analysis of variance (ANOVA), the *p*-value is 0.45 and 0.48 for RIR and MAIR. Result from non-parametric test, Wilcoxon test, shows that *p*-value is 0.338 and 0.398 for raw initial returns and market adjusted initial returns, respectively.

Table 4: Descriptive Statistic of Raw Initial Return and Market Adjusted Initial Return and Test of Differences between the Stock Exchange of Thailand and the Market for Alternative Investment

Panel A: Descriptive Statistic of Raw Initial Return and Market Adjusted Initial Return on the Stock Exchange of Thailand and the Market for Alternative Investment

	SET		MAI		ALL	
	RIR	MAIR	RIR	MAIR	RIR	MAIR
	n=117	n=117	n=33	n=33	n=150	n=150
Mean	21.64%	21.07%	16.29%	16.23%	20.41%	19.96%
Median	11.11%	8.50%	1.71%	1.75%	7.68%	6.05%
Maximum	166.67%	162.24%	122.22%	120.23%	166.67%	162.24%
Minimum	-36.40%	-42.09%	-46.75%	-35.31%	-46.75%	-42.09%
Std. Dev.	36.95%	36.26%	35.61%	34.05%	36.60%	35.71%
Skewness	1.45	1.45	1.07	1.16	1.37	1.4
Kurtosis	5.25	5.21	3.83	3.89	5.01	5.02
t-statistics	6.33*	6.29*	2.71*	2.82*	6.87*	6.89*
Jarque-Bera	65.44	64.91	7.70	9.00	73.15	75.60
Probability	0.00	0.00	0.02	0.01	0.00	0.00

* Statistically significant at 1% level.

Panel B: Test of Differences between the Stock Exchange of Thailand and the Market for Alternative Investment during 2001 to 2005

Test Methods	RIR		MAIR	
	Statistics	P-value	Statistics	P-value
Parametric Test				
t-test for differences in means	t=0.758	0.45	t=0.702	0.484
One-Way Analysis of Variance	F=0.575	0.45	F=0.493	0.484
Non-Parametric Test				
Wilcoxon test	Z=0.958	0.338	Z=0.845	0.398

Table 5 presents raw initial returns and market adjusted initial returns of the sample based on years of their listing. The highest means for both raw and adjusted initial return occurred in 2003, 50.96% and 48.25%. Whereas the lowest means for RIR and MAIR are shown in 2005 with 9.72% and 9.79%. Excess returns during 2003 to 2005 are statistically significant at 1% level. Moreover, starting in 2003, means of excess returns and standard deviations of returns tend to decrease over time.

Table 5: Raw Initial Returns and Market Adjusted Initial Returns Classified by Years

Raw Initial Return	Market Adjusted Initial Return
--------------------	--------------------------------

	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
	n=7	n=18	n=26	n=50	n=49	n=7	n=18	n=26	n=50	n=49
Mean	36.78%	12.98%	50.96%	14.91%	9.72%	33.77%	13.52%	48.25%	15.16%	9.79%
Median	21.71%	0.00%	49.23%	3.94%	2.56%	17.50%	2.45%	47.96%	4.63%	1.51%
Maximum	166.67%	106.67%	151.75%	98.75%	90.91%	162.24%	113.69%	144.39%	89.67%	92.32%
Minimum	-17.50%	-46.75%	-36.40%	-23.20%	-23.08%	-17.25%	-35.31%	-42.09%	-20.60%	-19.90%
Std. Dev.	61.48%	33.59%	43.66%	30.50%	24.55%	61.15%	33.32%	43.85%	28.75%	24.87%
Skewness	1.52	1.27	0.27	1.19	1.21	1.48	1.67	0.25	1.15	1.25
Kurtosis	4.03	4.98	2.7	3.67	4.22	3.95	5.78	2.64	3.45	4.22
t-statistic	1.58	1.68*	6.06***	3.46***	2.77***	1.46	1.77*	5.72***	3.73***	2.75***
Jarque-Bera	2.99	8.22	0.43	12.69	14.98	2.82	14.89	0.42	11.53	15.83
Probability	0.22	0.02	0.81	0	0	0.24	0	0.81	0	0

* Statistically significant at 10% level.

** Statistically significant at 5% level.

*** Statistically significant at 1% level.

Table 6 presents the initial performance of IPO by industry classification. Our results indicate that the resource industry has the highest average market adjusted initial return of 44.47%. The second highest average MAIR of 34.74% is from financial industry. Raw and market adjusted initial returns on both industries are statistically significant at 1% level. Agro & food industry has the worst initial performance with an average market adjusted performance of 4.56%. In the view of standard deviation, the financial industry has the highest standard deviation of market adjusted performance of 45.14%. Technology industry has the second highest volatility of 44.44%. On the other hand, Agro & Food industry has the lowest standard deviation of market adjusted initial return of 4.28%.

Panel A of Table 7 presents the initial performance of IPO classified IPO by age of the firm. Companies with operating histories in the age group “Over 26 years” have the highest degree of underpricing among the different age groups, with a raw initial return of 20.41% and MAIR of 19.96%. Our finding is inconsistent with the evidence shown in other empirical literature which regards the age of the IPOs as a signal of riskiness. Ritter (1991), Kiyamaz (2000) and Gounopoulos (2002) argue that older companies tend to have lower degree of underpricing as they are regarded as less risky. Nevertheless, the age group “between 21 to 25 years” has the lowest raw and market adjusted initial returns of 7.97% and 7.33%, respectively.

Table 6: Raw and Market Adjusted Initial Returns Classified by Industries

Industry Categories	n	Raw Initial Return	Market Adjusted Initial Return
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		Mean	Median	Std. Dev.	t-statistics	Mean	Median	Std. Dev.	t-statistic
Agro & Food Industry	4	2.92%	1.40%	6.60%	0.88	4.56%	3.90%	4.28%	2.13
Financials	21	34.98%	24.74%	47.45%	3.38***	34.74%	18.36%	45.14%	3.53***
Industrials	16	14.92%	2.33%	29.18%	2.05*	14.62%	2.82%	28.53%	2.05*
Property & Construction	33	13.33%	2.22%	32.11%	2.38**	12.14%	2.37%	30.27%	2.30**
Resources	8	45.20%	41.25%	37.17%	3.44***	44.47%	44.78%	41.31%	3.04***
Services	18	15.12%	4.86%	27.17%	2.36**	14.38%	5.73%	27.01%	2.26**
Technology	17	27.82%	20.00%	44.20%	2.60**	27.54%	22.80%	44.44%	2.56**
MAI	33	16.29%	1.71%	35.61%	2.71***	16.23%	1.75%	34.05%	2.82***

* Statistically significant at 10% level.

** Statistically significant at 5% level.

*** Statistically significant at 1% level.

Panel B of Table 7 reports the initial performance of IPOs based on time lag. According to Chowdhry and Sherman (1996) and Gounopoulos (2002), Time lag is defined as the number of days between the first offering day to the first trading day affects the underpricing level. The results show that IPO with short period between public offering and the first day of trading have the highest raw and adjusted return. The groups “10-12 days” and “7-9 days” have market adjusted performance of 21.50% and 21.23%, respectively. In addition, IPO with a time lag over 15 days present lowest raw and adjusted return of 19.05% and 17.10%. Table 7, Panel C, reports the initial performance of IPO based on the uses of gross proceeds. The findings indicate that the firms with equities of more than 800 million baht have lowest average raw and market adjusted initial returns of 17.78% and 15.73%, respectively.

7. Conclusions

The purpose of this study is to investigate the aftermarket performance of initial public offerings and explores the underpricing of IPOs on the Thailand Stock Exchange (both the main board of Stock Exchange of Thailand; SET, and the Market for Alternative Investment; MAI). First, this paper examines the degree of underpricing by analyzing abnormal return and market adjusted return in the first day of trading. Second, the paper further explores how market characteristics influence the degree of underpricing. Finally, this paper examines the extent to which firm characteristics affect the degree of underpricing.

This paper provides a number of findings. First, there exist statistically significant excess initial returns on both SET and MAI. Specifically, the close prices in the first trading day are significantly higher than the offer prices with an average underpricing of 20%. Second, however, the underpricing occurred on both SET and MAI are indifferent from each other. Lastly, with respect to firm characteristics, we find that large firms, older firms and firms with small offering size tend to exhibit large underpricing.

Table 7: Raw and Market Adjusted Initial returns of IPO listed on the SET and MAI Classified by Age, Time Lag and Gross Proceeds

Panel A: Raw and Market Adjusted Initial Returns Classified by Age			
Age	n	RIR	MAIR

		%	S.D.	%	S.D.
0-5 years	18	17.22%	31.17%	16.83%	30.32%
6-10 years	45	24.81%	39.94%	23.91%	38.37%
11-15 years	49	11.93%	28.53%	11.57%	27.64%
16-20 years	14	31.05%	37.25%	30.20%	37.98%
21-25 years	11	7.97%	23.82%	7.33%	22.06%
Over 26 years	13	40.89%	55.51%	42.18%	54.44%
Total	150	20.41%	36.60%	19.96%	35.71%

Panel B: Raw and Market Adjusted Initial Returns Classified by **Time Lag**

Time Lag	n	RIR		MAIR	
		%	S.D.	%	S.D.
7-9 days	41	21.54%	29.86%	21.23%	29.78%
10-12 days	49	22.39%	30.69%	21.50%	29.45%
13-15 days	41	17.56%	42.80%	18.17%	41.94%
Over 15 days	19	19.05%	38.39%	17.10%	40.76%
Total	150	20.41%	36.60%	19.96%	35.71%

Panel C: Raw and Market Adjusted Initial Returns Classified by **Gross Proceeds**.

Gross Proceeds	n	RIR		MAIR	
		%	S.D.	%	S.D.
under 200 mil.	52	24.32%	41.11%	24.24%	40.10%
200 mil. - 400 mil.	36	11.60%	30.11%	12.04%	29.36%
400 mil. - 600 mil.	22	29.92%	41.94%	29.10%	41.68%
600 mil. - 800 mil.	11	19.06%	38.19%	18.80%	34.05%
Over 800 mil.	29	17.78%	29.49%	15.73%	29.38%
Total	150	20.41%	36.60%	19.96%	35.71%

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