MANAGEMENT OF THE INITIAL PUBLIC OFFERING PERFORMANCE: EMPIRICAL EVIDENCE FROM THE THAI STOCK MARKET

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บทคัดย่อ

การวิจัยครั้งนี้มีจุดมุ่งหมายที่จะศึกษาถึงปัจจัยที่กำหนดผลตอบแทนของการเสนอขายหลักทรัพย์ต่อ
ประชาชนในครั้งแรกในประเทศไทย โดยเฉพาะปัจจัยที่เกิดขึ้นตั้งแต่ขั้นตอนการออกหลักทรัพย์จนถึงวันเข้าทำการ
ซื้อขายหลักทรัพย์ในวันแรก ประกอบด้วย 6 ปัจจัยหลักซึ่งได้แก่ ชื่อเสียงของผู้จัดจำหน่ายหลักทรัพย์ สัดส่วนการถือ
ครองหลักทรัพย์ของผู้ถือหุ้นเดิม การตั้งราคาหลักทรัพย์โดยการสำรวจความต้องการจากนักลงทุนสถาบัน สัดส่วนการ
กระจายหลักทรัพย์ต่อนักลงทุนสถาบัน ระยะเวลาของการห้ามทำการซื้อขายหลักทรัพย์และความสนใจในหลักทรัพย์
ของนักลงทุน ข้อมูลที่ใช้ในการศึกษาประกอบด้วยหลักทรัพย์ที่เสนอขายต่อสาธารณชนมีจำนวน 152 บริษัท
ซึ่งครอบคลุมบริษัทจดทะเบียนในตลาดหลักทรัพย์ระหว่างปี 2001-2011 และได้ใช้สมการถดถอยในการวิเคราะห์
ข้อมูลเพื่อที่จะศึกษาถึงความสัมพันธ์และผลกระทบของปัจจัยทั้งหกดังกล่าวที่มีต่ออัตราผลตอบแทนหลักทรัพย์
ที่เสนอขายต่อประชาชนในครั้งแรก

จากการวิจัยพบว่า มี 3 ปัจจัยหลักได้แก่ สัดส่วนการถือครองหลักทรัพย์ของผู้ถือหุ้นเดิม สัดส่วนการกระจาย
หลักทรัพย์ต่อนักลงทุนสถาบัน และความสนใจในหลักทรัพย์ของนักลงทุน เป็นปัจจัยหลักที่มีผลกระทบต่อ
อัตราผลตอบแทนหลักทรัพย์ที่เสนอขายต่อประชาชนในครั้งแรกในประเทศไทย สัดส่วนการกระจายหลักทรัพย์ต่อ
นักลงทุนสถาบันเป็นปัจจัยที่ส่งผลกระทบสูงที่สุด ปัจจัยทั้ง 3 ดังกล่าวมีความสัมพันธ์ในทางตรงกันข้ามกับ
อัตราผลตอบแทนของการเสนอขายหลักทรัพย์ต่อประชาชนในครั้งแรกอย่างมีนัยสำคัญ นักลงทุนควรพิจารณา
หลักทรัพย์ที่เสนอขายหลักทรัพย์ต่อประชาชนในครั้งแรก โดยมีสัดส่วนการถือครองหลักทรัพย์ของผู้ถือหุ้น
เดิมที่อยู่ในระดับต่ำ และสัดส่วนการกระจายหลักทรัพย์โดยส่วนใหญ่ควรกระจายให้แก่นักลงทุนรายย่อยมากกว่า
นักลงทุนสถาบัน นอกจากนี้นักลงทุนควรระมัดระวังการรับรู้ข่าวสารที่ได้จากหนังสือพิมพ์ก่อนตัดสินใจในการลงทุน

Abstract

This research aims to explore the determinants of the underpricing of IPO in Thailand. The relationships between the underpricing of IPO and the major elements derived during and after the IPO process until the first trading day are examined. Six major elements are underwriter reputation, ownership concentration, book-building, IPO allocation to institutional investors, the length of the lock up period, and investor interest. The data comprise almost the whole population of 152 IPO companies listed on the Stock Exchange of Thailand (SET) between 2001 and 2011. Cross-sectional regression models are employed.

It is found that only three major elements: ownership concentration, IPO allocation to institutional investors, and investor interest are the key determinants of the underpricing in Thailand. IPO allocation appears to be the strongest factor. These three factors are negatively related to the underpricing. IPO companies that have low ownership retention and allocate their shares to the retail investors can generate a higher initial return. Investors should be cautious when absorbing IPO information from newspapers.

Key words: underpricing, initial public offering, underwriter reputation, ownership concentration, book-building, IPO allocation, the length of the lock up period, and investor interest.

INTRODUCTION

Asian countries are playing an increasingly significant role in the global economy. Their capital markets are stronger than ever. By 2010, the number of newly listed companies in Asia, particularly China, India, and Hong Kong, peaked at 1,075 companies going public. Greater China (China, Hong Kong and Taiwan) is the world's largest holders of raised capital with over USD130 billion from 440 IPOs in 2010, accounting for 46% of global raised capital. India is ranked second with over USD8 billion from 63 IPOs. Philippines is ranked lowest in terms of IPO deals in Asia with only USD283 million from 5 IPOs, followed by Thailand which had only USD266 million from 11 IPOs (Ernst & Young 2011; WFE). Moshirian, Ng, and Wu (2010) have documented that initial returns during 1991-2004 in emerging Asian markets, China (202.63%), Korea (70.30%) and Malaysia (61.81%) far exceed those in Asian markets, Hong Kong (21.43%), Japan (34.04%) and Singapore (33.10%). However, Thailand, another Asian country in an emerging market, has an average initial return of only 18% from 154 IPOs between 2001 and 2011, which is far less than those of other emerging Asian economies (Stock Exchange of Thailand, 2011). The different degrees of such initial return and the number of IPOs suggest that there are some market-specific features in Thailand that influence initial return and IPO activity. The primary concern is how to increase the activity of IPOs in Thailand, which will in turn improve the number of listed companies, the market capitalization and finally enhance the strength of the country's economy.

Initial returns are the reflections of two components; private information and public information (Loughran & Ritter, 2002). Private information is revealed by the investors' demand and the firm's valuation during the IPO process while public information is the incremental information publicized after the IPO process until the first trading day. Initial returns are the aggregate of underwriters' valuation plus some incremental information given by the market. Key determinants of IPO initial return derived during and after the IPO process until the first trading day in a variety of market environments include underwriter reputation, ownership concentration, pricing procedure, IPO allocation, length of lock up period and investor interest (Carter, Dark, & Singh, 1998; Venkatesh & Neupane, 2005; Chahine, 2007; Jenkinson & Jones, 2007; Tirapat, 2004; Reese, 1998). Given other issues such as corporate governance and tax incentive are constant, all of these elements are focused in this study. This can fully capture and replicate the real business practices since such elements simultaneously exist and are inevitable in any IPO activity, whereas the existing literature pronounces on only a specific element to performance at a time. In addition, the existing literatures are mostly concentrated in the U.S. as well as other countries in developed market whereas the existing literatures on the IPO performance in Thailand are limited (Logue, 1973; Ibbotson, 1975; Baron, 1982; Ritter, 1984, 1991; Rock, 1986; Carter & Manaster, 1990; Aggarwal & Rivoli, 1990; Loughran & Ritter, 1995).

LITERATURE REVIEW

IPO Performance

Most studies find the short-run IPO performance or positive initial returns known as "underpricing" after companies go public (Moshirian et al., 2010; Vong & Trigueiros, 2010; Zouari, Boudriga & Taktak, 2009; Vithessonthi, 2008b; Yeh, Shu & Guo, 2008; Chen, Choi & Jiang, 2007; Zheng, 2007) (Table 1). Underpricing is measured by the percentage difference between the first-day closing price in the secondary market and the offering price at which the IPO shares were sold in the primary market (Chan, 2010; Shi-yu & Chang, 2008; Ritter, 1998). It can be alternatively measured as the amount of "money left on the table", calculated by the difference between the first-day closing price and the offer price, multiplied by the number of shares sold at the IPO (Loughran & Ritter, 2002).

Table 1: International Evidence of IPO Short Run Performance

Country	Author	Sample Size	Time Period	Avg. Initial Returns (%)
Argentina*	Eijgenhuijsen & van der Valk (2006)	20	1991 - 1994	4.4
Australia	Dimovski & Brooks (2004)	358	1994 - 1999	25.6
Australia*	Lee, Taylor, & Walter; Woo; Pham; Ritter	1,103	1976 - 2006	19.8
Austria*	Aussenegg	96	1971 - 2006	6.5
Belgium*	Rogiers, Manigart & Ooghe; Manigart; DuMortier; Ritter	114	1984 - 2006	13.5
Brazil*	Aggarwal, Leal, & Hernandez; Saito (2006)	180	1979 - 2006	48.7
Bulgaria*	Nikolov	9	2004 - 2007	36.5
Canada*	Jog & Riding; Jog & Srivastava; Kryzanowski, Lazrak, & Rakita; Ritter	635	1971 - 2006	7.1
Canada	Kooli & Suret (2001)	445	1991 - 1998	20.6
Canada	Zheng (2007)	2,493	1980 - 1997	12.2
Chile*	Aggarwal, Leal, & Hernandez; Celis & Maturana; Ritter	65	1982 - 2006	8.4
China*	Chen, Choi, & Jiang (A-shares) (2007)	1,394	1990 - 2005	164.5
China	Chan, Wang, & Wei (2004)	570 (A-Share)	1993 - 1998	178(A-Share)
China	(2004)	39 (B-Share)	1993 - 1998	116(B-Share)
China	Chi & Padgett (2005)	668	1996 - 2000	129.2
China	Shi-yu & Chang (2008)	782	1991 - 2004	130.3
Cyprus*	Gounopoulos, Nounis, & Stylianides (2005)	51	1999 - 2002	23.7
Denmark*	Jakobsen & Sorensen; Ritter	145	1984 - 2006	8.1
Egypt*	Omran	53	1990 - 2000	8.4
Finland*	Keloharju	162	1971 - 2006	17.2
Finland	Keloharju & Torstila (2002)	29	1987 - 1994	14.9
France*	Husson & Jacquillat; Leleux & Muzyka; Paliard & Belletante; Derrien & Womack; Chahine; Ritter	686	1983 - 2006	10.7
Germany*	Ljungqvist; Rocholl: Ritter; Vismara	700	1978 - 2008	25.3
Greece*	Nounis, Kazantzis, & Thomas; Thomadakis, Gounopoulos, & Nounis	372	1976 - 2007	50.9
Hong Kong	Cheng, Chan, & Mak (2005)	214	1993 - 1997	12.9
Hong Kong*	McGuinness; Zhao & Wu; Ljungqvist & Yu; Fung, Gul, & Radhakrishnan; Ritter	1,008	1980 - 2006	15.9

Country	Author	Sample Size	Time Period	Avg. Initial Returns (%)
Hong Kong	Vong & Trigueiros (2010)	480	1994 - 2005	6.9
India*	Marisetty & Subrahmanyam	2,811	1990 - 2007	92.7
Indonesia*	Hanafi; Danny; Suherman	339	1989 - 2008	21.5
Iran*	Bagherzadeh (2006)	279	1991 - 2004	22.4
Ireland*	Ritter	31	1999 - 2006	23.7
Israel*	Kandel, Sarig, & Wohl; Amihud & Hauser; Ritter	348	1990 - 2006	13.8
Italy	Cassia, Giudici, Paleari, & Redondi (2004)	182	1985 - 2001	21.9
Japan*	Fukuda; Dawson & Hiraki; Hebner & Hiraki; Pettway & Kaneko; Hamao, Packer, Ritter; Kaneko & Pettway; Ritter	2,628	1970 - 2008	40.1
Jordan*	Marmar	53	1999 - 2008	149
Korea*	Dhatt, Kim & Lim; Ihm; Choi & Heo; Mosharian & Ng; Cho; Ritter (2000)	1,490	1980 - 2008	55.2
Malaysia*	Isa; Isa & Yong; Yong	350	1980 - 2006	69.6
Malaysia	Jelic, Saadouni, & Briston (2001)	182	1980 - 1995	99.3
Mexico*	Aggarwal, Leal, & Hernandez; Eijgenhuijsen & Van Der Valk	88	1987 - 1994	15.9
Netherlands*	Wessels; Eijgenhuijsen, & Buijs; Jenkinson, Ljungqvist, & Wilhelm; Ritter	181	1982 - 2006	10.2
New Zealand*	Vos & Cheung; Camp & Munro; Ritter	214	1979 - 2006	20.3
Nigeria*	Ikoku; Achua	114	1989 - 2006	12.7
Norway*	Emilsen, Pedersen & Saettem; Liden; Ritter	153	1984 - 2006	9.6

Country	Author	Sample Size	Time Period	Avg. Initial Returns (%)
Philippines	Sullivan & Unite (1999)	104	1987 -1997	22.7
Philippines*	Sullivan & Unite; Ritter	123	1987 - 2006	21.2
Poland*	Jelic & Briston; Ritter	224	1991 - 2006	22.9
Portugal*	Almeida & Duque; Ritter	28	1992 - 2006	11.6
Russia*	Ritter	40	1999 - 2006	4.2
Singapore*	Lee, Taylor, & Walter; Dawson; Ritter(1998)	519	1973 - 2008	27.4
Singapore	Reber & Fong (2006)	100	1998 - 2000	18
South Africa*	Page & Reyneke; Ali, Subrahmanyam & Gleason; Ritter	285	1980 - 2007	18.0
Spain*	Ansotegui & Fabregat; Alvarez Otera	128	1986 - 2006	10.9
Sri Lanka*	Samarakoon	115	1987 - 2007	48.9
Sweden*	Rydqvist; Schuster; Simonov; Ritter	406	1980 - 2006	27.3

Country	Author	Sample Size	Time Period	Avg. Initial Returns (%)
Switzerland*	Kunz, Drobetz, Kammermann, & Walchli; Ritter	159	1983 - 2008	28.0
Switzerland	Kunz & Aggarwal (1994)	42	1983 - 1989	35.8
Taiwan*	Chen (1997)	1,312	1980 - 2006	37.2
Taiwan	Yeh, Shu & Guo (2008)	218	1992 - 2001	28.9
Thailand	Allen et al. (1999)	150	1985 - 1992	63.5
Thailand	Lonkani (1999)	292	1987 - 1997	46.7
Thailand*	Wethyavivorn & Koo-smith; Lonkani & Tirapat; Ekkayokkaya and Pengniti	459	1987 - 2007	36.6
Thailand	Vithessonthi (2008a,b)	123	2000 - 2005	19.9
Tunisia	Naceur (2000)	12	1992 - 1997	1.6
Tunisia	Zouari, Boudriga, & Taktak (2009)	34	1992 - 2008	17.8
Turkey*	Kiymaz; Durukan; Ince; Kucukkocaoglu (2000)	315	1990 - 2008	10.6
United Kingdom*	Dimson; Levis	4,198	1959 - 2008	16.3
United Kingdom	Goergen, Khurshed & Mudambi (2007)	228	1991 - 1995	9.7
United States*	Ibbotson, Sindelar & Ritter; Ritter	12,028	1960 - 2008	16.9
United States	Li, Zheng, & Melancon (2005)	1,673	1993 - 2000	23.5
United States*	Dimson; Levis	4,198	1959 - 2008	16.3
United States*	Ibbotson, Sindelar & Ritter; Ritter	12,028	1960 - 2008	16.9
United States	Loughran & Ritter (2004)	6,169	1980 - 2000	18.9
United States	Nimalendran, Ritter, & Zhang (2007)	3,499	1993 - 2001	27.1

**Sources:** Adapted from Loughran, Ritter, & Rydqvist, (2010)

The Triangular Relationship in an IPO Activity

Chemmanur and Fulghieri (1994) have identified three major parties involved; issuer, investor and underwriter in an IPO activity (Figure 1). Initially, the issuer appoints an underwriter to help determine which type of security to be issued, best offering (subscription) price and time to bring it to the market (Chen, Fok and Wang, 2006). The reputation of underwriter is the first element that influences the IPO performance. The discussion between underwriters and issuers on the percentage of ownership holding after companies go public is held. The percentage of ownership holding is used to manage and control the company. Ownership concentration is a second variable. During the pricing process, lead underwriter gathers the investors' demand by using book building, the third variable. At the same time, underwriters need to allocate new issues based upon investors' information disclosed. IPO allocation represents the fourth variable determining IPO performance. As regulated by the Securities Exchange Commission (SEC), the lock-up period is established for a specified period of time to prevent sales of new equity issues from inside investors. Lockup agreement influences stock reaction and IPO valuation, representing the fifth variable. After the IPO process until the first trading day, the press referring to newspaper citation, a proxy of investor interest can influence the IPO performance. Investor interest is the sixth variable.

When shares are firstly traded on the stock market, it is in the issuer's interest to price the IPO shares below the highest price at which the underwriter can sell, resulting in larger combined proceeds from the initial and second offerings (Chemmanur, 1993). The issuer cannot only raise capital from the public, but can increase also the value of existing holdings when the initial return occurs (Loughran & Ritter, 2002). An underwriter not only receives commission fees from the issuer, but also gains reputation and potential offers when the issues are successful (Carter, 1992). An IPO that is oversubscribed to a greater degree is more associated with underpricing (Chemmanur, 1993). The issuer and underwriter view an underpriced and oversubscribed IPO as successful (Chemmanur, 1993; Muscarella and Vetsuypens, 1989) while the investor views underpricing as a successful IPO. Underpricing is, therefore, the mutual target of the three partie to participate in the IPO activity. Successful IPOs thus are necessarily underpriced (Ritter & Welch, 2002). It is proposed to use the underpricing of IPOs as a proxy for successful IPOs in this study. The number of companies going public is higher when IPOs are underpriced (Lowry & Schwert, 2002).

Figure 1: The Triangular Relationship Among Investors, Issuers, and Underwriters
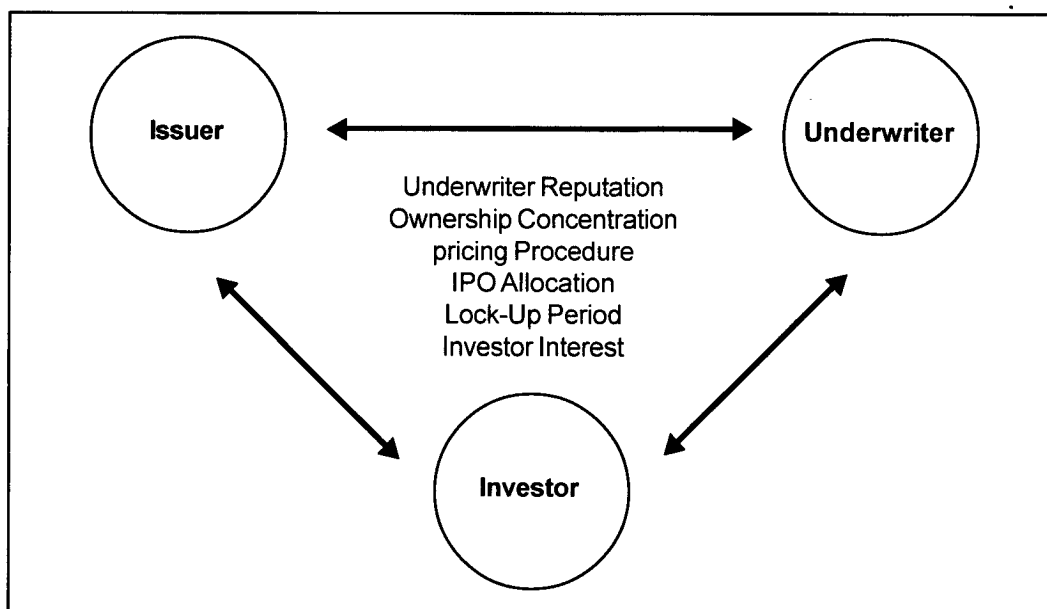
Sources: Developed particularly for this study

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Determinants of IPO Performance

Underwriter Reputation: Underwriters set an offering price that is low sufficiently to attract the demand of investors, but high sufficiently to raise an enough capital for issuers. They have discretion to allocate the shares among investors (Rocholl, 2009). The analysis of the impact of underwriter reputation on IPO initial return is mixed. A negative relationship between the degree of IPO underpricing and the level of underwriter reputation was found (Johnson & Miller, 1988; Carter & Manaster, 1990; Carter, 1992; Helou & Park, 2001; Kenourgious, Papathanasiou, & Melas, 2007). Logue, Rogalski, Seward, and Foster-Johnson (2002) also supported such a relationship over longer period. In contrast, other studies found a positive relationship (Beatty & Welch, 1996; Cooney, Singh, Carter, & Dark, 2001; Jelic, Saadouni, & Briston, 2001; Loughran & Ritter, 2004; Kirkulak & Davis, 2005).

Ownership Concentration: LaPorta, Lopez-de-Silanes, & Shleifer (1999) have reported that a high proportion of shares holding in the primary market can indicate a high quality of firm offerings. The empirical evidence on the ownership to IPO performance is not clear. Connelly, Limpaphayom, and Siraprapasiri (2004), Zheng, Ogden and Jen (2005), and Mayur and Kumar (2009) have found short-run IPO underpricing is positively associated with the degree of ownership concentration, while Venkatesh and Neupane (2005) and Yeh, Shu, & Guo (2008) identified an opposite relationship. Kim, Kitsabunnarat, & Nofsinger (2004) and Wang (2005) have found a curvilinear association.

Pricing Procedure: Book building method is investigated in this study since most of IPO companies in Thailand conduct book building during the pricing process to gather investor demand, especially from institutional investors. Benveniste & Spindt (1989), Cornelli & Goldreich (2001) and Chahine (2007) state that book building allows underwriters to set the IPO price more precisely and decrease underpricing.

IPO Allocation: The existing literature on the IPO allocation to performance is not conclusive. Underwriters use the information from informed investors to determine the offering price and its allocation. This private information is compensated in the form of initial returns. The more the private information received, the greater the underpricing the informed investors should earn. (Benveniste & Spindt, 1989; Hanley & Wilhelm, 1995; Aggarwal, Prabhala, & Puri, 2002; Jenkinson & Jones, 2007). On the contrary, Habib & Ljungqvist (2001) and Ljungqvist & Wilhelm (2002) have found a negative relation.

Lock-Up Period: The lockup agreement can potentially protect investors in the negative reaction of stock price and the chance of underperformance in long-run (Mohan & Chen, 2001). Brav & Gompers (2003) have found a positive relationship between underpricing and lockup length.

Investor Interest: Based on the investor attention model (Merton, 1987), media coverage can lastingly affect the stock valuation. It draws investors more attention to the stocks when they are familiar with them. Several papers have documented the empirical investigation of the positive relation between investor interest and the underpricing (Reese, 1998; Cook, Kieshnick, & Van Ness, 2006; Chahine, 2007; Liu, Sherman, & Zhang, 2009; Da, Engelberg, & Gao, 2009).

HYPOTHESES

The low-risk firms would reveal their strong information to the market through prestigious underwriters. The uncertainty of stock price on IPO stocks would reduce as the asymmetric information decline, thus the closing price on the first trading day could be priced closer to the market price resulting lower underpricing (Betty & Ritter, 1986; Johnson & Miller, 1988; Carter & Manaster, 1990; Carter et al., 1998). On the basis of asymmetric information theory, the first hypothesis states:

> H1: The more prestigious the underwriter, the significantly lower the level of underpricing

Ownership of companies in Thailand is highly concentrated (Connelly et al, 2004). When the proportion of ownership is large, information asymmetry will increase and monitoring control will decrease. The performance of an IPO firm will become lower.

Investors are not willing to pay more for the IPO shares, leading to lower underpricing. Accordingly,

> H2: The higher the ownership concentration after an IPO, the significantly lower the level of underpricing

When book building is conducted during pricing, underwriters can obtain information on investors' demand for shares. They can set the offer price closely to their demand, leading to lower initial return on the first trading day (Benveniste & Spindt, 1989; Benveniste & Wilhelm, 1990; Cornelli & Goldreich, 2001. The third hypothesis states:

> H3: Firm that conducts book building when pricing has significantly lower level of underpricing

Institutional investors as informed investor reveal their information during book building. In return, underwriter would distribute more portions of IPO to institutional investors. They get more shares and more initial returns than small investors do (Hanley & Wilhelm; 1995, Aggarwal, 2002; Binay, Gatchev, & Pirinsky, 2007). On this basis, the fourth hypothesis states:

> H4: The greater the allocation of IPO to institutional investors, the significantly higher the level of underpricing

The lock up period can be used to signal the quality of offerings. It is a commitment tool to reduce moral hazard problem. Based on asymmetric information theory, the fifth hypothesis states:

> H5: The greater the length of lock up provision, the significantly higher the level of underpricing

The number of newspaper citation is used as a proxy for the level of investor interest. Whenever the citation is shown on the well-know newspaper, it indicates either that there is sufficient general interest in that company, or the company is doing something remarkable and its citation is probably draw investor interest. In contrast, if a firm is not often cited in any newspaper, it may be little interest in that company among investors (Reese, 1998).

> H6: The greater the investor interest, the significantly higher the level of underpricing

Private information gained during the IPO process includes the underwriter reputation, ownership concentration, pricing procedure, IPO allocation, and length of the lock up period. When underwriters acquire private information provided by informed investors, this private information is compensated in the form of initial returns. Hence, the greater the private information received, the higher the underpricing investors should earn. The seventh hypothesis is assumed:

> H7: The greater the private information gained during the IPO process, the significantly higher the level of underpricing.

RESEARCH DESIGN

Data on the six major elements and short-runn IPO performance are extracted from the secondary data source. They include database of the SET, the SEC, Country Group Securities Research Department, FinansiaSyrus Securities Research Department, NewsCenter and company prospectus.

Sample

The sample comprises 152 IPOs listed on the SET during January 2001 to August 2011, representing almost the whole population of IPOs on the SET during the period of study.

Measurement

Control Variables. The size of IPO offering and the age of IPO firms are used as control variables. The size of IPO offering is defined in terms of gross proceeds, which are the total number of offered shares sold multiplied by the offer price (Ma, 2007). It is measured by taking the natural logarithm of average gross proceeds of an underwriter's

issue. Company age is measured as the number of years from company incorporation to the IPO offering (Ma, 2007). It is calculated by taking the natural logarithm of one plus the number of years since the IPO company started to operate before going public.

Dependent variable. The dependent variable is the short run performance of IPO measured by the return on the first trading day of the IPO. As suggested by Ritter (1991), Jelic et al. (2001), and Loughran and Ritter (2002), the market adjusted initial return of company is used to measure the short run performance in this study. It is defined as an abnormal return which is the initial return after adjusting for the benchmark return (conventionally the market index return is used). It is measured by the percentage difference between the return of company and the market return.

Independent variables. Two major components; private information and public information, selected in this study are used as the independent variables. The first component of information gained during the IPO process includes the underwriter reputation, ownership concentration, pricing procedure, IPO allocation, and the length of the lock up period. The second component of information derived after the IPO process until the first trading day is investor interest.

a) *Underwriter Reputation:* It is measured by the market share for each underwriter, adapted from the study of Megginson and Weiss (1991). The market share is calculated by the market volume of IPO offerings for each underwriter divided by the total volume of new issues in that year. In this study, underwriter reputation is measured by the lead underwriter's average market share during the three years prior to the IPO.

b) *Ownership Concentration:* The criterion on it for this paper is the sum of the retention of ownership at 5% level or more. In addition, the shareholders related to the major shareholders as reported in the prospectus are also included.

c) *Book Building Pricing Procedure:* The offering price is established depending upon the investor demand during the road show. It is announced in the IPO prospectus.

d) *IPO Allocation:* It is measured by the proportion of shares allocated to institutional investors relative to all share allocations. It is announced in the IPO selling report submitted to the SEC.

e) *Length of Lock-up Period:* In this study, the length of the silent period is used instead of the length of the lockup period. The difference between the lockup and silent period is that the lock up provision is an agreement between issuers and underwriters whereas the silent period provision is required by the market regulator (the SET) for a specified period of time to prevent sales of new equity issues from inside investors. The length of the silent period is measured by the time to the expiration date of the silent period which is reported to the SEC. It is calculated by the natural logarithm of the length of the silent period (Tirapat, 2004).

f) *Investor Interest:* The number of newspaper citations is counted between the period of of-fering date and the first trading day. It is calculated by the natural logarithm of the number of newspaper citations (Reese, 1998).

Statistical Technique for Data Analysis

The cross-sectional data are collected to investigate the relationship between six major factors and IPO performance on the first trading day. The first model is used to examine the relationship between six key factors and the initial returns of IPO. The second model is used to standardize the variables in order to compare among six major factors on the initial returns.

The first regression model is:

$$MAIR_i = \beta_0 + \beta_1 UR_i + \beta_2 OWN_i + \beta_3 BB_i + \beta_4 INS_i + \beta_5 LOCK_i + \beta_6 II_i + \beta_7 SIZE_i + \beta_8 AGE_i + U_i \qquad (1)$$

The second regression model is:

$$MAIR^*_i = \alpha_0 + \alpha_1 UR^*_i + \alpha_2 OWN^*_i + \alpha_3 BB^*_i + \alpha_4 INS^*_i + \alpha_5 LOCK^*_i + \alpha_6 II^*_i + \alpha_7 SIZE^*_i + \alpha_8 AGE^*_i + \mu_i \qquad (2)$$

where

$MAIR_i$ = The market index adjusted initial return of company "i" (%)

UR_i = Underwriter reputation; market

share of lead underwriter in the prior year to IPO (%)

OWN_i = Ownership concentration (%)

BB_i = A dummy variable that equals 1 when IPO uses the book building pricing procedure and 0 is otherwise.

INS_i = IPO shares allocated to institutional investors (%)

$LOCK_i$ = The length of the silent period (days)

II_i = Investor interest; the number of newspaper citations

$SIZE_i$ = Gross proceeds (million baht)

AGE_i = Age of company from establishing year to IPO offering (years)

β, α = Unknown parameters to be estimated

* = Standardized variables

μ_i = The residual term

DATA AND REGRESSION ANALYSIS

The results indicate that most IPO companies in Thailand are underwritten by non-prestigious underwriters. They have highly concentrated ownership after IPO. IPO shares are mostly allocated to the retail investors. Most IPOs experience a high length of lock up period and have a low degree of investor interest. Almost half of the total IPOs conduct book building. The regression result shows that only ownership concentration, IPO allocation to institutional investors, and investor interest are the key determinants of underpricing in Thailand (Table 2). Among these three elements, IPO allocation appears to be the strongest factor explaining the level of underpricing. The remaining major elements: underwriter reputation, book building and the length of the lock up period are not statistically significant. These elements cannot significantly explain the short run performance of IPOs.

Table 2: Cross-sectional Regression Analysis

Coefficient	Model 1	Model 2[a]
Intercept	-0.1365 (-0.3618)	
Underwriter reputation	-0.2573 (-0.6740)	-0.0606 (-0.6763)
Ownership concentration	**-0.4735 (-1.8072)***	**-0.1439 (-1.8135)***
Book building	0.0027 (0.0407)	0.0038 (0.0408)
IPO allocation to institutional investors	**-0.5031 (-2.8680)***	**-0.2855 (-2.8780)***
Length of lock up period	0.0520 (1.2053)	0.0943 (1.2095)
Investor interest	**-0.0579 (-1.6158)***	**-0.1327 (-1.6215)***
Size	**0.0931 (4.3687)***	**0.3951 (4.3839)***
Age	-0.0176 (-0.3868)	-0.0312 (-0.3881)
R^2	0.1712	0.1712
Adjusted R^2	0.1248	0.1309
F-statistic	3.6918	
Probability (F-statistics)	0.0006***	
Wald-test (F-statistic)	3.1573	
Probability (F-statistic: Wald-test)	0.0098***	
Observations	152	152

Notes: [a]Model 2 is identical to Model 1, but standardized regression coefficients are used.
The t-statistics are reported under the coefficients in parentheses.
White's (1980) heteroscedastciity consistent standard errors and covariances is applied.
A significance of the 1%, 5%, and 10% levels are denoted with ***, ** and *, respectively.

IMPLICATIONS AND RECOMMENDATIONS

For investors, when making an investment decision on IPO shares, investors should consider IPO companies that have low ownership retention (less than 67%). The majority of IPO shares should be allocated to retail investors rather than institutional investors. Assessment on the IPO shares should be based on the information gained during the IPO process, namely private information, obtained mainly from the company's prospectus. Investors should be cautious when absorbing IPO information from the newspaper since higher numbers of newspaper citations can reduce the stock price on the first trading day.

Recommendations for the issuers are about the improvement of IPO process management. Issuers should reduce their ownership interest in the companies to less than 67%. They should use underwriters who have good relations with retail investors. These investors are the major and regular subscribers of the IPO issues, which can guarantee the success of raising the targeted amount of funds from the market. Lastly, issuers should better communicate their company's value to investors during the IPO process through either the company's prospectus or press release than spend money on media after the IPO process. They should use media such as newspapers for investor relations purposes only. It is not advisable for the IPO companies to use media to manipulate the share price. Issuers should be careful when spending on media since investors perhaps perceive that such spending is used to avert a company's negative prospects (Panu & Peng, 2007).

Underwriters should consider the share allocation as the most important factor for a successful IPO and use their discretion for share allocation to retail investors, especially for the investors who have traded regularly and pay full services of trading commission. Regular investors can assist underwriters as insurance by standing ready to support prices and absorb future issues (Binay et al., 2007). By taking care of their existing investors as minority shareholders in IPO allocation, underwriters can reduce their marketing expenses based on a lower level of marketing effort. In return, underwriters can also provide underpriced IPO as quid pro quo to their existing investors for producing information on a regular basis and for facilitating the pricing and distribution of IPOs (Binay et al., 2007). Underwriters can improve their reputation, build a good relationship between underwriters and investors, and increase the possibility of participation in future offerings.

Furthermore, underwriters should convince issuers to disperse more portions of their ownership to the public because lower ownership retention can increase the initial return of IPO. Finally, for IPO pricing, underwriters do not have to spend more money conducting book building when the size of offering is relative low because there is no difference found between the two pricing procedures: book building and fixed pricing. Neither book building nor fixed pricing influences the initial return of IPO.

Lastly, since the ranking of underwriter reputation has not been officially established in the Thai market, underwriters are recommended to cooperate with the market regulator in setting up an internationally accepted institution to assign such a ranking to underwriters. The rating should be reported in the company's prospectus and widely used as a benchmark to represent the underwriter reputation in the Thai market.

For market regulators, several recommendations are provided. Regulators should recognize that the average size of offering in Thailand is relatively small. It can hinder several factors affecting a successful IPO such as participation from the institutional investor and the benefits of book building pricing. Regulators should encourage the company owners to disperse more portions of their ownership to the public. Punishment for the manipulation of share allocation and share price should be fully enforceable. The merits of privatization should be reiterated to encourage more state owned enterprise going public. If firms or state owned enterprises offer larger proportions of equity, the offering size would then be sufficiently large to induce more participation from institutional investors. Book building would be worth conducting in order to gather demand from the informed investors. The offering price and allocation of shares will better reflect the demand and supply in the market.

With those recommendations, there will be more

successful IPOs in the market and the numbers of companies going public will be higher (Lowry & Schwert, 2002). A better economy will be achieved. As suggested by Yung et al. (2008), the growth of the economy is related to an increase in the number of firms going public.

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