UNDERWRITER'S ATTRIBUTES AND THEIR RELATIONSHIP WITH IPO UNDERPRICING

MOHAMMED ABDULLAH EZZI AMMER

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MOHAMMED ABDULLAH EZZI AMMER

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803923

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ABSTRACT

Underwriting banks play a vital role in doing a successful initial public offering (IPO), which is considered as an important source of finance for Malaysian companies. This study aims to provide some evidence on the attributes of underwriters that affect the level of underpricing in IPOs in Malaysia. This evidence is on the application of IPO theories that are based on the information asymmetry between the IPO parties, issuing companies, underwriters, and investors. A total of 113 Malaysian IPOs listed from 29 June, 2006 until 24 February, 2011 were included in this study. For achieving the purpose of this study the OLS multiple regression technique was applied. In the multiple regressions, underpricing is used as the dependent variable and underwriter's reputation and spread as the independent variables while leverage, age, offer size, and company size were used as the control variables. The findings show that there is a negative significant relationship between reputation and underpricing. Also, the findings show that underwriter's spread has a positive significant association with underpricing. Besides that, the findings show the relationship between the control variables (leverage, age, offer size, and company size) and the dependent variable. One of these four control variables, leverage, has a positive significant relationship with IPO underpricing while the rest of these variables (age, offer size, and company size) have an insignificant negative relationship with IPO underpricing.

Overall, evidence in this study supports the consensus of the existing international evidence that IPO underpricing increases or decreases following underwriting banks' attributes. These findings have implications for issuing companies, investors, and security analysts.

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LIST OF ACRONYMS

AGE	Company age
ASE	Athens Stock Exchange
CIC	Capital Issues Committee
I0	Set Index of KLCI on the day of offering
I1	Set Index of KLCI at the end of the first day of trading
IPO	Initial public offering
IR	Initial return
KLCI	Malaysian weighted index
KLSEB	Kuala Lumpur Stock Exchange Berhad
LEV	Leverage
MAIR	Market Adjusted Initial Return
MESDAQ	Malaysian Exchange of Securities Dealing and Quotation Berhad
MR	Market return
NASDAQ	National Association of Securities Dealers Automated Quotations
OLS	Ordinary least squares
OS	Offer size
P 1	Closing pricing (market price) at the end of the first day of trading
REPU	Reputation
SC	Securities Commission Malaysia
SEOs	Seasoned equity offerings
SES	Singapore Stock Exchange
SIZE	Company size
SIZE	Company size
UK	United Kingdom

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In general, initial public offerings (IPOs) are underpriced (Cheung, Ouyang, and Tan, 2009). The underpricing of IPOs is an endless global phenomenon that has been a subject of academic and practical examination for many years. Underpricing is known as the percent of difference between the price at which the IPO securities were sold to investors (the offer price) and the price at which the securities were later traded in the market (Ljungqvist, 2007). Underpricing occurs when the basic market price of newly registered equity goes beyond the issue price (Wang, 2005). IPO underpricing was initially reported by Stoll and Curley (1970), Logue (1973), Reilly (1973), and Ibbotson (1975). Short-run underpricing of IPOs has been documented by Loughran, Ritter and Rydgvist (1994) in 25 countries in spite of the fact that the extent of underpricing varies. The phenomenon of IPOs underpricing have also been examined globally together in developing and developed stock markets.

In fact, Asian markets are not exempt from becoming affected by the phenomenon of underpricing (Yong, 2007). For example, IPO underpricing in China is reported to be high (Su and Fleisher, 1999). According to Dawson (1987), Yong (1991), Kim, Krinsky, and Lee (1995), and How, Jelic, Saadouni, and Verhoeven (2007), Malaysia has been documented as having extensive IPO underpricing. IPO underpricing exists and remains in

Malaysia with the recognized fact that the market has just regained its health from the 1997 Asian financial crisis and has been submitted to pricing deregulations (Saadouni, How, and Jelic , 2005; Wan-Hussin, 2006). In his study on the Malaysian, Singaporean and Hong Kong markets, Dawson (1987) examined the long- and short-run performance of IPOs. While the average level of underpricing in Hong Kong and Singapore was 39.4% and 13.8%, respectively, the Malaysian IPOs market indicated the highest excessive case of underpricing at 166.6%.

As the company decides to go public for the first time, it needs to hire underwriting banks and auditors to conduct the offerings in addition to declaring the information in the prospectuses.[1] The choice of the managing underwriting banks with good attributes is the toughest task in becoming public and for completion of a successful IPO. Even between the best underwriters, there might be much dissimilarity in the capability of the managing underwriting bank to market the company's stocks effectively and provide aftermarket support. Generally, seeking for underwriting banks is both costly and takes a long time for companies wanting to go public (Megginson and Weiss, 1991).

One important question is, why do underwriters underprice IPOs? Are there specific kinds of underwriting banks or identified features of offerings that are further (or slighter) probable to be connected with the level of underpricing? Interpretations for the underpricing issue depend on the opposed choice results of information asymmetry (Wang, 2005). Baron (1982) suggested a model that is built on the proposition that the underwriter

[1] Underwriter and underwriting bank are used interchangeably throughout this thesis.

has considerably better information than the issuing companies regarding the request for the company's stocks. Actually, it is difficult for the issuing company to control the underwriters without suffering some costs. Therefore, it is better to select an underwriter with good attributes, or to allow some underpricing. Even if the underwriting banks themselves go public, they will face the underpricing, although there are no observation problems (Muscarella and Vetsuypens, 1990).

Underwriters with attributes such as good reputation, quality research coverage, and low underwriting spreads provide confidence for the issuing company about the market. Particularly, the underwriting bank takes part in two kinds of actions in IPOs: a distribution action and an underwriting action. To achieve the first action it works as a financial intermediary by marketing and timing the issuances. Regarding the underwriting function the underwriter gives a warranty to the issuing company versus the risk of changes in the price of the offered stocks of the company in the market. Therefore, underwriters engage in important crucial parts in the IPO process, especially between new companies that do not have much financial information (Wang, 2005).

An underwriter's ability to carry out its financial intermediary role depends on its reputation with issuing companies and investors (Carter and Manaster, 1990). The fundamental for this result is the thought that reputable underwriting banks put their reputation at stake with issues and will attempt to escape from riskier issuing companies. Thus, offerings that are underwritten by reputable underwriters get a special status between investors, which means lesser underpricing and higher proceeds (Booth and Chua, 1996).

The objectives of this study are to determine the level to which Malaysian IPOs are underpriced. If the Malaysian IPOs securities are really underpriced, the study attempts to identify if this can be attributed to the attributes of underwriting banks. This study expands across the realm of IPOs and underwriters and attempts to investigate the relationship between underpricing of IPOs and underwriters' reputation and spreads. Thus, the study might help in resolving the uncertainties that will lead to reductions in the underpricing of IPOs.

1.2 Background of the Malaysian IPO Market

The Malaysian society is unique because of its different cultural communities. The IPO in Malaysia has played a vital role in reallocating the wealth between ethnic groups, which was unequal due to the remnants of colonialism. After Malaysian independence in 1957, IPOs began to evolve in the Malaysian capital market (Ahmad Zaluki, 2005).

According to Chong and Puah (2009), the Malaysian securities market was initially founded as the Malaysian Stock Exchange in1960 and existing as the Stock Exchange of Malaysia and Singapore up to the time of the construction of the Kuala Lumpur Stock Exchange Berhad (KLSEB) and Singapore Stock Exchange (SES) in 1973. Now the KLSEB is well-known as Bursa Malaysia since the demutualization action in 2004. It was followed by registering on the Main Board on 18 March, 2005. The Main Board, the Second Board and the Malaysian Exchange of Securities Dealing and Quotation Berhad (MESDAQ) are the components of Bursa Malaysia. While the big financed companies are listed on the Main Board, which is the funding and investing avenue for bigger capitalized companies, the smaller companies will attempt to be listed on the

Second Board. MESDAQ supplies the primary tools of high growth and technology-associated companies in Malaysia to raise capital. MESDAQ was engaged to Bursa Malaysia on 18 March, 2002.

The Malaysian weighted index KLCI, which is an abbreviation for the words Kuala Lumpur Stock Exchange Composite Index, is used as a signal of the performance of the Malaysian stock market. Bursa Malaysia is still considered as one of the developing markets when it is compared to other capital markets around the world. In spite of that, the development of Bursa Malaysia has been magnificent since its establishment. The market valuation of Bursa Malaysia was assessed at RM43 billion in the 1980s and has expanded to about 1 trillion Ringgit in 2007. Bursa Malaysia faced two intense events in the 1990s, which were the super bull market from 1994 to 1996 and then followed by the financial crisis from 1997 to 1998. According to the information supplied by Bursa Malaysia Research and Data Centre (2007), singular retail merchants have regularly made up more than 85% of the market players over the 1991 to 2003 period. Compared to the singular retail merchants group, the institutional investors group has reported a slighter average at 2.05%. The remaining 6.47% of the market contributors includes 'Others'.

Like other securities markets around the world, the Malaysian IPOs market improves from time to time. The number of listed companies has expanded from a mere 262 companies in 1973 to 1028 companies in 2007. This quick increase in the number of new listings referred to many causes, primarily to increase financing for extensions, to decrease the cost of new funds and to decrease the level of leverage (Shamsher, Nassir, and Ariff, 1994).

Various unique attributes deserve to be mentioned concerning the construction of the new issues market in Malaysia (Rahim and Yong, 2010). One of these attributes is the pricing mechanism, which is controlled by the Securities Commission (the regulator of Malaysian shares market since 1993) rather than by the market. Before the pricing mechanism was liberalized in January 1996, the Capital Issues Committee (CIC) had, since 1988, been imposing pricing constraints, whereby issuing companies must set the offer prices within a specific scope of the intended price to the earnings ratio. The elimination of this pricing constraint is a trial to enhance the transparency and effectiveness of the Malaysian securities market (Saadouni et al., 2005; Wan-Hussin, 2006). According to the new construction, issuing companies and consultants are given complete obligations for framing the price. Besides to the pricing method, IPO offerings are also required to submit to a broad process that requires searching for listing approval from the Ministry of International Trade and Industry and the Foreign Investment Committee in addition to the SC (Paudyal, Saadouni, and Briston, 1998). Another unique characteristic is the portion of IPOs allotted to Bumiputera investors (Malaysian indigenes), where companies are required to certify that these investors have at least a 33 percent ownership in the company (How et al., 2007; Paudyal et al., 1998).

There are also conditions for controlling shareholders and the consultants of the IPO issuers to give a profit warranty of not smaller than 90 percent of the prediction profit announced in the prospectus and 90 percent maintainable profits for two sequential years after listing. As well, for all issuing companies of the Second Board and the Main Board whose essential trade is in either construction or property development, the SC requires a one-year moratorium period averting major shareholders from selling, transferring, or assigning 45 percent of nominal issued and paid-up capital (Paudyal et al.,

1998; Wan-Hussin, 2006). These stipulations are required to secure the small group of shareholders by certifying forceful involvement of the controlling and major shareholders in the management of the company throughout the lock-up period.

1.3 Problem statement

The underpricing of new offerings by Malaysian listed companies is one of the highest levels in the South East Asia countries (Abdullah and Taufil, 2004). Ismail, Abidin and Zainudin (1993) documented that the level of underpricing was as intense as 166.7 % for the period 1978 to 1983 and 114.6 % for the period 1980 to 1989. A study by Yong and Isa (2001) reveals an average underpricing of 94.91% for all new issues listed between January 1990 to December 1998 on the Main Board and Second Board of the Kuala Lumpur Stock Exchange.

Ritter (1998) showed that the average initial return of new listings in 33 countries ranked from 13.6 percent to 388 percent in the emerging countries and 4.2% to 54.4% in the advanced countries. Regarding the underpricing of new listings on Bursa Malaysia, it was rated amongst the highest five in the list. This result indicates that the average level of underpricing is higher in developing markets than developed markets.

Nevertheless, there is no great consensus on what might interpret the phenomenon of underpricing. There are some models that refer to underpricing as the information asymmetry between issuing companies and investors (Rock, 1986), while other models argue that underpricing is a means to signal the quality of the offer (Leland and Pyle, 1977). Moreover, underpricing has also been considered as tool to decrease

legitimate obligations (Tinic, 1988), and decrease selling costs (Habib and Ljungqvist, 2001).

Even though underpricing is a common event in most companies' offerings (Loughran et al. 1994), there are no theories or elements that can absolutely illustrate the causes behind the underpricing. Obviously, underpricing is expensive for a company's shareholders: securities sold for the personal account are sold at too low a price, while the price of securities reserved after the IPO is diluted.

According to Sharma and Seraphim (2010), IPO issue procedure needs the active connection of three participants: the issuer, an underwriting bank or group of underwriting banks (for underwriting & marketing the IPO), and the investors (institutional & non-institutional) aiming to buy securities. While the investors like to buy the securities at a lower value, the issuer wants to get the highest value for these securities. Underwriting banks work as intermediary aids in harmonising the adverse assumption of both the investors and issuers. In addition, underwriters carry out different other roles like declaring the economic rationale of the offering to regulatory organizations, deciding the offer price, allotting stocks to investors, and other particular responsibilities. Thus, specific attributes for these underwriting banks may influence the level of underpricing of IPOs. As mediators among the issuers and the investors, underwriters have to work in balance, so that the goals of both participants are satisfied in making the IPO a success. Consequently, the correct choice of underwriters is a challenge for the issuing company. In fact, offer price considers the fundamentals of the company in a more logical method if a reputable underwriter with a high quality of research coverage is associated with the IPO issue.

When underwriters invest in reputation, this reputation ought to decrease the uncertainty of information and accordingly, the underpricing, since the underwriter's reputation is on the line. The practical evidence appears to propose that underwriting banks with a better reputation tend to diminish the initial underpricing (Carter and Manaster, 1990).

Baron (1982) adopted a theory that the underwriting bank is better informed about the demand environment than the issuing company, which leads to a principal-agent problem in which underpricing is used to affect the favourable marketing efforts. Jelic, Saadouni, and Briston (2001) expanded the sample period of the research by Paudyal et al. (1998) to contain IPOs listed in the Main Board since 1980 and investigate the function of underwriting bank reputation and earnings forecast in IPO prospectus on underpricing. They report that both underwriter reputation and the accuracy of earnings forecast do not impact IPO level of underpricing. Yet, market attitude previous to IPO and over subscription rates favourably influence the level of underpricing.

Moreover, underwriter spread is a significant variable in differentiating IPO quality and initial underpricing. Nevertheless, because an underwriting bank spread also represents an explicit approach of valuing risk, it has to be associated to initial underpricing (implicit pricing) of IPOs.

So, in such circumstance, the question of this study is, how do certain underwriters' attributes influence the level of underpricing of IPOs in Malaysia?

1.4 Research Questions

In general, this study seeks for an explanation on how underwriters' attributes affect the level of underpricing of IPOs in Malaysia. Specifically, the following research questions would be addressed in this study:

1. What is the relationship between underwriter reputation and IPO underpricing?
2. What is the relationship between underwriter spread and IPO underpricing?

1.5 Research Objectives

The general objective of this study is to gain useful insights on the effect of underwriter's attributes on the level of IPOs underpricing in Malaysia. Specifically, the study aims to achieve the following objectives:

1. To study the relationship between underwriter reputation and IPO underpricing.
2. To study the relationship between underwriter spread and IPO underpricing.

1.6 Significance of the Study

The primary focus of this study is to provide an empirical and theoretical basis to gain insights into the relationship between underwriting banks' attributes and IPO underpricing, as suggested by the literature. Such an insight may help the management of Malaysian listed companies to examine a wide variety of those attributes to evaluate the potential effect on their initial return (underpricing).

This project also provides a benefit to companies that are considering public offerings, since they need to evaluate the cost and benefit of selecting the underwriters with best attributes. Moreover, entrepreneurs considering public offerings should find this research of interest as they evaluate the costs and benefits associated with hiring good underwriters. The findings of this study can be used by companies on deciding the underwriting banks.

This study would also bear implications to researchers, academic community, and policy formulation regarding the influence of underwriter's attributes on IPO underpricing. In addition, this study may lead to the identification of new areas for further research regarding the relationships between underwriters and IPO underpricing.

1.7 Organization of the Study

The remainder of the study is divided into four chapters. The next chapter, Chapter 2, reviews the prior studies on the underwriters' attributes that influence IPO underpricing. Chapter 3 explains the research methodology, including the analysis process and the measurement of variables. Chapter 4 presents the empirical findings and results obtained from the analysis. Finally, Chapter 5 provides the discussion and implications of the study as well as suggestions and recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses and summarizes the prior studies on all variables under study. The review is divided into four sections. The first section presents the theories of IPO underpricing. The second section discusses prior studies about the phenomenon of IPO underpricing in general. The third section reviews a reasonable volume of findings of studies that have been carried out on the effect of each of the two attributes of underwriters, namely: (i) underwriter's reputation, and (ii) underwriter's spread, on IPO underpricing. The fourth section summarizes the chapter.

2.2 Theories of IPO underpricing

Researchers propose various theories that illustrate the phenomenon of IPO underpricing. The major underpricing theories are advanced based on information asymmetry between the IPO parties, issuing companies, underwriting bank, and investors. The three important models of winner's curse, signalling, and book-building have attracted the most attention.

2.2.1 The winner's curse

One of the hypothetical interpretations that have been proposed to interpret the underpricing of IPOs is the winner's curse theory. This theory was proposed by Rock (1986), and suggests that some investors are more informed than issuing companies and underwriting banks and are differentially informed between themselves, as well. Investors are more informed because they might know more about the attributes of a company's management, discount rate of this issuing company, or company's competitors. To encourage investors to subscribe for shares and consequently certify the offering accomplishment, it is optimum for the issuing companies to underprice their IPOs. Thus, the informed investors will only subscribe to offerings whose offer prices are under the estimated market prices. On the other hand, the uninformed will not participate in the IPO market if they persistently lose money. The issuing company, via prospectuses, reveals its financial expectations through the offer price. It was shown by Beatty and Ritter (1986) that a prestigious underwriting bank is required to guarantee that the suggested price must consider the company's expectations.

Rock further illustrates that while the underwriting bank is the best representative to price the issue, it might be less informed once it compared all investors' knowledge. Therefore, in such a circumstance the uninformed investors may have more information than the informed investors and underwriting banks. Consequently, the underwriting bank will offer a discount in order to stimulate these uninformed investors to be involved with the lesser prices as well as to certify that the issue is successful.

2.2.2 Signalling

In the signalling models advanced by Allen and Faulhaber (1989), Grinblatt and Hwang (1989) and Welch (1989), the issuing companies, as compared to investors and underwriting banks, are supposed to be well-informed about the future financial expectations such as cash flows of the company. Accordingly, high quality IPOs underprices the new offerings to signal their high quality regarding performance and cash flows to investors. In fact, this aids to differentiate the valued issuers from the non-valued issuers. Such a differentiation might allow the good issuing companies to sell for a higher price at the seasoned equity offerings (SEOs). This is because only good issuers are able to regain the initial loss from underpricing. Lam (1991), Keloharju (1993), Michaely and Shaw (1994), and Firth and Liau-Tan (1997) used data from several markets to investigate the signalling models. Their results show that the evidence from various practical studies are not consistent with the theory.

2.2.3 Book-building

In the prior theories, the role of the underwriting bank has been shown as passive intermediaries. On the other hand, book-building shows underwriting banks as marketing intermediaries, which identify the price on the basis of investors' interests. The book-building model of Benveniste and Spindt (1989) proposed that underwriting banks perform a primary task in deriving information about the indications of market for the IPO shares from the best knowledgeable investors. When this model is used, this information is collected before the issue price is finalized. Accordingly, the underwriting banks use this

information in order to identify a higher offer price for the offering. This model implies that when the informed investors have private information, their pre-market demand of interest on underpriced offerings will be higher. Hence, to encourage them to show their information, the underwriting banks allocate more shares in IPOs that have a higher pre-market demand. Moreover, as a compensation for these investors, it is probable that these shares have greater first-day returns. Benveniste and Spindt (1989) suggest that the book-building model can decrease the information asymmetry and consequently, reduce the underpricing. This model is advocated by Aggarwal, Prabhala and Puri (2002).

2.3 Prior studies on IPO underpricing in general

Many researchers have examined the initial return or underpricing of IPOs in various countries around the world (e.g., Dawson, 1987; Ritter, 1991; Aggarwal et. al., 1993; How et al., 2007). The results of these researches have supplied practical evidence confirming the presence of abnormal positive short-run returns between the new offerings. However, the level of this initial return changes substantially between markets and provides a lot of inconsistencies in the finance literature.

2.3.1 Underpricing of IPOs in Malaysia

On the Malaysian market, research on new offering's initial return or short-run performance have been done, and the practical findings are consistent with other research around the world. One of the earlier studies about IPO underpricing in Malaysia was

reported by Dawson (1987). By using 21 new offerings during the period from 1978 to 1983, he found that the average level of underpricing was 166.7 percent. Ismail et al. (1993) showed that by using 63 new offerings through 1980 to 1989, the average initial return remained at the high degree of 114.6%. Isa and Ahmad (1996) conducted a study on 126 IPOs during the period from 1980 to 1991. They found that the level of initial return is 76.8%, which is actually lesser than the results from prior studies. By using 95 IPOs through the period from January 1984 to September 1995, Paudyal et al. (1998) investigated the average for underpricing in Malaysian IPOs. Their findings showed that the overall level of initial return was 62%. In their investigation of the short-run performance of Malaysian IPOs, Jelic et al. (2001) used a sample of 182 IPOs during the period 1980 to 1995 and found that, on average, the initial return was about 99%, which was the highest in the beginning of the 1980s and throughout the 'hot issue' time from 1993 to 1995.

Yong and Isa (2001) examined 462 IPOs, as a construct of all new offerings listed on both the Main Board and the Second Board of the Kuala Lumpur Stock Exchange (KLSE) during the time from January 1990 to December 1998. They revealed that the average for underpricing throughout the period was 94.91%. By investigating 70 IPOs in the time from 1992 to 1998, Abdullah and Taufil (2004) indicated that the initial returns between the sample data throughout the period was nearly 78.44 percent.

Yeap (2006) examined a sample of 323 IPOs throughout the period from 2000 to 2005. He showed that the overall level of initial returns in Malaysia had fallen to 46.44%. Contrary to the Yeap (2006) study, How et al. (2007) investigated 322 IPOs listed only on the Second Board during 1989 to 2000 and found the underpricing was still as great as 102%.

Ahmad-Zaluki et al. (2007) examined a sample size of 454 IPOs throughout the time from 1990 to 2000. Their results showed that the mean raw initial return was 95.2%. Finally, studying a sample size of 386 IPOs offered between January 1999 and December 2007, Rahim and Yong (2010) revealed that over the period of the research, the underpricing of Malaysian IPOs sloped significantly from 94.91 %, recorded from the pre-crisis time of 1990-1998, to only 31.99 %. In fact, these results are more equivalent to the stated percentage of underpricing in advanced markets.

Table 2.1: Summary of IPO underpricing in Malaysia

Study	Period	Number of IPO Sample	Average underpricing (%)
Dawson (1987)	1978-1983	21	166.7
Ismail et al. (1993)	1980 to 1989	63	167.4
Isa and Ahmad (1996)	1980 to 1991	126	76.8
Paudyal et al. (1998)	1984 to 1995	95	62
Jelic et al. (2001)	1980 to1995	182	99
Yong and Isa (2001)	1990 to 1998	462	94.91
Abdullah and Taufil (2004)	1992 to 1998	70	78.44
Yeap, M (2006)	2000 to 2005	323	46.44
How et al. (2007)	1989 to 2000	322	102
Ahmad-Zaluki et al. (2007)	1990 to 2000	454	95.2
Rahim and Yong (2010)	1999 to 2007	386	31.99

2.3.2 Underpricing of IPOs in several countries

Internationally, nearly all researchers have shown mixed findings compared to the Malaysian findings.

There are many of the earliest research that investigated the short-run performance of IPOs on the US market. In his study, Ibbotson (1975) examined the existence of initial returns by studying a sample size of 120 new IPOs listed on the New York Stock Exchange during the 1960s. He indicated that the average of underpricing was about 11.4%. Buser and Chan (1987) documented positive initial returns around 11.2% in their study on 1,078 NASDAQ stocks during the period from 1981 to 1985.

In his study on a sample size of 1,526 IPOs throughout the period from 1975 to 1984, Ritter (1991) showed that the degree of underpricing was 14.06%. Furthermore, he indicated that there was a significant deviation in the underperformance from year-to-year and among industries. On the top of that, Ritter (1991) documented that the underperformance was intensive between newer companies and companies that went public in the heavy-volume years. In fact, IPOs that were not connected with venture capital financing, and IPOs that were not correlated with reputable underwriting banks, also tended to do particularly badly.

Aggarwal et al. (1993) found that, new offerings in Brazil, Chile and Mexico had a level of underpricing of 78.5%, 16.3%, and 33%, respectively. Regarding the Brazilian sample,

it contained 64 IPOs listed during the period from 1980 and 1990. The underpricing on the first day was 78.5%. Some investors completed 67% of their basic investment when they bought the offer at the closing price on the first day and kept the shares for three years. Regarding Chile, the sample size included 36 IPOs throughout the period from 1982 to 1990, involving 21 privatizations. The first-day initial return was 16.3%. In comparing this to Brazil, investors who bought the shares at the closing price rather than the offer price, completed their initial investment with 83% after three years. Regarding the privatizations, the level of underpricing was around 7.6%, but after three years, the investors who purchased the shares at the closing price on the first day completed their basic investment with 91%. Even though the Mexican findings are quite severe, they still followed the identical order. After studying 44 IPOs listed between 1987 and 1990, Aggarwal et al. (1993) found that the level of underpricing was 2.8%. Here, the investors who purchased the shares at the closing price of the first day completed 81% of their basic investment.

By using a sample size of 712 IPOs issued on the London Stock Exchange during the period 1980 to 1988, Levis (1993) reported an average initial return of 14.3%. His research also indicates that following the first day of trading, IPOs in the UK underperformed a number of related benchmarks throughout the 36 months of public listing. Furthermore, he showed that the significance of underperformance is further cleared up once an account is taken of the excellent performance of smaller companies throughout the time (1980-1988).

Kim, Krinsky, and Lee (1995) practically examined the IPOs of Korea. Their study used a sample size consisting of 169 IPOs issued between 1985 and 1989 via the Korean Stock Exchange. Findings from Kim et al. (1995) show that the Korean

IPOs performed better than seasoned companies with equivalent attributes, and they showed that the average underpricing was 57.56%. Kim et al. (1995) also documented that the great level of the first-day initial returns in Korea could help interpret the findings of their study.

Using a sample size of 189 IPOs from Germany's market throughout the period from 1970 to 1993, Ljungqvist (1997) showed that the level of initial returns on the first day was 10.9%. In his study on unseasoned new offerings on the New Zealand Stock Exchange, Firth (1997) investigated the performance of the equity market through the period from 1979 to 1987. He found that an initial return on the first day of trading was 26%. In the Japanese market, Cai and Wei (1997) investigated 180 IPOs listed on the Tokyo Security Exchange during the period 1971 to 1992. Their study concentrated on the return of long-run stocks and the operating performance of the selected sample. Their primary results indicate that the average underpricing was 49%. Hensler et al. (2000) studied a sample comprised of companies that traded through January 1987 to August 1993. The sample included 68 Mexican IPOs. The result of their study was about 18.52%. Kiymaz (2000) used a sample size of 163 IPOs listed and offered on the Istanbul Stock Exchange throughout the time 1990–1996. The findings show that the initial underpricing at the first day for the Turkish IPOs was 13.1%.

Rosa et al. (2003) examined 333 industrial IPOs on the Australian Stock Exchange during the period 1991 to 1999. They examined the initial underpricing and the long-run performance of venture capital-backed companies and compared this to the performance of non-venture capital-backed IPOs. Their results showed that the average underpricing was assessed at 25.47%. On the Canadian market, Kooli and Suret (2004) used a sample

including 445 IPOs between January 1991 and December 1998. In their study, they used accumulative abnormal returns as an abnormal performance measure. They indicated that the Canadian IPOs substantially underperformed the sample of seasoned companies with an identical market capitalization. The level of underpricing on the first day was 20.57%.

Table 2.2: Summary of IPO underpricing around the world

Study	Country	Period	Number of IPOs Sample	Average underpricing (%)
Ibbotson (1975)	US	1960s	120	11.4
Buser and Chan (1987)	US	1981 to 1985	1,078	11.2
Ritter (1991)	US	1975 to 1984	1,526	14,06
Aggarwal et al. (1993)	Mexico	1987 to 1990	44	2.8
Aggarwal et al. (1993)	Chile	1982 to 1990	36	16.3
Aggarwal et al. (1993)	Brazil	1980 to 1990	62	78.5
Levis (1993)	UK	1980 to 1989	712	14.3
Kim et al. (1995)	Korea	1985 to 1989	169	57.56
Cai and Wei (1997)	Germany	1970-1993	189	10.9
Firth (1997)	New Zealand	1979 to 1987	143	26
Ljungqvist (1997)	Japan	1971 to 1992	180	49
Hensler et al. (2000)	Mexico	1987 to 1993	68	18.52
Kiymaz (2000)	Turkey	1990 to 1996	163	13.1
Rosa et al. (2003)	Australia	1991 to 1999	333	25.47
Kooli and Suret (2004)	Canada	1991 to 1998	445	20.57

2.4 Prior studies on the attributes of underwriters and their relationship with IPO underpricing

2.4.1 Underwriter's reputation

Generally, previous studies (e.g., Carter, Dark and Singh, 1998; Bae and Levy, 1994; Lee et al. 1996) demonstrated that reputable underwriting banks raise the net IPO proceeds received by an issuing company. This means decreasing underpricing either directly by guaranteeing a stronger company value or indirectly by decreasing the needed level of initial returns for an investor contribution (Carter and Manaster, 1990).

Logue (1973) examined 250 IPOs during the period March 1965 to February 1969. He indicates indicated that the level of underpricing connected with reputable underwriters was 40%. He reports relevant differences in the mean initial rate of return among the offerings backed by reputable and non-reputable banks.

In order to protect its reputation, and by using information that is not available to the general public, the reputable underwriting banks check all the companies that wish to go public, then choose the one with the fewest risks. Alternatively, this decreases the information asymmetry and uncertain information among informed and uniformed investors. The investors understand that by buying the offerings of prestigious underwriters, they will face fewer risks and, accordingly, the level of underpricing will be

fewer for these offerings. Michaely and Shaw (1994) investigated 947 IPOs issued during the period 1984-1988. Their research indicated that more reputable underwriters underprice these IPOs fewer than less reputable underwriters.

Bae and Levy (1994) assumed that reputable underwriters handle the offerings with fewer underwriting fees. Consequently, they will concentrate on large size offerings with low risk. They reported that, regardless whether the issue is successful or unsuccessful, the non-reputable underwriters will not assume bearing the risk. In turn, they would shift the risk to the issuing company by underpricing the new offer significantly more than reputable underwriters would.

On the other hand, Beatty and Welch (1996) examined a sample size of 823 IPOs during the period 1992 to 1994. In fact, their study investigated how IPO underpricing and its uncertainty is associated with expert quality by studying IPOs that were underwritten by 50 underwriters during the period of their study. Beatty and Welch (1996) found that IPOs handled by more prestigious underwriting banks are related to fewer short-run underpricing.

Paudyal et al. (1998) examined 95 IPOs issued throughout the period January 1984 to September 1995. Contrary to the suggestions in the prior studies, the reputation of the underwriting banks had a relevant positive effect on the initial returns of other IPOs and Malaysian IPOs. They mentioned that the assumption of an opposite association between the reputation of underwriting bank and initial return is established on the

proposition that the reputable underwriting banks can promote the offer price closer to the equilibrium price and rely on their reputation in marketing the shares, as well as assuring the excellence of offering. Anyhow, given the institutional contracts it is probable that the underwriting banks in Malaysia have little function in framing the price. Nevertheless, the excellence of the offerings is still related to the reputation of underwriting banks. Consequently, the potential investors would probably pay a higher price for these issues in the market, resulting in a higher initial premium and therefore, a positive association.

Carter et al. (1998) examined the relations between underwriter reputation and the long-run performance of IPO stocks. They conducted tests of underwriter reputation measures using a sample of 2,292 IPOs issued from January 1, 1979 through December 31, 1991. Their findings show that companies that are associated with more reputable underwriters had a less affected underperformance of IPO stocks compared to the market during the three-year period than companies associated with low reputable underwriters. Moreover, they indicated that IPOs conducted by further prestigious underwriters are related with less short-run underpricing.

Lee and Yi (1996) explored the relation between the profitability and volatility of IPO companies and underwriter reputation. They investigated 1032 companies that made IPOs underwritten between 1987 and 1991. Their findings indicated that companies taken public by more reputable underwriters have higher post-IPO profitability and lower volatility when compared to those underwritten by less reputable underwriters.

On the Hong Kong IPO market, Kuan (2000) investigated the relationship between the reputation of underwriting banks and the level of initial return of the offerings. The sample of this study contained 273 IPOs in the Hong Kong market during the period 1993 to 1998. The primary results of this study were that reputable banks underprice their IPOs 8.40% further than the less reputable underwriting banks, on average. This is opposite to the results of several prior studies, but is not statistically substantial, and shows that the reputable banks of Hong Kong have many pricing ways that are different from underwriting banks in other markets. Furthermore, the level of risk of IPOs issued by reputable underwriting banks is not substantially distinct statistically from that of low reputable underwriting banks.

Habib and Ljungqvist (2001) investigated the relation between underwriter reputation and level of underpricing by using 1,376 NASDAQ IPOs during the period 1991 to 1995. Their results show that the underwriter's reputation and underpricing are negatively correlated. The essential statement behind their result is that issuing companies select the quality of certification endogenously. These issuing companies want to gain the most from selecting reputable underwriters in order to decrease the level of underpricing. Moreover, they show that the most speculative issuing companies select the highest reputable underwriting banks.

By using 182 Malaysian IPOs during the period January 1980 to December 1995, Jelic et al. (2001) found that issuing companies that are associated with highly prestigious underwriters have a higher market-adjusted initial return more than other companies associated with less prestigious underwriters. In addition, their findings do not support the

statement that issues underwritten by high reputable underwriting banks are better long-term investments compared to issues handled by less reputable underwriting banks.

Loughran and Ritter (2004) studied a sample containing 6,391 IPOs that had been issued throughout the period 1980 to 2003. They claimed that the level of IPO's underpricing adjusted over time. They also mentioned that, because of the Internet bubble years, the more reputable underwriters are related to a higher level of underpricing than in 1990 than 1980. In fact, due to the huge reputation capital, the investors do not require big discounts on these issues. On top of that, they indicated that the greater average of underpricing was correlated with reputable underwriting banks in the 1990s and the time of the Internet bubble is incompatible with the joint hypothesis that underwriting banks are trying to increase issuing companies, and this is considered as a significant determinant of the needed sum of money left on the table.

In another study on Malaysian market, Abdullah and Taufil (2004) examined 70 IPOs during the period 1992 to 1998. Their results indicated that high prestigious underwriters are related with favourable information about listed companies. Abdullah and Taufil (2004) also found a negative relationship between underwriting banks' reputation and level of underpricing. They show that high reputable underwriting banks would likely prevent the risk of linking itself with a low quality IPO. This is to certify that its high reputation is covered and affirmed between the market entrants. Actually, the issuing companies with a low quality IPO probably cannot employ a high quality underwriting banks in order to supply favourable information about their companies.

On the other hand, Kenourgios, Papathanasiou and Melas (2007) studied a sample consisting of 169 IPOs listed on the Athens Stock Exchange (ASE) during 1997-2002. They investigated the initial performance and two primary determinants of short-run underpricing of this sample. The findings of their analysis on the initial performance of the IPOs provide an indication of significant underpricing. Additionally, the cross-sectional analysis on the determinants of the IPOs indicates that the underwriters' reputation substantially influences the underpricing level of the IPOs. By using a sample size of 4,486 U.S. IPOs from 1993 to 2007, Liu and Ritter (2009) showed that IPOs underwritten by high quality underwriters are underpriced by about 5% more than other IPOs underwritten by low quality underwriters.

The paper of Travis and Mushfiq (2010) investigated the association between underwriter reputation and IPO initial returns over a 24-year period, throughout the period 1980 to 2003 by using a sample consisting of 6,320 IPOs. Their paper found that, as was found in previous studies, that underwriting bank reputation is significantly negatively associated to initial returns from 1980 to 1991 and significantly positively associated to initial returns from 1992 to 2003, where reputation was captured as an exogenous variable. Sharma and Seraphim (2010) studied 43 Indian IPOs during the period 2001-2005 to investigate the inverse relationship between underwriting banks' reputation and the level of initial return. The results of their study showed that Indian IPOs were substantially (46.3%) underpriced throughout the time of 2001-2002 to 2004-2005. The important concern is that average underpricing is less for offerings handled by high reputable underwriters compared to less reputable underwriters.

In conclusion, the majority of previous studies indicate that there is a negative relationship between reputation and underpricing. They argue that high reputable underwriting banks have valuable information about the offerings. Hence, these underwriters can reduce the information asymmetry, which in turn will lead to a reduc the level of underpricing.

2.4.2 Underwriters spread

In spite of the fact that several studies examined the elements that are responsible for the underpricing phenomenon, relatively few have concentrated on the factor of underwriter spread. While some researches investigated underwriter spread, some of it aims to connect underwriter spread to the level of underpricing of an IPO. These studies claim that underwriter spread ought to act in a more significant way in illustrating the IPO pricing puzzle if the spread variable takes into consideration the uncertainty regarding pricing of new offerings. Actually, they claimed that underwriter spread and underpricing are interrelated, and hence, jointly determined.

Chen and Mohan (2002) studied the underpricing puzzle by examining the underwriter spread and its association with the level of underpricing. In their study, they used a sample size of 806 IPOs throughout the period from January 1990 to December 1992. Their result shows that underwriter spread not just considers the underwriter's risk-bearing part, but it engages with the average underpricing of IPOs as well. Moreover, they indicated that underwriter spread is substantially and positively associated with IPO underpricing, but it is substantially and negatively associated with underwriting bank reputation and the issues' gross proceeds.

Ljungqvist and Wilhelm (2001) found that there is an inverse association between the gross spread and underpricing when the U.S. bank spread premium considers the assumption of higher quality service. Furthermore, they revealed that the study of Chen and Ritter (2000) report tests show nothing more than a low association among spreads and underpricing in their U.S. sample.

2.5 Summary

This chapter summarizes and presents mainly the literature of the variables under study. Firstly, it presented the concepts of underpricing theories. Secondly, it discussed the previous studies concerning underpricing in Malaysia and underpricing around the world. Lastly, the literature on the two independent variables was reviewed.

CHAPTER THREE

RESEARCH DESIGN AND METHODS

3.1 Introduction

A theoretical framework, upon which the study is based, is developed in order to answer the research question as the following: what is the relationship between underwriter's reputation and underwriter's spread with IPO underpricing? The first section of this chapter discusses the research framework, followed by hypotheses development, model specification, variables measurement, and data collection.

3.2 Research Framework

As highlighted in the literature review, there are many studies that suggest several attributes associated with underwriters that have an impact on the IPO average for underpricing. Underwriter's reputation and underwriter's spread are the common characteristics that have an effect on IPO underpricing.

The underwriters' attributes represent the independent variables, while the IPO underpricing (represented by initial return) represents the dependent variable. The following illustration depicts the research framework, including the independent, dependent, and controlled variables that are tested in this study.

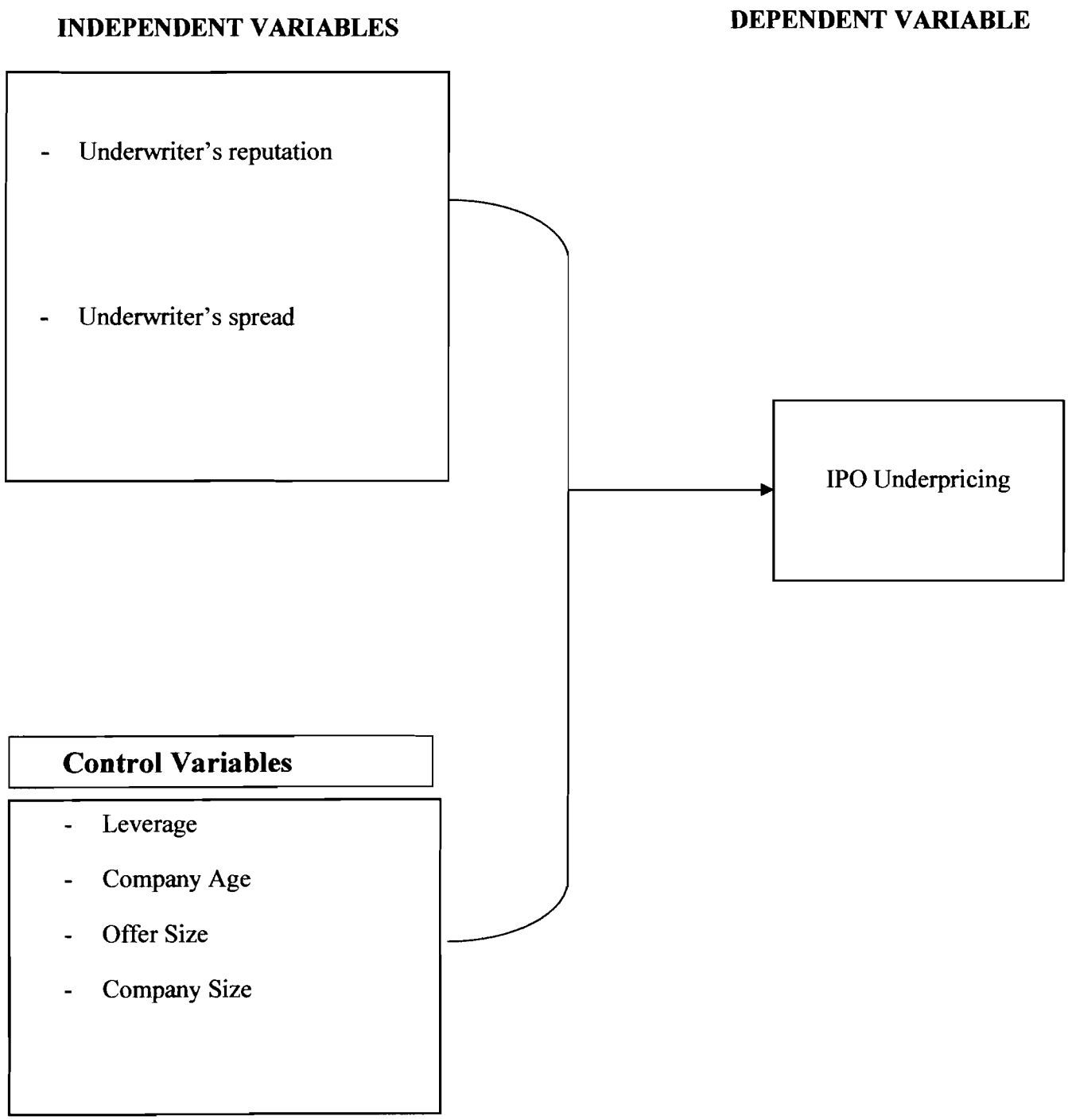

Figure 3.1: Research Framework

3.3 Hypotheses Development

3.3.1 Underwriter's reputation

Research on IPOs such as Beatty and Ritter (1986), Johnson and Miller (1988), Beatty and Welch (1996), Carter et al. (1998), and Paudyal et al. (1998) examined the relationship between underwriter reputation and underpricing. Beatty and Ritter (1986) indicated that the underwriter reputation is inversely associated to the level of initial underpricing of IPOs.

Conventionally, for reducing the degree of underpricing in IPOs, the reputable underwriting banks debated to assure the value of the company and lower investor's hesitation about the price of the issue by using their reputation capital (Booth and Smith, 1986; Beatty and Ritter, 1986; Carter and Manaster, 1990; and Chemmanur and Fulghieri, 1994). On the other hand, there is a positive relationship between underwriter reputation and underpricing, which according to Beatty and Welch (1996), and Loughran and Ritter (2004) implies changing the function of reputation on underpricing, or that issuers are concentrating less on underpricing due to the possible related selling advantages.

The question here is whether the issuers choose to reduce the underpricing via their selection of underwriting banks, or whether the renting of reputable underwriting banks results in more or less underpricing. Actually, the issuers select the underwriters by comparing the possible advantages and sacrifices of underpricing during their selection. For example, some issuing companies select high reputable underwriters to reduce the

level of underpricing, while some issuers select low-reputable underwriters and suffer more underpricing.

Wang (2005) theorized that the effect of underwriting bank reputation on the IPOs relies on whether the underwriting bank has successfully distinguished itself from competitors within the customer industries. Distinguished underwriting banks are connected to lesser IPO initial underpricing because their reputation aids in decreasing information asymmetry among issuing companies and investors. The reason for involving an underwriting bank reputation measure is that a mediator, such as an underwriter, has an entry to information that potential investors need. Thus, when a reputable underwriting bank takes a company public issue, it potentially sends a signal to outside investors that diminishes information asymmetries in the market (Boulton, Smart, and Zutter, 2010).

It is claimed that more reputable underwriting banks can decrease the information asymmetry, and thereby reduce the underpricing cost. Carter and Manaster(1990) and James and Wier (1990) and many other researchers examined the relationship between the underwriter's reputation and underpricing as the indication of adverse selection. Testable implications of the winner's curse model were essentially elicited from this relation between *ex ante* uncertainty and initial return.

High reputation underwriting banks should be more informed in assessing the issues, so that they should be correlated with fewer underpricings than low reputable underwriters (Liu, 2007).

Choice of a high characteristic underwriter will decrease the high agency costs practiced by IPO issuing companies. Instead, the selection of a high quality underwriter might be observed as a signalling tool where high quality underwriting banks will be chosen by companies with much preferred information (Titman and Trueman, 1986).

Hypothesis 1: Underwriters reputation is hypothesized to be negatively related with IPO underpricing.

3.3.2 Underwriters spread

Underwriter spread should act in a more significant way in illustrating the IPO pricing puzzle if the spread variable considers uncertainty about pricing of new offerings. In practice, we argue that underwriter spread and underpricing are related to each other, and thus together determined. Underwriter spread may be restricted by competition or regulations such that various ranges of underpricing are necessary in order to take up the full cost of risk bearing (Chen and Mohan, 2002).

It is likely that, because of the regulations, a specific level of spread has to be supported by a huge initial underpricing to offset underwriting very risky IPOs. Therefore, initial underpricing and underwriter spread are complements and the association between them relies on the issuers' attributes and negotiation power, level of competition in the underwriting market, and the underwriter's pricing policies.

While underpricing is significantly and negatively associated with underwriter reputation and gross proceeds of the offering, it is significantly and positively related with the underwriter spread (Chen and Mohan, 2002).

Hypothesis 3: Underwriters spread is hypothesized to be positively related with IPO underpricing.

Table 3.1:

Independent variables and their expected signs

Independent Variable	Expected Sign
Underwriters reputation (REPU)	-
Underwriters spread (SPREAD)	+

Note. "+" means that underpricing increases with the variable, and "-" means that undepricing decreases with the variable.

3.4 Model Specification and Analysis

Multiple regression analysis is the technique that is used in this study to find the relationship between the dependent variable (IPOs underpricing as represented by the initial return) and each one of the independent variable (underwriters reputation, and underwriters spread) and controlled variables (leverage, company age, offer size, and company size).

The following multiple regression model is used:

$$\mathbf{UNDERPRICING = \alpha + \beta_1 REPU + \beta_2 SPREAD + \beta_3 LEV + \beta_4 AGE + \beta_5 OS + \beta_6 SIZE + \varepsilon}$$

Where:

UNDERPRICING= Level of underpricing as represented by initial return.

α = Constant

REPU= Underwriters reputation.

SPREAD= Underwriters spread.

LEV= Leverage.

AGE= Company age.

OS= Offer size.

SIZE= Company size.

ε = Error terms.

$\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, $\beta 5$, and $\beta 6$ = the coefficients of the independent variables and controlled variable with the dependent variable.

3.5 Measurement of Variables

3.5.1 Dependent Variable

The underpricing is the return earned on the first day of listing on the stock exchange and is defined as follows:

Initial Return (IR) = (P_1 -P_0)/ P_0

Where:

IR= Initial return.

P 1 = Closing pricing (market price) at the end of the first day of trading, and

P 0 = IPO offer price on the prospectus date

For the purpose of the study, the market adjusted initial return was utilized, which is measured by modifying the market return to the underpricing. The market return is the return earned on the market portfolio over the same period as that of the underpricing and is defined as follows:

Market Return (MR) = (I_1 -I_0)/I_0

Where:

MR = Market return

I_1 = Set Index of Kuala Lumpur Composite Index (KLCI) at the end of the first day of trading

I_0 = Set Index of Kuala Lumpur Composite Index (KLCI) on the day of offering

The Market Adjusted Initial Return (MAIR) is the difference between the underpricing and market return and is defined as follows:

MAIR = IR – MR

This measurement is supported by many studies such as Yong (1996), Dawson (1999), Uddin (2008), and Sharma and Seraphim (2010).

3.5.2 Independent variables

3.5.2.1 Underwriters reputation (REPU)

This study includes market share as a refined measure of underwriter reputation. So, this study follows the Megginson and Weiss (1991) measure, where reputation is calculated as the ratio of the total Ringgit amount of IPOs brought to the market by the lead underwriter of a given IPO to the total Ringgit amount of all IPOs in the sample. If the issuing company has more than one lead underwriter indicated in the prospectus, the average of the lead underwriters' market share is used as the measure of reputation. This measurement is also supported by Wang (2005).

3.5.2.2 Underwriters spread (SPREAD)

As in Kidwell et al. (1984), Foster (1989), and Tufano (1989), the spread is the gross underwriting spread as a percentage of the offer price, which is the difference between the underwriting price obtained by the issuing company and the real price offered to the public.

3.5.3 Control variables

3.5.3.1 Leverage (LEV)

It is claimed that a high pre-IPO leverage ratio excites *ex ante* uncertainty about the financial power of the issuer, because debt financing for investment projects is not a feasible selection for imposing tougher budget restrictions on management, while a small pre-IPO leverage bears a good announcement to the market. Companies with a high level of leverage have more cash than other companies, which means this cash can be used in the future by these companies to engage underwriters with good attributes. This will then increase the level of confidence between the investors due to the decreasing of their *ex ante* uncertainty. Therefore, leverage is expected to be positively related with IPO underpricing.

This study measured leverage by total debt over total assets, which is the book value of the pre-IPO debt (short-term and long-term) divided by the book value of all assets (Kim, Pukthuanthong and Walker, 2008).

3.5.3.2 Company Age (AGE)

Age of the issuing company in terms of years, is one of the most favoured proxies on issuer's attributes. High grade underwriters mostly select issuing companies with a longer operational history. Age of the IPO company shows its level of maturity. Age of the issuing company is theorized to have an adverse effect on the level of initial underpricing following the IPO. In fact, newly-established companies, in contrast to older ones, show higher *ex ante* uncertainty. This is because less-seasoned issuing companies are less probable to have been pursued by financial analyst coverage as they do not have recorded issued financial information. Moreover, the accessibility of data on issuing companies operating for many years contributes to decrease the information asymmetry around the IPO (Ritter, 1984; Hensler, Rutherford, and Springer, 1997). This uncertainty about the future aspects of the applicant company will be considered in higher underpricing (Bilson, Heanry, and Shi, 2003).

In this study, age is measured by the difference between the date of establishment and the date at which the issuing company goes public. This measurement is supported by many studies such as Abdullah and Taufil (2004), and Sharma and Seraphim (2010).

3.5.3.3 Offer Size (OS)

The size of the IPO offer is assumed to be negatively associated to the level of underpricing. According to Miller and Reilly (1987), and Clarkson and Simunic (1994), the size of the issues shows the uncertainty about IPO companies. Larger IPOs are usually issued by issuing companies with various operating years and better records. This provides a contribution to decrease the perceived risk of the IPO from the side of possible investors (Carter et al., 1998; Jain and Kini, 2000). Carter and Manaster (1990) reported that, in addition to the uncertainty around the IPO, investors will take into consideration its size to rate the performance of IPOs. Generally, various reports document evidence for this adverse relation between the total of raised capital and the level of underpricing (Chalk and Peavy, 1987; Megginson & Weiss, 1991; Clarkson and Merkley, 1994).

According to Rahim and Yong (2010) offer size is measured by taking the natural logarithm of the number of offered shares multiplied by the offer price.

3.5.3.4 Company Size (SIZE)

The total assets of the issuing company before going public are usually used as the size variable in IPO research. The size variable is used to verify the probability that small issuing companies are more speculative than those of larger issuers. Greater issuers have a better opportunity for getting capital, have more varied kinds of products and are better controlled (Finkle, 1998). These elements lead to decrease the uncertainty surrounding the IPO of large issuers for potential investors (Kiymaz, 2000). Thus, the

issuers with a large size are estimated to have lower uncertainty than smaller issuers. In practice, various studies have documented a negative relationship between the company size and level of underpricing (Ibbotson, Sindelar, and Ritter, 1994; Carter et al., 1998).

This variable is measured as the natural logarithm of the total ringgit value of assets at the end of year prior to the year of going public (Kiymaz, 2000; Ahmad Zaluki and Wan Hussin, 2010).

3.6 Data Collection

3.6.1 Population

In this study, the population frame will include all the Malaysian IPO companies listed on Bursa Malaysia from the period of June 2006 to 24 February 2011. According to the Bursa Malaysia website, there are 113 companies that went public during the period. Therefore, the population frame of this study will be based on the data of all (113) listed companies.

3.6.2 Data

The data in companies' prospectuses during the period of June 2006 to 24 February 2011 are the required data for doing this study and the data was downloaded through the Bursa Malaysia website. Moreover, the financial statements of the listed companies during this

period are an additional source of data for this study and these statements were downloaded through the Datastream database at the UUM library.

3.7 Summary

This chapter provides the research framework and explains the hypotheses regarding the expected relationships between the dependent and the independent variables. It also explains the analysis technique that was used in this study and the measurement of variables under this study. Finally, this chapter shows information about the sampling and the data collection.

CHAPTER FOUR

ANALYSIS AND FINDINGS

4.1 Introduction

In the preceding chapter, a detailed plan to carry out the tests on the hypotheses was presented and discussed. This chapter discusses the results of this research. It explains the acceptance or rejection of the hypotheses that were tested by comparing them with the results obtained. The analyses first begin with the descriptive analysis of this study, followed by the correlation analysis between variables and the regression coefficients analysis. The correlation and coefficients analyses were conducted one time only to represent the whole period of the study. This chapter is concluded with a summary for the findings.

4.2 Analysis

4.2.1 Descriptive statistics

Table 4.1 presents the descriptive statistics for the dependent variable, independent variables, and the control variables. It reports the sample mean, median, minimum, maximum and standard deviation for the whole sample of 113 IPOs listed on the Bursa Malaysia from 29 June 2006 to 24 February 2011.

From the information in Table 4.1, the statistics show that the mean and median of underpricing as measured by market adjusted initial return is 10.21% and 4%, respectively. The maximum underpricing is 163 % while the lowest underpricing is -74 %. The standard deviation of underpricing among the companies in the sample of the study is 32.93%. This standard deviation for underpricing implies a high degree of variations in initial returns for the sample, which can be seen in the spread between maximum value and minimum value.

Regarding the independent variables, beginning with reputation (as measured by underwriter's market share) recorded a mean and median of 21.01% and 1%, respectively. The highest reputation is 56%, while the lowest reputation is 0%. The zero reputation means that the underwriting bank has underwritten some IPOs, but compared to the total amount of Ringgit brought to the market it comes very close to zero. The standard deviation of reputation is about 24.68%. As for spread, the mean and median are 21.59 % and 4%, respectively. Spread records a maximum and minimum value of 111 % and 1 %, respectively.

Finally, for the control variables, the average and median of leverage are 23% and 15%, respectively. The maximum and minimum leverage are 0% and 80 %, respectively. As for age, the average and median are 5.15 and 1.83 years, respectively. The highest age is 37.50 years, while the lowest age is 0.17 years. For the offer size, the mean and median are RM 392.07 and RM28.61 million, respectively with the highest value of RM12524 million and the lowest value of RM5.15 million. As for the company size, the average is RM1.36

million while the median is RM0.14 million with a maximum and minimum value of RM29.78 and RM0.01 million, respectively.

Table 4.1 Descriptive statistics for 113 Malaysian IPOs between 29 June 2006 and 24 February 2011

	Min	Max	Mean	Median	Std. Deviation
UNDERPRICING	-0.74	1.63	0.10	0.04	0.33
R	0.00	0.56	0.21	0.01	0.25
SPREAD	0.01	1.11	0.23	0.04	0.40
LEV	0.00	0.80	0.23	0.15	0.21
AGE (years)	0.17	37.50	5.15	1.83	7.57
OS*	5.15	12524	392.07	28.61	1663.26
SIZE*	0.01	29.78	1.36	0.14	4.38

Notes: This table presents the descriptive statistics for 113 IPOs that went public during the period 29 June 2006 to 24 February 2011. UNDERPRICING is the level of IPOs underpricing as measured by Market Adjusted Initial Return. REPU refers to the reputation of underwriting bank as measured by market share. SPREAD represents the underwriter's spread and it calculated by dividing the underwriter fees by the gross proceeds of the offering. LEV is the leverage of issuing company as computed by total debt to total assets. AGE refers to the issuing company age and it is calculated as the number of years between the founding date and the IPO date. OS refers to the offer size as computed by the number of offered shares multiplied by the offer price. SIZE is the issuing company size as the total ringgit value of assets.

* In millions of ringgits.

4.2.2 Results of correlation analysis

Pearson correlation analysis was then executed to gauge the strength of relationship between variables used in this study. Statistical tests at a 5% confidence level were used to test the significance of the relationship. The results are shown in Table 4.2.

The correlations between the independent variables and control variables with the dependent variable are explained as follows:

The result of the relationship between reputation and underpricing has the expected negative relationship. This relationship is statistically significant where highly reputable underwriting banks are correlated with lower underpricing and high quality IPOs. This result is consistent with the results of Beatty and Ritter (1986) and Carter et al. (1998). As for the spread, the relationship with underpricing is positive as the study expected, and as we note from Table 4.2, the relationship is statistically significant. Results suggest that issuing companies that were charged with high spread are most probably to be underpriced. This means that because of the ceiling of the spread the underwriting banks should underprice the IPOs. This result is consistent with Chen and Mohan (2002).

Regarding the control variables, there are four variables. The leverage variable has a significant positive relationship with the level of underpricing. As for the age variable, results show that it has a negative relationship with underpricing, but it is not significant. The last two variables, offer size and company size, have a statistically negative relationship with underpricing, but as can be seen they are not significant.

In addition, we can note from this analysis that a significant high correlation also exists between the independent and control variables, suggesting the possibility of facing multicollinearity problems in the regression analysis.

Table 4.2 Correlations matrix for 113 Malaysian IPOs between 29 June 2006 and 24 February 2011

		UNDERP-RICING	R	SPREAD	LEV	AGE	OS	SIZE
UNDERPRIC-ING	Pearson Correlation	1						
	Sig. (2-tailed)							
R	Pearson Correlation	-0.519(**)	1					
	Sig. (2-tailed)	0.000						
SPREAD	Pearson Correlation	0.511(**)	-0.402(**)	1				
	Sig. (2-tailed)	0.000	0.000					
LEV	Pearson Correlation	0.505(**)	-0.409(**)	0.441(**)	1			
	Sig. (2-tailed)	0.000	0.000	0.000				
AGE	Pearson Correlation	-0.012	-0.031	0.105	-0.091	1		
	Sig. (2-tailed)	0.900	0.744	0.270	0.338			
OS	Pearson Correlation	-0.104	0.220(*)	-0.030	-0.052	0.176	1	
	Sig. (2-tailed)	0.273	0.019	0.749	0.587	0.062		
SIZE	Pearson Correlation	-0.003	0.164	0.096	0.131	0.196(*)	0.740(**)	1
	Sig. (2-tailed)	0.976	0.083	0.309	0.167	0.037	0.000	

Notes: This table presents the correlation matrix for 113 IPOs that went public during the period 29 June 2006 to 24 February 2011. UNDERPRICING is the level of IPOs underpricing as measured by Market Adjusted Initial Return. REPU refers to the reputation of underwriting bank as measured by market share. SPREAD represents the underwriter's spread and it calculated by dividing the underwriter fees by the gross proceeds of the offering. LEV is the leverage of issuing company as computed by total debt to total assets. AGE refers to the issuing company age and it is calculated as the number of years between the founding date and the IPO date. OS refers to the offer size as computed by the number of offered shares multiplied by the offer price. SIZE is the issuing company size as the total ringgit value of assets.

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

4.2.2 Regression analysis

Table 4.3 Regression Analysis of UNDERPRICING and Determining Variables

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tole-rance	VIF
(Constant)	0.094	0.271		0.345	0.730		
REPU	-0.399	0.116	-0.299	-3.440	0.001	0.711	1.407
SPREAD	0.228	0.070	0.280	3.243	0.002	0.723	1.384
LEV	0.403	0.140	0.257	2.882	0.005	0.677	1.477
AGE	-0.001	0.003	-0.025	-0.325	0.745	0.915	1.092
OS	-0.002	0.023	-0.011	-0.097	0.923	0.427	2.340
SIZE	0.000	0.023	-0.002	-0.013	0.990	0.406	2.462
N=113	**F-value = 13.306**		**R^2 = 43%**			**Adj. R^2= 39.7%**	

Table 4.3 above presents the variability between the underpricing as a dependent variable and the independent variables and the control variables for the whole period and sample of the study. The study finds an adjusted R square of 39.7%. Therefore, 39.7% of the underpricing is influenced by the independent variables and controlled variables in the study while 60.3% of the underpricing is influenced by other variables.

In addition, Table 4.3 above reports the coefficients between the independent variables and control variables with underpricing as a dependent variable for the whole period of the study. Starting with the tolerance and VIF values, the common rule is VIFs of 10 or higher (or equivalently, tolerances of 0.10 or less) may be a reason for concern because the presence of a greater multicollinearity might falsely lead the researcher to conclude that there is no linear relationship between an independent variable and the dependent variable, and this might violate the model and the results. Table 4.3 shows VIFs with a higher value of 2.46 which is much less than 10, and the tolerance values with a lesser value of 0.406,

which is larger than 0.10. These values means there is no multicollinearity. Even though we can safely assume that, for the whole regression analyses multicollinearity does not exist, but it is better to check the effect of the high correlation between OS and SIZE on UNDERPRICING by using more than just the regression model.

For the coefficients, Table 4.4 indicates that there is a significant relationship between reputation and underpricing because the computed t-value is -3.440 with a significance score of .001. The standardized beta of reputation of -0.299 means that the relationship between reputation and underpricing is negative. The opposite significant relation is observed between spread and underpricing. The standardized beta of spread of 0.280 means a positive relationship.

As for the control variables, leverage has a positive significant association with underpricing because the computed t-value is 2.882 with a significance score of 0.005. Regarding the rest of the controlled variables, there are negative but insignificant relationships between age, offer size, and company size with underpricing.

However, both of the two control variables, OS and SIZE, work closely together, which would probably affect UNDERPRICING. As can be seen from Table 4.2, this might have caused a relatively high correlation of 74 percent between these two variables. When one of these control variables is excluded from the regression equation, the overall significance of the results is affected, but by a very small percentage.

Table 4.4 Regression Analysis of UNDERPRICING and Determining Variables Excluding SIZE

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.094	0.269		0.350	0.727
REPU	-0.400	0.114	-0.299	-3.501	0.001
SPREAD	0.228	0.070	0.280	3.272	0.001
LEV	0.403	0.135	0.257	2.985	0.004
AGE	-0.001	0.003	-0.025	-0.331	0.741
OS	-0.002	0.016	-0.012	-0.157	0.876
N=113	**F-value = 16.118**		**R^2=43%**	**Adj. R^2= 40.3%**	

Table 4.5 Regression Analysis of UNDERPRICING and Determining Variables Excluding OS (offer size)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.074	0.184		0.404	0.687
REPU	-0.400	0.115	-0.300	-3.464	0.001
SPREAD	0.228	0.070	0.280	3.267	0.001
LEV	0.405	0.138	0.258	2.941	0.004
AGE	-0.001	0.003	-0.025	-0.330	0.742
SIZE	-0.002	0.016	-0.010	-0.123	0.902
N=113	**F-value = 16.115**		**R^2= 43%**	**Adj. R^2= 40.3%**	

Table 4.4 reports the multivariate regression analysis, excluding SIZE. When SIZE is excluded from the model, the other variables (REPU, SPREAD, LEV, AGE, and OS)

explain 40.3 per cent of the variation in the dependent variable, which is UNDERPRICING. Table 4.5 above presents the multivariate regression analysis, excluding OS. The exclusion of OS resulted in similar results as in Table 4.4, when excluding Size.

Tables (4.5) and (4.6) show that the R^2 only increased from 39.7 per cent to 40.3 per cent. This can refer to the insignificant relationship that both SIZE and OS have with UNDERPRICING.

4.2.3 Summary of the Findings

Table 4.6 provides a summary for the findings of this study. It determines the acceptance or rejection of the hypotheses based on the findings that are related to underpricing. The table also shows whether the findings of this study are consistent or inconsistent with the findings of the majority of the previous studies.

Table 4.6 Summary of Findings

	REPU	SPREAD	LEV	AGE	OS	SIZE
The assumed relations between the independent variables, control variables, and the dependent variable	-	+	+	-	-	-
The findings of this study	Sig -	Sig +	Sig +	-	-	-
The acceptance (A) or rejection (R) of hypotheses	A	A	A	A	A	A
The compatibility with findings of the previous studies (Yes or No)	Yes	Yes	Yes	Yes	Yes	Yes

Notes: (+) Positive association (-) Negative association. (Sig) Significant association. (A) Accept or (R) Reject the hypotheses. (Yes) consistent, or (No) inconsistent with the findings of the majority of previous studies.

4.3 Summary

This chapter discusses the descriptive analysis, correlations, and the regressions analyses between the variables under study. It illustrates how the independent variables and control variables influence the dependent variable and explains the nature of the impact that each one of these independent and control variables has on the dependent variable. It also provides a summary of the findings.

CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

5.1 Introduction

This chapter provides the overall summary of this study and discussion of the results. It is divided into four sections. Section 5.2 contains the overview of the research process. Section 5.3 discusses the summary of the findings of the study. Section 5.4 provides the recommendations for future research. Finally, section 5.5 is the conclusions for this study.

5.2 Overview of research process

The objective of this study is to provide some evidence on the attributes of underwriters that affect the level of underpricing in IPOs in Malaysia. This evidence is on the application of IPO theories that are based on the information asymmetry between the IPO parties, issuing companies, underwriters, and investors.

In so doing, an extensive amount of literature was reviewed to identify the suitable variables that could be adopted as attributes of underwriters, which in turn affect underpricing. Two variables represent the attributes of underwriters that examined in this study, reputation and spread. In addition, four controlled variables are examined in this study together with the underwriter's reputation and spread. These variables are leverage, company age, offer size, and company size. A total of 113 IPOs listed from 29 June 2006 until 24 February 2011 were included in this study. For achieving the purpose of this study the OLS multiple regression technique was applied. In the multiple regressions,

underpricing is used as the dependent variable and underwriter's reputation and spread as the independent variables while leverage, age, offer size, and company size were used as the control variables.

5.3 Summary of the findings

The objective of this study is to see the relationship between the underwriter reputation and spread with the level of underpricing. The results show that there is a negative significant relationship between reputation and underpricing. Also, the results show that underwriter's spread has a positive significant association with underpricing. Besides that, the findings show the relationship between the control variables and the dependent variable. One of these four control variables, leverage, has a positive significant relationship while the rest of these variables have an insignificant negative relationship.

It can be concluded from the study that underwriters that have a high reputation assure the value of the issuing company in addition to lowering the investor's hesitation about the value of offerings. Therefore, the underwriting bank aims to distinguish itself among other underwriters. This distinguishing helps in decreasing the level of underpricing, because a high reputation allows for lowering the information asymmetry between issuers and investors, and thereby reducing the underpricing cost.

It is also concluded from the study that underwriters that have a higher spread are associated with high underpricing. This is likely because the spread variable considers much uncertainty regarding the pricing of new issues.

Another conclusion of the study is the results regarding control variables. The findings show that leverage has a significant positive association with underpricing. The high ratio of leverage can lead a company to bankruptcy. Thus, the potential investors will not be attracted to such an issuing company due to the high level of underpricing that would be associated with these issuing companies. Regarding age, this study finds that it has an insignificant relationship with underpricing. The newly-founded companies have higher uncertainty rather than the older ones. This might be considered in that the new issuing companies are less probably to have good coverage from financial analysts and there is not much published financial information about them. This uncertainty will be associated with a high underpricing.

Finally, the findings show that the offer size and company size have an insignificant negative relationship with underpricing. Larger offerings are often offered by issuers who have several operating periods in addition to well-known records. This will lead to reducing the uncertainty about IPOs, therefore reducing the underpricing. As for company size, the bigger issuers have good productivity and a strong chance to obtain capital. This will lead to reducing the investor's uncertainty about the offerings and then the level of underpricing.

5.4 Recommendations for future studies

It is recommended that future studies should widen the period of the study on the underwriters' attributes to get as accurate findings as possible, particularly in relation to the findings of its impact on the level of short-run underpricing.

The possible number of variables that can be used to examine the impact of underwriters attributes on underpricing is abundant. Therefore, it is suggested to extent extend the study by considering other attributes as variables, such as quality of research coverage and underwriter expertise.

5.5 Conclusion

This study examines the initial underpricing for a sample of 113 Malaysian IPOs listed from the period 29 June, 2006 until 24 February, 2011. It investigates the impact of underwriter's attributes, reputation and spread on the level of underpricing. The initial underpricing during this period is 10.24%, which is considered a small percentage compared to the previous studies.

Issuing companies select an underwriting bank based on several criteria, including the level of underpricing they expect to encounter. The study finds that the underwriter's attributes play a vital role in determining the level of underpricing. The results show that the underwriter's reputation impacts negatively on the underpricing. This means that reputable underwriters (as measured by market share) are related with lesser underpricing than non-reputable underwriters. As for underwriter's spread, the study finds that it has a positive significant impact on underpricing.

The study also examines the relation between the degree of underpricing and a set of control variables. It finds that, leverage has a significant positive relationship with underpricing. The other variables, age, offer size, and company size, have an insignificant negative association with underpricing.

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Appendix 1

List of the Malaysian companies that went public during the period of the study

Number	COMPANY NAME
1.	FAVELLE FAVCO BERHAD
2.	PUTRAJAYA PERDANA BERHAD
3.	SWEE JOO BERHAD
4.	GREENYIELD BERHAD
5.	STEMLIFE BERHAD (MESDAQ Market)
6.	AMFIRST REAL ESTATE INVESTMENT TRUST
7.	HEKTAR REAL ESTATE INVESTMENT TRUST
8.	KENCANA PETROLEUM BERHAD
9.	MY E.G. SERVICES BERHAD (MESDAQ Market)
10.	RESINTECH BERHAD
11.	QUILL CAPITA TRUST
12.	AL-HADHARAH BOUSTEAD REIT
13.	AMANAHRAYA REAL ESTATE INVESTMENT TRUST
14.	PANTECH GROUP HOLDINGS BERHAD
15.	DUFU TECHNOLOGY CORP. BERHAD
16.	H-DISPLAYS (MSC) BERHAD (MESDAQ Market)
17.	TEJARI TECHNOLOGIES BERHAD (MESDAQ Market)
18.	MELATI EHSAN HOLDINGS BERHAD
19.	ATRIUM REAL ESTATE INVESTMENT TRUST
20.	OGAWA WORLD BERHAD
21.	ZHULIAN CORPORATION BERHAD
22.	SUPERLON HOLDINGS BERHAD
23.	NATURAL BIO RESOURCES BERHAD
24.	HELP INTERNATIONAL CORPORATION BERHAD
25.	DELEUM BERHAD
26.	KONSORTIUM TRANSNASIONAL BERHAD
27.	HEXTAR HOLDINGS BERHAD
28.	SCANWOLF CORPORATION BERHAD
29.	PETRA ENERGY BERHAD
30.	SARAWAK PLANTATION BERHAD
31.	COMPLETE LOGISTIC SERVICES BERHAD
32.	VOIR HOLDINGS BERHAD
33.	HAP SENG PLANTATIONS HOLDINGS BERHAD
34.	SYNERGY DRIVE BHD
35.	BHS INDUSTRIES BERHAD
36.	AEON CREDIT SERVICE (M) BERHAD
37.	BIO OSMO BERHAD
38.	TRANS-ASIA SHIPPING CORPORATION BERHAD

39. WENG ZHENG RESOURCES BERHAD
40. WINSUN TECHNOLOGIES BERHAD (MESDAQ Market)
41. SIGNATURE INTERNATIONAL BERHAD
42. KEY ASIC BERHAD
43. SCGM BHD
44. TFP SOLUTIONS BERHAD (MESDAQ Market)
45. SLP RESOURCES BERHAD
46. EWEIN BERHAD
47. JF TECHNOLOGY BERHAD (MESDAQ Market)
48. HARTALEGA HOLDINGS BERHAD
49. DAYANG ENTERPRISE HOLDINGS BERHAD
50. TM INTERNATIONAL BERHAD
51. INNITY CORPORATION BERHAD (MESDAQ Market)
52. LUXCHEM CORPORATION BERHAD
53. UZMA BERHAD
54. SEALINK INTERNATIONALBERHAD
55. PERWAJA HOLDINGS BERHAD
56. VASTALUX ENERGY BERHAD
57. SUNZEN BIOTECH BERHAD (MESDAQ Market)
58. TEO SENG CAPITAL BERHAD
59. UEM LAND HOLDINGS BERHAD
60. ASIA BIOENERGY TECHNOLOGIES BERHAD (MESDAQ Market)
61. FIBON BERHAD (MESDAQ Market)
62. SAMCHEM HOLDINGS BERHAD
63. XINGQUAN INTERNATIONAL SPORTS HOLDINGS LIMITED
64. HANDAL RESOURCES BERHAD
65. MULTI SPORTS HOLDINGS LTD
66. TAS OFFSHORE BERHAD
67. HALEX HOLDINGS BERHAD
68. MUAR BAN LEE GROUP BERHAD
69. SINARIA CORPORATION BERHAD
70. XIDELANG HOLDINGS LTD
71. MAXIS BERHAD
72. TA GLOBAL BERHAD
73. KELINGTON GROUP BERHAD (ACE Market)
74. DSC SOLUTIONS BERHAD (ACE Market)
75. YOONG ONN CORPORATION BERHAD
76. HOMERITZ CORPORATION BERHAD
77. JCY INTERNATIONAL BERHAD
78. HOCK HENG STONE INDUSTRIES BHD
79. OVERSEA ENTERPRISE BERHAD (ACE Market)
80. ECS ICT BERHAD

81. TURBO-MECH BERHAD
82. SEREMBAN ENGINEERING BERHAD
83. MASTERSKILL EDUCATION GROUP BERHAD
84. SARAWAK CABLE BERHAD
85. K-STAR SPORTS LIMITED
86. SHIN YANG SHIPPING CORPORATION BERHAD
87. KIMLUN CORPORATION BERHAD
88. SUNWAY REAL ESTATE INVESTMENT TRUST
89. EA HOLDINGS BERHAD (ACE Market)
90. TATT GIAP GROUP BERHAD
91. CAPITAMALLS MALAYSIA TRUST
92. SCC HOLDINGS BERHAD (ACE Market)
93. BERJAYA RETAIL BERHAD
94. FOCUS POINT HOLDINGS BERHAD (ACE Market)
95. IVORY PROPERTIES GROUP BERHAD
96. SIG GASES BERHAD
97. MALAYSIAN GENOMICS RESOURCE CENTRE BERHAD (ACE Market)
98. GW PLASTICS HOLDINGS BERHAD
99. CYPARK RESOURCES BERHAD
100. MALAYSIA MARINE AND HEAVY ENGINEERING HOLDINGS BERHAD
101. CHINA OUHUA WINERY HOLDINGS LIMITED
102. PETRONAS CHEMICALS GROUP BERHAD
103. CAREPLUS GROUP BERHAD (ACE Market)
104. SOZO GLOBAL LIMITED
105. MAXWELL INTERNATIONAL HOLDINGS BERHAD
106. ASIA MEDIA GROUP BERHAD (ACE Market)
107. BENALEC HOLDINGS BERHAD
108. TAMBUN INDAH LAND BERHAD
109. K.SENG SENG CORPORATION BERHAD
110. CENTURY SOFTWARE HOLDINGS BERHAD
111. BERJAYA FOOD BERHAD
112. MANAGEPAY SYSTEMS BERHAD (ACE Market)
113. APFT BERHAD