Asian Academy of Management Journal, Vol. 10, No. 1, 19–36, January 2005

THE EFFECTS OF OWNERS' PARTICIPATION AND LOCKUP ON IPO UNDERPRICING IN MALAYSIA

Wan Nordin Wan Hussin
Faculty of Accountancy, Universiti Utara Malaysia,
06010 Sintok, Kedah, Malaysia
e-mail: wannordin@uum.edu.my

ABSTRACT

Recent theories of initial public offering (IPO) underpricing depart from the traditional asymmetric information models. Two recent IPO underpricing models are Habib and Ljungqvist (2001) and Brav and Gompers (2003). The Malaysian IPO market, characterised by high incidence of secondary offerings and IPO lockup commitments, provides a fertile ground to test the newer theories of IPO underpricing. Examining IPOs between August 1996 and June 2000 in Bursa Malaysia, the evidence lends support to the theoretical predictions that IPO underpricing is negatively related to owners' participation ratio and positively associated with the fraction of directors' shares which is subject to liquidity restrictions.

Keywords: initial public offering (IPO), underpricing, lockup, Malaysia

ACKNOWLEDGEMENTS

I wish to thank Nurwati Ashikin Ahmad Zaluki and the two anonymous reviewers for their precious comments and suggestions to enrich this paper. All errors remain mine.

INTRODUCTION

An impressive body of evidence around the world firmly establishes that initial public offerings (IPOs) are typically priced at substantial discounts from the values that prevail in the aftermarket. In other words, IPOs are on average underpriced where the initial market valuation significantly exceeds the IPO offer or subscription price. Ritter (2003) provides an excellent survey of the international empirical regularity of IPO positive initial returns in 38 countries ranging from an average of 5% for Denmark to 257% for China. This means that IPO investors around the globe on average earn positive initial return from purchasing shares at the IPO offer price and selling them at the closing price on the first day of trading. Ritter (1987) demonstrates that IPO underpricing,

whereby the share price jumps substantially on the first day of trading, represents a substantial cost of going public.

Since the early 1980s, a considerable research effort has been devoted to understand the IPO underpricing phenomenon. A multitude of theoretical models has been constructed to offer explanations for the fact that newly listed companies and their selling shareholders would willingly sell the IPO shares at a price below the first day aftermarket price and bear the costs of not maximising the IPO proceeds and greater ownership dilution. Most of the earlier explanations on why IPOs are deliberately underpriced stem from the important informational asymmetries, i.e. an unequal distribution of information, between participants in the IPO market namely the owners/managers (insiders) of the company seeking a stock exchange listing, the investment banks who underwrite and market the IPO, and the outside investors.

In the late 1990s, new explanations for IPO underpricing are advanced which depart from the traditional explanations of informational frictions that arise among IPO participants. In these latest stories, information asymmetries are given less emphasis. Instead, IPO underpricing are associated with, among others, insiders' preference for wider outside ownership to enhance liquidity or entrench themselves (Booth & Chua, 1996; Brennan & Franks, 1997), insiders' wealth effects (Habib & Ljungqvist, 2001; Loughran & Ritter, 2002) and the lockup commitment imposed on insiders (Mohan & Chen, 2001; Brav & Gompers, 2003). Lockup, or better known as share moratorium in Malaysia and lock-in in the United Kingdom (UK), means that the major shareholders of IPO companies commit themselves not to sell portions of their shareholdings during a lockup period immediately after the IPO. In Malaysia, lockups are imposed by the IPO regulator namely the Securities Commission on certain companies as a condition for listing on Bursa Malaysia (formerly known as the Kuala Lumpur Stock Exchange), whereas in the United States (US), lockup agreement is negotiated between the investment bank and the insiders of the IPO companies (Brau, Lambson & McQueen, 2005). Although the evidence on IPO underpricing largely bears out the predictions of the newer theories, it is still predominantly US-centric with the exception of Brennan and Franks (1997) who test UK data.

Thus this study addresses the void in the IPO underpricing literature by testing the recent theories of IPO underpricing using Malaysian data. The Malaysian IPO market is well-suited for this task on two grounds. Firstly, secondary offering involving the sales of existing shares held by owners of IPO companies is a common feature of IPO in Malaysia, thus providing a unique opportunity to test owners' participation ratio on IPO underpricing. And secondly, given that IPO lockup is also prevalent in Malaysia, its effect on IPO underpricing can be examined outside the US.

The evidence shows that the more the owners participate in the IPO, the lower is the underpricing, consistent with Habib and Ljungqvist (2001) who assert that owners are more tolerant of underpricing the fewer shares they sell at the time of the IPO. The evidence also indicates that the greater the portion of directors' shares that are locked in, the higher is the underpricing. This is consistent with the notion that the severity of the IPO lockup imposed on the directors signals the ex-ante uncertainty facing the IPO company.

This paper starts with a review of the literature on IPO underpricing with particular emphasis on the recent theories and evidence. Next, it describes the data and IPO underpricing model follows by the findings. Lastly, it concludes and provides suggestions for future research.

LITERATURE REVIEW

Arguably the best known rationale for IPO underpricing is the adverse selection model proposed by Rock (1986). Rock's model assumed there is informational asymmetry among potential investors. Beatty and Ritter (1986), Balvers, McDonald, and Miller (1988), Carter and Manaster (1990), and James and Weir (1990) subsequently extended Rock's model. Among the empirically testable implications generated from the adverse selection models are underpricing should decrease as information becomes less heterogeneous across investor groups (Rock, 1986), the greater the ex-ante uncertainty the higher is the expected underpricing (Beatty & Ritter, 1986), high reputation investment bank will more frequently use high reputation auditor and both reputable investment bank and auditor help to reduce IPO underpricing (Balvers et al., 1988), more reputable investment banks are associated with less risky IPOs and underprice less in expectation (Carter & Manaster, 1990) and the presence of a borrowing relationship lessens the ex-ante uncertainty and the degree of underpricing (James & Weir, 1990; Schenone, 2004). Extensive empirical studies that test the adverse selection models of IPO underpricing generally find supportive evidence, the latest include Ang and Brau (2002) and Brau and Fawcett (2005).

In contrast to the adverse selection models, signalling theory of IPO underpricing assumes informational asymmetries between the IPO companies and outside investors whereby certain amount of inside information such as potential future cash flows, investment opportunities and management expertise are known only to insiders. The three pioneering signalling models of IPO underpricing that have attracted the most attention are Allen and Faulhaber (1989), Grinblatt and Hwang (1989) and Welch (1989). In all these models, underpricing is used as a signal that the company is of high quality whereby an IPO company that underpriced more is considered a better company. This echoes the view expressed in the

popular press that underpriced IPOs possess a certain aura of success.[1] However, it seems inconsistent with the adverse selection model that argues high reputable underwriters are in favour of taking public high quality companies that are expected to exhibit lower underpricing. In addition, signalling models expect companies to raise additional funds in the future through seasoned equity offerings (SEOs). In signalling model, the SEO is an important mechanism by which high quality companies recoup the underpricing costs. Relative to the greater empirical success of the adverse selection models, support for the signalling models is mixed. The absence of unanimity in prior work on the signalling model of IPO underpricing is perhaps due to the varying time interval between IPO and SEO. Arguably, the longer the interval, the more ambiguous the IPO underpricing signal becomes as there may be other confounding factors that come into play. Further, Ritter and Welch (2002) argue that on theoretical ground it is unclear why throwing money away in the form of underpricing is a more efficient signal than advertising or philanthropy. However, a new study by Brau and Fawcett (2005) shows that from the CFO perspectives, IPO underpricing provides an external show of confidence and therefore is associated with a positive signal.

Unlike the adverse selection models and the signalling models, the latest rationales for IPO underpricing do not assume that any parties has an information advantage. One strand of these studies focuses on the economic consequences of lockup provisions imposed on the pre-IPO shareholders. A lockup limits the freedom of the affected shareholders to sell their shares in the aftermarket for a specified period of time after the IPO. The conventional wisdom is that a lockup is a necessary evil to reduce the potential conflict between insiders and outside investors. By maintaining a significant economic interest in the company following the IPO, the insiders reassure potential IPO investors that they will not be taken advantage of which helps to mitigate the adverse selection problems faced by IPO investors.

Based on the above motivation for lockups, Mohan and Chen (2001) and Brav and Gompers (2003) argue that the structure of the lockup agreements reflects the degree of the adverse selection/moral hazard problems and hence IPO underpricing. A shorter lockup is associated with less acute adverse selection problem and hence lower underpricing.

Mohan and Chen (2001) test whether the lockup period has information content regarding ex-ante uncertainty about the IPO value. They argue that risky IPOs are associated with longer lockup period because investors need more time to resolve

[1] *Wall Street Journal* regularly gives publicity to the so-called IPO winners, companies whose shares price had the largest percentage increase from offer price to aftermarket price.

the uncertainty. They analyse 729 IPOs from 1990 to 1992, of which 481 companies have the standard 180 days, 73 companies have lockups less than 180 days, and the remaining 175 companies have lockups more than 180 days. Regressing underpricing against lockup period in days and square of lockup period in days and other possible determinants of underpricing, they find a U-shaped relationship between underpricing and lockup period suggesting that lockup period that departs from the norm of 180 days is associated with more uncertainty about a company's value and deeper underpricing.

Brav and Gompers (2003) examine 2,794 IPOs during 1988–1996 in the US and find that underpricing is higher for companies with a larger fraction of the shares outstanding subject to liquidity restrictions. They also show that opaque or less transparent companies, which are associated with greater informational asymmetries, have longer lockups.

Another strand of new research relates IPO underpricing to the wealth of the IPO entrepreneurs. These recent wealth-based models of IPO underpricing, among others, seek to explain why dot-com IPOs left so much "money on the table"[2] through IPO underpricing compared to conventional IPOs. Habib and Ljungqvist (2001) wealth losses minimisation hypothesis posits that owners taking their companies public are not particularly concerned about IPO underpricing when their participation ratio in the IPO, measured by the ratio of secondary shares sold at the IPO to shares outstanding pre-IPO, is low. On the other hand, if they desire to cash out at the IPO stage, they have incentive to minimise the wealth transfer to potential IPO investors by reducing underpricing. Their model also predicts that IPO firms in which their owners plan to sell more shares at the IPO incur greater promotional costs, defined as fees paid to underwriter, auditors, lawyers and cost of road shows. Promoting the IPO serves to increase the fraction of uninformed investors taking part in the IPO, thereby helps to mitigate the adverse selection problems. Their tests on a sample of US IPOs during 1991 to 1995 lend empirical support to their predictions. The more owners' shares are offered in the IPO, the more companies are expected to spend in promoting the IPOs, and these promotional activities reduce underpricing. Similarly, Ljungqvist and Wilhelm (2003) document that the astronomical levels of underpricing during 1999 and 2000, the so-called dot-com bubble, can be partly explained by the sharp decrease in both the frequency and magnitude of secondary sales of existing shares by all categories of pre-IPO owners, especially CEOs.

[2] This is a practitioner jargon to ascribe the huge windfall gained or easy money earned by the preferred or lucky IPO investors who are allocated shares at the IPO, defined as the number of shares sold times the difference between first day closing price and offer price.

Recent studies on IPOs in Malaysia (Paudyal, Saadouni, & Briston, 1998; Yong, Yatim, & Sapian, 1999; Jelic, Saadouni, & Briston, 2001) relate to IPOs prior to 1996, with the exception of Sun and Tong (2002) and Wan Hussin (2001, 2002, 2003). As highlighted by Wan Hussin (2001, 2002, 2003), the IPO market in Malaysia has witnessed dramatic changes since 1996 in terms of pricing mechanism, the imposition of short-lived IPO profit guarantees on the major shareholders and significant drop in oversubscription rate and consequently underpricing.

Paudyal et al. (1998) investigate the determinants of IPO underpricing in the Main Board of the Bursa Malaysia and document that the oversubscription rate or excess demand has an overwhelming influence. Unlike Paudyal et al. (1998), Yong et al. (1999) examine underpricing of IPOs involving both the Main Board and Second Board companies during 1991–1995. They also investigate the impact of IPO types (primary issue, secondary offering or both) on underpricing and show that the level of IPO underpricing is not statistically different among IPO types.[3]

Jelic et al. (2001) extend the sample period of Paudyal et al. (1998) study to include IPOs in the Main Board since 1980 and examine the role of underwriter reputation and earnings forecast in IPO prospectus on underpricing. They document that both underwriter reputation and the accuracy of earnings forecast do not influence IPO underpricing. However, market sentiment prior to IPO and oversubscription rate positively affect the level of underpricing.

Unlike the other studies on IPOs in Malaysia, Wan Hussin (2002) does not examine underpricing per se but examines separately the determinants of IPO offer price and IPO first day closing price. He finds that the key determinants of IPO offer price and IPO aftermarket price are, respectively, the owners' participation ratio in the IPO and oversubscription rate. Given that IPO offer price and IPO aftermarket price are the two ingredients of IPO underpricing, this study attempts to develop a more accurate IPO underpricing model by simultaneously considering factors that influence IPO offer price and IPO first day market price. As mentioned earlier, it also addresses the void in the IPO underpricing literature by examining Habib and Ljungqvist (2001) rationale for IPO underpricing and the role of IPO lockup using non-US data. Furthermore, this study extends the literature on IPO underpricing in Malaysia by examining IPOs since 1996, which coincides with the IPO pricing liberalisation era.

[3] In Malaysia, primary issue is known as public issue and secondary offering is called offer for sales.

DATA AND IPO UNDERPRICING MODEL

Given that there are structural differences in IPO pricing following deregulation in 1996 with the removal of constraints on IPO price setting, the sample used to examine IPO underpricing is restricted to the post-liberalisation IPOs. The initial sample comprises of IPOs listed up to 30 June 2000 and whose determination of offer price are not subject to binding regulatory constraints. The cut off date for the sample ends at 30 June 2000 because in July 2000 new and enhanced prospectus disclosure requirements were introduced when the Securities Commission assumed the role as approving and registering authority for prospectuses from the then Registrar of Companies (now known as Companies Commission of Malaysia). Due to unavailability of a few prospectuses and removal of infrastructural project companies and a company engaged in investment banking, the sample is reduced to 157 companies. A further three companies are excluded because they lack complete data and the final sample is trimmed to 154 companies.

Underpricing, or positive initial return, means that shares in an IPO are sold at a discount relative to their intrinsic or true value. Raw or unadjusted initial return (RETURN) is usually defined as the percentage change from the subscription price (IPO PRICE) to the closing price on the first day of trading (MKTPRICE) where:

$$\text{RETURN} = (\text{MKTPRICE} - \text{IPOPRICE})/\text{IPOPRICE}. \quad (1)$$

Based on the evidence presented in Wan Hussin (2002), the variables associated with owners' participation ratio (OFFER) and oversubscription (DEMAND) which significantly affect IPO pricing and initial market valuation respectively are incorporated in the IPO initial return model. OFFER is the number of secondary shares offered in the IPO divided by pre-IPO shares and reflects the extent in which the owners participated in the IPO. In the spirit of Habib and Ljungqvist (2001), OFFER is expected to reduce underpricing.

The variable DEMAND measures the number of times IPO shares is over- or undersubscribed. If the evidence found in previous studies on Malaysian IPOs is any guide, DEMAND is expected to have a positive effect on underpricing. A large oversubscription rate reflecting strong investor interest in the IPO leads to increased heterogeneity of beliefs concerning the true value of the company. Reese (1998) shows that the level of investor interest, proxied by newspaper

citations leading up to the IPO, is positively related to initial return and IPO trading volume.[4]

The effects of IPO lockup (LOCKUP) and IPO profit guarantee (GUARANTEE) on underpricing are also tested by incorporating the variables in the IPO initial return model. Studies in the US find that longer lockup signals greater ex-ante uncertainty about the company value. In Malaysia, the duration of the lockup among companies with IPO lockups is indistinguishable. Under the share moratorium rules that were in existence during the sample period, the major shareholders of all Second Board companies and certain Main Board companies involved in construction, property developments, services or specialised activities are not allowed to sell, transfer or assign 45% of the issued share capital of the companies within one year after listing. Thereafter, in every subsequent year, the major shareholders of the companies are permitted to dispose one third of the shares that are under moratorium. For this reason, the proportion of shares held directly and indirectly by directors which are locked in is used to signal the ex-ante uncertainty.

As elaborated in Wan Hussin and Ripain (2003), a unique feature of IPO market in Malaysia during 1996–1999 was the imposition of IPO profit guarantees on the major shareholders of certain IPO companies. With the profit guarantee agreement in place, IPO investors could take comfort that the forecasted/ projected profits of the IPO companies would be sustained for a 3-year period post listing. Like the signalling role of IPO lockup, the imposition of an investor protection mechanism in the form of profit guarantee by the IPO regulator signifies that the company has inherently high ex-ante uncertainty. Higher ex-ante uncertainty is expected to exacerbate IPO initial return as investors require larger discount. Thus, both LOCKUP and GUARANTEE are expected to have a positive association with IPO underpricing.

Since the dependent variable RETURN is expressed in percentage, the variables associated with IPO lockup and IPO profit guarantee are also expressed in percentages as follows where:

$$\text{LOCKUP} = \frac{\text{Number of shares held directly or indirectly by directors which are locked in}}{\text{Number of post-IPO shares held directly or indirectly by directors}} \quad (2)$$

[4] For his sample of IPOs in the US, the demand schedule for the IPO shares is not directly observable.

$$\text{GUARANTEE} = \frac{\text{Amount of guaranteed profits borne directly by directors or indirectly via persons or companies related to directors}}{\text{Total guaranteed profits}} \quad (3)$$

In light of the evidence presented in Wan Hussin (2001) which clearly indicates that IPO underpricing is considerably less in the aftermath of the Asian financial crisis, a categorical variable associated with the economic condition (DECON) is also incorporated in the IPO initial return model. DECON takes a value of 1 for IPO listed after 1 September 1997. And finally, a control variable SIZE, proxied by natural log of proforma net tangible assets, is included in the model.

Based on the preceding discussion, the ordinary least squares regression to determine the factors affecting IPO initial return in Malaysia is:

$$\text{RETURN}_i = a_0 + a_1\text{OFFER}_i + a_2\text{DEMAND}_i + a_3\text{LOCKUP}_i + a_4\text{GUARANTEE}_i + a_5\,\text{DECON}_i + a_6\,\text{SIZE}_i + \text{error}_i \quad (4)$$

where

OFFER = number of secondary shares offered in the IPO divided by pre-IPO shares,
DEMAND = number of times IPO shares is over- or undersubscribed,
DECON = 1 for IPO listed after 1 September 1997 and zero otherwise,
SIZE = natural log of proforma net tangible assets post-IPO,

and RETURN, LOCKUP and GUARANTEE are as previously defined in equations (1), (2) and (3). Data are obtained from the IPO prospectuses, Investors Digests and Reuters Business Briefings.

FINDINGS

Table 1 shows the sample characteristics, partitioned by pre- and post-crisis and board of exchange (Main or Second Board). Out of 154 companies in the sample, 67 companies are listed prior to the Asian Financial Crisis on 1 September 1997, and 87 companies after the crisis. Slightly over 70% of the sample companies are listed on the Second Board. Panel A shows that nearly 60% of the sample companies are audited by the then Big-5 firms of accountants comprising Arthur Andersen, Coopers & Lybrand, Ernst & Young, KPMG Peat Marwick and Price

Waterhouse[5]. The incidence of using large firms of accountants is slightly higher for Main Board companies than Second Board, particularly after the crisis. Slightly over 35% of the sample companies engaged either Arab Malaysian Merchant Bankers (AMMB) or Commerce International Merchant Bankers (CIMB) as the managing underwriters. These two firms are designated as "prestigious" underwriters in this study based on their IPO market share.[6]

TABLE 1
SAMPLE CHARACTERISTICS

	Pre-crisis		Post-crisis		Total (n = 154)
	Main (n = 19)	Second (n = 48)	Main (n = 22)	Second (n = 65)	
Panel A: Financial Advisers Engaged					
Both auditor and underwriter "prestigious"	4	11	9	11	35
Only auditor is "prestigious"	7	15	7	25	54
Only underwriter is "prestigious"	1	9	1	10	21
None are "prestigious"	7	13	5	19	44
Panel B: Investor Protection					
Profit Guarantee	0	35	1	45	81
Lockup	1	13	6	20	40
None	18	0	15	0	33
Panel C: IPO Underpricing					
Positive Initial Return	19	48	15	50	132
Negative Initial Return	0	0	7	15	22
Panel D: Demand for IPO shares					
Oversubscribed	19	48	17	54	138
Undersubscribed	0	0	5	11	16
Panel E: Sector					
Construction	1	9	1	9	20
Consumer product	0	9	1	20	30
Industrial product	6	22	10	28	66
Trading and services	5	8	5	8	26
Others (finance, plantation, property)	7	0	5	0	12

Pre-crisis and post-crisis subsamples consist of companies that were listed before and after 1 September 1997, respectively. "Prestigious" auditors are the so-called Big-5, namely Arthur Andersen, Coopers & Lybrand, Ernst & Young, KPMG Peat Marwick and Price Waterhouse. "Prestigious" underwriters are Arab Malaysian Merchant Bankers (AMMB) or Commerce International Merchant Bankers (CIMB). (Note: Price Waterhouse is now known as PricewaterhouseCoopers following the merger between Price Waterhouse and Coopers & Lybrand).

[5] Price Waterhouse is now known as PricewaterhouseCoopers following the merger between Price Waterhouse and Coopers & Lybrand.

[6] In an article published by *Asiamoney* (November 1999) titled "Humbling of Daim Zainuddin" by Matthew Montagu-Pollock, the author states: "CIMB is considered to be Malaysia's number one or number two merchant bank, alongside Arab-Malaysian."

Panel B shows that IPO profit guarantees are commonplace among companies listed on the Second Board. Only eight out of 41 companies listed on the Main Board (or 20%) are imposed with IPO profit guarantees or shares lockup, whereas all Second Board companies have either one of the investor protection mechanisms in place.

Panels C and D show that prior to the Asian Financial Crisis, all IPOs are underpriced and oversubscribed. However after the crisis, more than 10% of IPOs are undersubscribed and their first day closing price is lower than the IPO offer price (negative initial return). Panel E indicates that most of the IPOs in the sample are involved in construction, consumer products, industrial products and trading and services. None of the companies seeking listing in the Second Board are involved in financial services, plantation and property.

Table 2 presents the descriptive statistics for the continuous variables used in the IPO initial return study, partitioned by pre-crisis and post-crisis subsamples. It is evidently clear from Table 2 that average initial return and average oversubscription rate plunged in the aftermath of the crisis, from 154% and 60 times to 28% and 19 times, respectively. The average underpricing and average oversubcription rate for the full sample are 83% and 37 times, respectively. Prior to the Asian financial crisis there are three IPOs in the sample that record the maximum allowable first day return of 400%.[7] There do not appear to be other important differences between pre-crisis and post-crisis subsamples other than along the two dimensions mentioned above.

Table 3 provides further information on IPO underpricing for the sample companies, partitioned by pre-crisis and post-crisis periods and board of exchange. Second Board companies enjoy higher average IPO underpricing than Main Board companies particularly before the crisis. Overall, companies that engaged both "prestigious" auditors and underwriters for the IPOs record the highest average IPO underpricing. Companies with investor protection mechanisms either in the form of shares lockup or profit guarantees also register higher average underpricing than those without. As expected, Panel C shows that oversubscribed IPOs yield higher average underpricing than undersubcribed IPOs. Prior to the crisis, IPOs from the construction sector have the highest average underpricing. However, after the crisis, the highest average underpricing is earned by IPOs from the consumer product sector.

[7] Although not stated in the Bursa Malaysia Listing Requirements, there was an unwritten limit up ruling that capped the premium on IPO at five times the offer price (see *Business Times Malaysia* dated 24 September 1996 – IPOs continue to post fat premiums).

TABLE 2
DESCRIPTIVE STATISTICS FOR SAMPLE FIRMS

	Mean	Median	Standard deviation	Minimum	Maximum
Pre-crisis					
RETURN (n = 67)	1.54	1.48	0.96	0.03	4.00
OFFER (n = 67)	0.10	0.10	0.09	0.00	0.42
DEMAND (n = 67)	60.41	51.56	43.97	4.47	200.25
LOCKUP (n = 14)*	0.88	1.00	0.22	0.35	1.00
GUARANTEE (n = 35)**	0.92	1.00	0.21	0.20	1.00
NET ASSETS (RMmillion) (n = 67)	126.21	57.22	199.67	31.00	1251.00
Post-crisis					
RETURN(n = 87)	0.28	0.14	0.48	–0.54	1.94
OFFER (n = 87)	0.12	0.10	0.12	0.00	0.45
DEMAND (n = 87)	18.51	6.77	25.91	–0.79	161.67
LOCKUP (n = 26)*	0.74	0.87	0.31	0.00	1.00
GUARANTEE (n = 46)**	0.96	1.00	0.13	0.19	1.00
NET ASSETS (RMmillion) (n = 87)	114.23	60.05	245.46	28.00	2044.00
All					
RETURN (n = 154)	0.83	0.56	0.96	–0.54	4.00
OFFER (n = 154)	0.11	0.10	0.11	0.00	0.45
DEMAND (n = 154)	36.74	31.62	40.57	–0.79	200.25
LOCKUP (n = 154)	0.20	0.00	0.38	0.00	1.00
GUARANTEE (n = 154)	0.50	0.55	0.49	0.00	1.00
NET ASSETS (RMmillion) (n = 154)	119.44	59.28	226.05	28.00	2044.00

Pre-crisis and post-crisis subsamples consist of companies that were listed before and after 1 September 1997, respectively. RETURN = (First day market price – IPO offer price)/IPO offer price, OFFER = Number of secondary shares offered in the IPO divided by pre-IPO shares, DEMAND = Number of times IPO shares is over- or under-subscribed, LOCKUP = Number of shares held directly or indirectly by directors which are locked in/Number of post-IPO shares held directly or indirectly by directors, GUARANTEE = Amount of guaranteed profits borne directly by directors or indirectly via persons or companies related to directors/Total guaranteed profits, and NET ASSETS = Net tangible assets immediately post-IPO.

* only companies with lockup

** only companies with profit guarantee.

TABLE 3
AVERAGE IPO UNDERPRICING STATISTICS FOR SAMPLE FIRMS

	Pre-crisis		Post-crisis		Total (n = 154)
	Main (n = 19)	Second (n = 48)	Main (n = 22)	Second (n = 65)	
	0.74	1.86	0.25	0.28	0.83
Panel A: Financial Advisers Engaged					
Both auditor and underwriter "prestigious"	0.64	2.20	0.31	0.40	0.97
Only auditor is "prestigious"	0.74	1.89	0.24	0.29	0.79
Only underwriter is "prestigious"	0.49	1.82	–0.30	0.18	0.87
None are "prestigious"	0.84	1.56	0.27	0.26	0.74
Panel B: Investor Protection					
Profit guarantee	NA	1.83	–0.18	0.12	0.86
Lockup	2.08	1.94	0.63	0.65	1.13
None	0.67	NA	0.13	NA	0.41
Panel C: Demand for IPO shares					
Oversubscribed	0.74	1.86	0.33	0.33	0.92
Undersubscribed	NA	NA	–0.02	0.04	0.02
Panel D: Sector					
Construction	2.08	2.32	0.17	–0.02	1.15
Consumer product	NA	1.94	1.26	0.42	0.90
Industrial product	0.97	1.65	0.07	0.25	0.76
Trading and services	0.74	1.82	0.20	0.41	0.87
Others (finance, plantation, property)	0.36	NA	0.47	NA	0.41

Pre-crisis and post-crisis subsamples consist of companies that were listed before and after 1 September 1997, respectively. "Prestigious" auditors are Arthur Andersen, Coopers & Lybrand, Ernst & Young, KPMG Peat Marwick and Price Waterhouse. "Prestigious" underwriters are Arab Malaysian Merchant Bankers (AMMB) or Commerce International Merchant Bankers (CIMB).

NA = not applicable. (Note: Price Waterhouse is now known as PricewaterhouseCoopers following the merger between Price Waterhouse and Coopers & Lybrand).

The Pearson correlation matrix for the continuous variables used in the IPO underpricing model is presented in Table 4. Although some of the independent variables are correlated but none of the coefficients are greater than 0.6. As reported below under the regression result, none of the variance inflation factors (VIF) for the explanatory variables are greater than four, which indicates that multicollinearity is not a cause for concern in the IPO underpricing model.

TABLE 4
PEARSON CORRELATION MATRIX FOR CONTINUOUS VARIABLES

	RETURN	OFFER	DEMAND	LOCKUP	GUARANTEE
OFFER	–0.222**				
DEMAND	0.679**	–0.132			
LOCKUP	0.209**	–0.145	0.160*		
GUARANTEE	0.026	0.101	0.078	–0.557**	
SIZE	–0.215**	–0.116	–0.293**	–0.077	–0.531**

RETURN = (First day market price – IPO offer price/IPO offer price. OFFER = Number of secondary shares offered in the IPO divided by pre-IPO shares. DEMAND = Number of times IPO shares is over- or undersubscribed. LOCKUP = Numbers of shares held directly by directors which are locked in/Numbers of post-IPO shares hedl directly or indirectly by directors. GUARANTEE = Amount of guaranteed profits borne directly by directors or indirectly via persons or companies related to directors/Total guaranteed profits. SIZE = Natural log of net tangible assets immediately post-IPO.
* indicates significant at 5% (2-tailed)
** indicates significant at 1%(2-tailed)

The regression results are reported in Table 5. The impressive adjusted R^2 indicates that the model can explain almost two-third of the cross sectional variation in IPO underpricing in Malaysia during the study period. This figure is almost double the adjusted R^2 obtained by Paudyal et al. (1998) who examine 79 IPOs on the Main Board of Bursa Malaysia during 1984–1995.

Consistent with Habib and Ljungqvist (2001), the more the owners participate in the IPO by offering secondary shares (OFFER) the lower is the expected underpricing as owners have incentive to price the IPO more fully to minimise their wealth losses from unnecessary underpricing. The positive association between oversubscription ratio (DEMAND) and underpricing reinforces prior evidence by Yong (1997) and Paudyal et al. (1998). A likely explanation, importing from Reese (1998), is that huge investor enthusiasm in the IPO as reflected by the extent in which demand overwhelms supply generates divergence of beliefs concerning the true value of the company which results in a higher initial return.

Both LOCKUP and GUARANTEE have positive coefficients, although only LOCKUP is statistically significant. This suggests that consistent with the evidence on IPO lockup in the US, the larger the portion of directors' shares that are locked in, the higher is the ex-ante uncertainty and underpricing. When the regression is re-run using dummy variables to indicate whether or not IPO lockup exists (DLOCKUP) or whether or not IPO profit guarantee exists (DGUARANTEE), in place of GUARANTEE and LOCKUP, the results are qualitatively similar. The positive coefficients on the variables associated with lockup and profit guarantee indicate that investors view companies that are imposed with such conditions by the regulators as particularly risky, and thus demand a higher discount for purchasing these shares.

TABLE 5
REGRESSION RESULTS FOR IPO UNDERPRICING MODEL

	Coefficient	Coefficient
INTERCEPT	1.512**	1.363*
OFFER	–1.240**	–1.260**
DEMAND	0.008**	0.008**
LOCKUP	0.511**	
GUARANTEE	0.174	
DECON	–0.943**	–0.966**
(Financial crisis = 1)		
SIZE = Natural log of net tangible assets post-IPO	–0.118	–0.093
DLOCKUP (Lockup = 1)		0.494**
DGUARANTEE (Profit guarantee = 1)		0.239
Observations	154	154
VIF range	1.075 to 2.830	1.069 to 3.805
Adjusted R^2	0.633	0.633

In the above model, the dependent variable is RETURN, defined as (First day market price – IPO offer price)/IPO offer price. The independent variables are OFFER = Number of secondary shares offered in the IPO divided by pre-IPO shares, DEMAND = Number of times IPO shares is over- or under-subscribed, LOCKUP = Number of shares held directly or indirectly by directors which are locked in/Number of post-IPO shares held directly or indirectly by directors, GUARANTEE = Amount of guaranteed profits borne directly by directors or indirectly via persons or companies related to directors/Total guaranteed profits, DECON takes a value of one for companies that were listed after 1 September 1997 and zero otherwise, SIZE = Natural log of net tangible assets post-IPO, DLOCKUP and DGUARANTEE are dummy variables that take the value of one if lockup or profit guarantees were impose respectively and zero otherwise.

* indicates significant at 5%

** indicates significant at 1%

Consistent with the univariate analysis in Table 3, the coefficient for DECON is negative reflecting lower underpricing for the post-crisis period. In common with previous studies, this study also found that larger companies have lower underpricing as reflected by the negative coefficient for SIZE, albeit insignificant at the conventional level.

CONCLUSIONS AND FUTURE RESEARCH

This study tests whether owners' participation and share lockups influence IPO underpricing in Malaysia after the pricing liberalisation in 1996 and prior to the introduction of enhanced disclosure requirements for IPO prospectus in July 2000. The study enriches the IPO underpricing literature by testing Habib and Ljungqvist (2001) and Brav and Gompers (2003) rationales for IPO underpricing

using data outside the US. The evidence using Malaysian data shows that both variables significantly influence IPO underpricing in the predicted directions. Furthermore, unlike previous studies, the IPO underpricing model used in this study simultaneously incorporates factors that influence both IPO offer price and IPO first day market price, which are the two ingredients of IPO underpricing. This methodology yields an IPO underpricing model with a significantly improved explanatory power.

This study can be extended in the future by adjusting the raw underpricing for market movements between prospectus date and first day trading date and incorporating specific uses of the IPO proceeds and the identity of shareholders whose shares are subject to liquidity constraints in the IPO underpricing model. It is also instructive to consider the effects of owners' participation and lockups on the long run IPO share price performance.

REFERENCES

Allen, F., and Faulhaber, G. (1989). Signalling by underpricing in the IPO market. *Journal of Financial Economics, 23,* 303–323.

Ang, J., and Brau, J. (2002). Firm transparency and the costs of going public. *The Journal of Financial Research, 25,* 1–17.

Balvers, R., McDonald, B., and Miller, R. (1988). Underpricing of new issues and the choice of auditor as a signal of investment banker reputation. *The Accounting Review, 63,* 605–622.

Beatty, R., and Ritter, J. (1986). Investment banking, reputation, and the underpricing of initial public offerings. *Journal of Financial Economics, 15,* 213–232.

Booth, J., and Chua, L. (1996). Ownership dispersion, costly information and IPO underpricing. *Journal of Financial Economics, 41,* 291–310.

Brau, J., and Fawcett, S. (2005). Initial public offerings: an analysis of theory and practice. *Journal of Finance,* forthcoming.

Brau, J., Lambson, V. E., and McQueen, G. (2005). Lockups revisited. *Journal of Financial and Quantitaive Analysis,* forthcoming.

Brav, A., and Gompers, P. (2003). The role of lock-ups in initial public offerings. *The Review of Financial Studies, 16,* 1–29.

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

Carter, R., and Manaster, S. (1990). Initial public offering and underwriter reputation. *Journal of Finance, 40,* 1045–1067.

Grinblatt, M., and Hwang, C. (1989). Signalling and the pricing of new issues. *Journal of Finance, 44,* 393–420.

Habib, M., and Ljungqvist, A. (2001). Underpricing and entrepreneurial wealth losses in IPOs: theory and evidence. *The Review of Financial Studies, 14,* 433–458.

James, C., and Weir, P. (1990). Borrowing relationships, intermediation, and the cost of issuing public securities. *Journal of Financial Economics, 28,* 149–171.

Jelic, R., Saadouni, B., and Briston, R. (2001). Performance of Malaysian IPOs: underwriters reputation and management earnings forecasts. *Pacific-Basin Finance Journal, 9,* 457–486.

Ljungqvist, A., and Wilhelm, W. (2003). IPO pricing in the Dot-com Bubble. *Journal of Finance, 58,* 723–752.

Loughran, T., and Ritter, J. (2002). Why don't issuers get upset about leaving money on the table in IPOs? *The Review of Financial Studies, 15,* 413–444.

Mohan, N., and Chen, C. (2001). Information content of lockup provisions in initial public offerings. *International Review of Economics and Finance, 10,* 41–59.

Paudyal, K., Saadouni, B., and Briston, R. (1998). Privatisation initial public offerings in Malaysia: initial premium and long-term performance. *Pacific-Basin Finance Journal, 6,* 427–451.

Reese, W. (1998). IPO *Underpricing, trading volume, and investor interest.* Available at: http://ssrn.com/abstract=115348

Ritter, J. (1987). The costs of going public. *Journal of Financial Economics, 19,* 269–281.

_____. (2003). Investment banking and securities issuance. In: G. Constantinides, M. Harris, and J. Stulz (Eds.), *Handbook of the economics of finance.* North-Holland: Elsevier Science B.V.

Ritter, J., and Welch, I. (2002). A review of IPO activity, pricing, and allocations. *Journal of Finance, 57,* 1795–1828.

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

Schenone, C. (2004). The effect of banking relationships on the firms's IPO underpricing. *Journal of Finance, 59,* 2903–2958.

Sun, Q., and Tong, W. (2002). Malaysia privatization: a comprehensive study. *Financial Management, 31,* 79–105.

Wan Hussin, W. N. (2001). *Going Public in Malaysia: an investigation into the roles of IPO profit guarantees and reverse take-overs*. Ph.D. Thesis, University of Warwick, England.

_____. (2002). *Investor protection mechanism and IPO valuation on the Kuala Lumpur Stock Exchange.* Available at: http://ssrn.com/abstract=321580

Wan Hussin, W. N., and Ripain, N. (2003). IPO profit guarantees and income smoothing. *Jurnal Analisis, 10,* 119–137.

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

Yong, O. (1997). Initial public offerings: the Malaysian experience 1990–1994. In: T. Bos, and T. Fetherston (Eds.), *Advances in the Pacific Basin Financial Markets 3.* Connecticut: JAI Press.

Yong, O., Yatim, P., and Sapian, R. Z. Z. (1999). Significance of board of listings and type of issue on the underpricing and aftermarket performance of Malaysian IPOs. *Capital Markets Review, 7,* 47–74.