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SIGNIFICANCE OF INVESTOR DEMAND, FIRM SIZE, OFFER TYPE AND OFFER SIZE ON THE INITIAL PREMIUM, FIRST-DAY PRICE SPREAD AND FLIPPING ACTIVITY OF MALAYSIAN IPOS

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ABSTRACT

This paper examines the significance of some ex-ante variables on the initial premium of Malaysian IPOs and the immediate aftermarket behavior of investors during the period January 2004 to December 2007. Overall, there is a positive relationship between investor demand and initial premium, but *only* the Main Board registers a strong relationship between the investor demand and flipping. Firm size is inversely related to initial premium, flipping activity and price spread. The existence of private placement in an IPO seems to induce a bandwagon effect which later results in high opening-day price spread and high flipping activities. Investor demand, in the absence of informed investors, results in a more divergent opinion regarding the true value of an IPO. Main Board, Second Board and non-private placement IPOs register a negative relationship between offer size and initial premium. In general, there is a significant negative relationship between offer size and flipping ratio.

Keywords: IPOs, IPO flipping; price spread; bandwagon effect; and size effect.

1. Introduction

In recent years, there has been an increasing interest in studying investors' aftermarket trading behavior in the Initial Public Offerings (IPOs), especially in the developed markets in the West. This interest is believed to have been prompted by the resurgence of behavioral finance. Behavioral finance surfaced in the 1990's due to the inability of the efficient market hypothesis (EMH) in explaining anomalies and the implications that investors' behavior have in determining the true value of an investment. From the perspective of the behavioral finance, every investor is considered unique and thus homogeneity of opinion is *not* possible. This means that every investor has a tendency to make a different estimate of expected return from his investment. Miller (1977) suggests that the difference in opinion, regarding the expected returns for the IPOs, is especially high due to the lack of information track records at time of the new issue. The importance of information and the implications of the existence of the informed and the uninformed groups have constituted a large portion of the IPO literatures in the past, such as Ibbotson (1975), Miller (1977), Baron (1982), Rock (1986), Beatty and Ritter (1986), Grinblatt and Hwang (1989), Ritter (1991), and Welch (1992). These studies usually model their research on the information asymmetries and they use ex-ante factors as proxies for pre-listing information on IPO quality that subsequently determine the IPO performance. It is usually argued that, since behavior is affected by the opinions or expectations formed after processing the information available, ex-ante variables can be used to gauge their ability in predicting the immediate aftermarket investors' behavior.

We can argue that, since behavior is driven by expectations and expectations are formed based on the information available to the prospective investors, studies based on some ex-ante information are therefore useful to the investors in helping them to formulate their investment decision in IPOs. Following this line of argument, we intend to study the relationship between four known ex-ante variables, i.e. over-subscription ratio (proxy for investor

demand), listing board (proxy for firm size and thus size effect), type of offer (private placement as proxy for informed investors versus other types of offer as proxy for uninformed investors, and thus information asymmetry hypothesis), and offer size (as a possible indicator for future flipping activities), and the initial premium of IPOs as well as the immediate aftermarket investors' behavior. In this study, flipping ratio and opening-day spread are used as proxy for the immediate aftermarket investors' behavior. Flipping refers to the immediate sale of IPOs when the issue begins trading. Fishe (2002) and Aggarwal (2003) note that both practitioners and academicians seem to condemn flipping as a detrimental activity because it tends to depress the early stage of the aftermarket performance of IPOs. It is suggested that investors with a new IPO will flip either based on superior information or opening trade performance. In our study, the opening-day spread (refers to the difference between the highest price and the lowest price during the first-day of trading) will capture the behavior on how the most optimistic and the most pessimistic investors assign the IPO value on the listing day. A high opening-day spread also indicates more diverse opinions among the investors and more diverse information received by the investors.

The motivation for this study is multi-dimensional. First, in Malaysia, none has studied the implications of opening-day spread in the IPO market. Past studies in Malaysia has dealt with issues such as underwriters' reputation (Jelic *et al.* 2001), proportion of IPO shares allocated to Bumiputra investors (How *et al.* 2007), privatization IPOs versus other IPOs (Paudyal *et al.* 1998), firm size (Yong 1996), over-subscription ratio (Yong 1996; Yong & Isa 2003; Yong 2007a), share lock-up (Wan-Hussin 2005), and the effect of regulations (Mohd 2007), and try to determine their relationship with the initial returns of Malaysian IPOs. Other issues are also examined, such as Mohamad *et al.* (1994b) who examine the accuracy of profit forecasts reported in prospectuses, and How *et al.* (2007) who examine the change in regulation in 1996 towards a market-based pricing mechanism, and its effect on the under-pricing of Malaysian IPOs. Studies on the long run performance of Malaysian IPOs have also been carried out, such as Dawson (1987), Wu (1993), Ismail *et al*. (1993), Mohamad *et al.* (1994a), Yong (1997), Nasir and Zin (1998) and Yong *et al.* (2001). A quite comprehensive review on research conducted on Malaysian as well as Asian IPOs can be found in Yong (2007b).

Secondly, studies on IPO flipping are also almost non-existent in Malaysia. A preliminary study by Nee *et al.* (2007), using 132 IPOs listed on the Main Board of the Kuala Lumpur Stock Exchange (KLSE) during the period of 1991 to 2003, find that offer size and initial premium have significant impacts on the flipping behavior, where higher initial premium encourages flipping activity and a bigger offer size discourages flipping. Our current study deals with all three listing boards of Bursa Malaysia, and the data are more recent, covering a period after 2003. Thirdly, in the U.S., studies on flipping activities are usually focused on the aftermarket stabilization activities of underwriters. While the U.S. underwriters usually stabilize the aftermarket through the active trading and the exercise of over-allotment options, such activity is not common or non-existent in the Malaysian market. Underwriters in the US market play the role of market maker in providing liquidity to offset downward price pressure due to flipping activities. In Malaysia, there are no such stabilization activities, but it is common for the major shareholders of IPO companies to commit themselves not to sell some staggered percentages of their shareholding during a lock-up period of usually three years after the IPO. The Securities Commission of Malaysia imposes this three-year moratorium on the disposal of shares held by the major shareholders in order to protect the interest of the minority shareholders. This means that Malaysian institutional arrangements are very much different from those in the U.S. In addition, Malaysian issuance

procedures usually occur under a fixed price offer system (unlike in the U.S. where book-building is the common mechanism) and underwriters are less able to interfere with the order flow in the aftermarket. Hence, in the absence of an underwriter's need to develop aftermarket liquidity, we expect different behavioral tendencies to affect investors' decision to flip in the aftermarket of Malaysian IPOs. Based on these differences in market arrangements, it is interesting to find out the difference, if any, in terms of flipping activities of Malaysian investors during an IPO.

Over-subscription ratio is defined as the number of times an IPO is over-demanded by the overall investors. For example, an over-subscription of 3 times indicates that, for every share of an IPO, there are 4 investors who apply for it. It is a proxy for investor demand. Studies on Malaysian IPOs, such as Ismail *et al.* (1993),Yong *et al*. (1999), and Yong (2007a) find that there is a positive relationship between over-subscription ratio and IPO initial return. A high over-subscription ratio indicates a high demand for a particular IPO which in turn reflects the confidence and the optimism that pre-IPO investors have on the new issue. As such, a positive relationship is expected between over-subscription ratio and proxies for investors' immediate aftermarket behavior.

In Malaysia the three listing boards, i.e. Main Board, Second Board and MESDAQ, represent three different sizes of companies where Main Board is considered to represent large and stable companies, Second Board is considered to represent medium-sized companies and MESDAQ is considered to represent small and risky companies. MESDAQ mainly lists small technology companies. The information on listing board enables us to determine whether size of company has anything to do with the initial premium of an IPO and the investors' immediate aftermarket behavior as represented by opening-day spread and flipping activities.

We divide type of offer into two main categories, namely private placement IPOs and non-private placement IPOs, where private placement refers to IPOs subscribed by institutional investors (considered to be informed investors), whereas the non-private placement IPOs are IPOs either in the category of public issue (the issuance of totally new shares where the company concerned has never issued any share before) or offer for sale (the issuance of shares previously owned by only a few investors), subscribed by mostly retail investors (considered to be uninformed investors). A high ratio between private placement and the overall new issue indicates the existence of a high proportion of informed investors subscribing a given IPO which should lead to lower initial premium but later gains momentum as retail investors get interested in the said IPO, and this phenomenon is called bandwagon effect. We hypothesize that the bandwagon effect will result in high opening-spread and more flipping activities due the increased number of investors with more diverse opinion on the true value of the IPO.

The offer size of an IPO is an indicator for future flipping activities. We hypothesize that a small offer size will contribute to speculative activities and thus will result in high flipping activities, whereas a large offer size will have a negative relationship with the flipping activities.

The rest of this paper is organized as follows. Following the introduction, a review of related past studies is presented. Section 3 describes the data and methodology. Section 4 presents the findings, and finally Section 5 summarizes and concludes the paper.

2. Review of Past Studies

Behavioral finance relies on the commonly accepted belief that an investor's behavior is not only affected by how well-informed he or she is but also by other psychological attributes or

factors. Golberg and Nitzsch (2001), for example, asserts that asset price and its movement is a mirror of the behavior of the participants in the market and this behavior is a reflection of the investor's interpretation of information and opinions formed after the interpretation. This means that the knowledge or information about an IPO will affect an investor's behavior and the overall investors' behavior will in turn affect the IPO market performance. Numerous researchers, such as Ibbotson (1975), Miller (1977), Baron (1982), Rock (1986), Beatty and Ritter (1986), Grinblatt and Hwang (1989), Ritter (1991), and Welch (1992), have presented theories and models based on information asymmetries in explaining IPO performance. Pre-listing information can signal an IPO quality, and these ex-ante factors or variables are found to have predictive power on IPO performance. Numerous researchers, such as Miller and Reilly (1987), Shultz and Zaman (1994), Ellis *et al.* (2000) and Aggarwal (2003), have examined the relationship between initial return (initial premium or under-pricing) of IPOs and flipping or aftermarket trading volume (as a proxy for flipping). They document a positive relationship between flipping or initial aftermarket trading volume and IPO initial return.

Among the various immediate aftermarket activities, the flipping behavior in the immediate aftermarket has become the primary focus in studies related to the aftermarket trading of IPOs. Flipping refers to the sale of shares acquired in an IPO within a short period after listing, and in Australia flipping is better known as "stagging" (Bayley *et al.* 2006). Flipping is meant for a quick gain and at the same time it is supposed to provide liquidity to the IPOs' initial aftermarket trading. According to Booth and Chua (1996), flipping provides aftermarket liquidity, which may decrease the cost of trading and lower the issuing firm's cost of capital. Aside from providing liquidity, excessive flipping can be detrimental to the performance of the new listings. In fact, as part of the effort to protect minority shareholders' interest in Malaysia, the Securities Commission has imposed a moratorium (or lock-up provision) to prohibit substantial shareholders (who are usually the promoters of the IPOs) from disposing their shares immediately after the listing of the stocks. They can only dispose off their shares in a staggered basis over a specified period of time, usually over a period of three years (Wan-Hussin 2005).

Krigman *et al.* (1999), using a sample of 1,232 large-capitalization IPOs for a period from 1988 to 1995, examine underwriters' pricing errors and the predictive power of flipping. They find that underwriter's pricing errors is intentional. They also find that larger offerings recorded a higher flipping activity, and initial return is negatively associated with institutional flipping activities. On the other hand, Aggarwal (2003), using a sample of 617 IPOs for a period from May to June 1998, finds that hot IPO are flipped more than the cold IPO which means that there is a positive relationship between flipping and initial return.

A recent study on IPO flipping activities in Australia by Bayley *et al.* (2006) finds that under-priced IPOs are flipped more than the over-priced IPOs. In addition, flipping behavior of informed investors is unrelated to long-run returns, and uninformed investors consistently flipped more of the IPOs that have better long-run returns than the informed investors (i.e., the institutional investors). This finding is in contradiction with the finding of Krigman *et al.* (1999) which documents that institutional investors flip more of the IPOs which performed worse in the long-run. Bayley *et al.* also find that there is a negative relationship between firm size and flipping.

3. Data and Methodology

The sample for this study comprised of all IPOs listed on the three listing boards of Bursa Malaysia from January 2004 to December 2007. However, since the most popular mechanism

for pricing IPOs in Malaysia is fixed-price offer, only IPOs using this mechanism are included in this study. This means that IPOs that use book building, which is very popular in the US, are excluded; however, their number is less than five, which is not that significant. Altogether, 219 IPOs are used in the current study. January 2004 is chosen as the beginning of this study in line with the change of name of the Malaysian stock exchange from Kuala Lumpur Stock Exchange to Bursa Malaysia beginning in January 2004. In addition, private placement IPOs have become increasingly popular in recent years, and since 2004 they are included in a separate section called "private placement," apart from the regular "offer for sale" and "public offer" sections of information on IPO listing provided by the Bursa Malaysia on its website. The information used in this study is compiled from Bursa Malaysia website (http://www.bursamalaysia.com) and the Star Online website (http://biz.thestar.com.my/marketwatch/ipo). Information on over-subscription ratio is compiled from various newspapers' reports, as made available on the BiznewsDatabank website(http://www.biznewsdb.com).

Analyses on the initial premium as well as the investors' immediate aftermarket behavior will be made based on the over-subscription ratio, listing board, type of offer and offer size of IPOs. Initial premium is defined as the percentage change in price from the offer price to the opening price on the first day of trading. It is the first pricing indictor available on the first-trading day. We proxy investors' immediate aftermarket behavior as: (1) the first-day opening-day-spread; and (2) the first-day flipping ratio. Opening-day spread is defined as the difference between day high and day low on the first trading day. However, for the purpose of comparison, we introduce the following measure of opening-day day spread:

[(high price – low price)/offer price] x 100%,

which is the ratio of the opening-day spread over its offer price. This ratio reflects the degree of spread (or divergence of opinions among investors regarding the true value of the IPO) as compared to its offer price.

Opening-day flipping ratio is defined as the percentage of opening day trading volume divided by the number of shares offered on the first trading day as proposed by Miller and Reilly (1987) and Aggarwal, (2003). For comparison, Bayley *et al.* (2006) define flipping as the liquidation of IPO allocation in the first three days after the listing. Since initial performance is postulated to have a positive impact on flipping ratio as suggested by Krigman *et al.* (1999), a positive relationship is expected between initial premium and flipping ratio.

Over-subscription ratio is defined as the number of times an IPO is over-demanded by the overall investors. For example, an over-subscription of 3 times indicates that, for every share of an IPO, there are 4 investors who apply for it. Studies on Malaysian IPOs, such as Ismail *et al.* (1993) and Yong and Isa (2003), find that there is a positive relationship between over-subscription ratio and IPO initial return. A higher subscription ratio reflects the confidence and the optimism that pre-IPO investors have on the new issues. As such, a positive relationship is expected between over-subscription ratio and proxies for investors' immediate aftermarket behavior.

Listing boards refer to the three Bursa Malaysia's listing boards, i.e. Main Board, Second Board and MESDAQ. These three listing boards represent three different sizes of companies, where Main Board is considered to represent large and stable companies, Second Board is considered to represent medium-sized companies and MESDAQ is considered to represent small and risky companies. MESDAQ mainly lists relatively small technology stocks.

We divide type of offer into two main categories, namely private placement IPOs and non-private placement IPOs, where private placement refers to IPOs subscribed by

institutional investors (considered to be informed investors), whereas the non-private placement IPOs are IPOs either in the category of public issue or offer for sale, subscribed by mostly retail investors (considered to be uninformed investors). The offer for sale refers to shares that have already been issued to the original stockholders, who in turn offer their shares for sale to the public. As such, there is no change in the company's paid-up capital; the money received from the sale of the stock does not go to the company. Its purpose is to restructure the company's ownership distribution in line with the government's rules and regulations. Public issue refers to new shares of stock offered to the public for the first time; as such, it results in an increase in the paid-up capital of the company concerned. Current study does not specifically focus on these two types of IPOs since most past studies (such as Yong and Isa (2003)) have dealt with this issue. Private placement, as suggested by its name, refers to the sale of IPOs *directly* to institutional investors. In actuality, the institutional investor is the opposite of the individual investor, or retail investor as commonly referred to in Malaysia. Private placement has become increasingly popular since 2001, and since 2004 it is included in its own separate section called "private placement," apart from the regular "offer for sale" and "public offer" sections of information on IPO listing provided by the Bursa Malaysia on its website (http://www.bursamalaysia.com/website/listing/ipo), and this is another reason why 2004 is chosen as the beginning year for this study..

In cases where the offer price for retail investors is different from the offer price for institutional investors, which is a very rare occurrence, a "weighted" average offer price is used. In a nutshell, the weighted-average offer price is calculated as the total proceeds (from both the retail investors and the institutional investors) divided by the total units of shares issued (to both group of investors).

Information on private placement enables us to differentiate between the number of IPOs allocated to institutional investors and those allocated to individual investors (or retail investors as they are commonly known in Malaysia). Information on the proportion of IPOs subscribed by the individual investors as opposed to the proportion of IPOs subscribed by the institutional investors will enable us to the test the winner's curse hypothesis. As suggested by Rock (1986), with fixed-price IPOs, the uninformed investors (or retail investors) always face a winner's curse, that is, they get all of the shares which they ask for because the informed investors (or institutional investors) do not want them. Thus, face with this adverse selection problem, the uninformed investors will only buy if IPOs are under-priced to compensate them for the bias in the IPO allocation. We hypothesize that the larger the proportion of IPOs subscribed by the retail investors, the bigger is the level of IPO under-pricing.

Information on the proportion of IPOs subscribed by the institutional investors, via private placement, will also enable us to test the bandwagon effect. According to Welch (1992), bandwagon effects may develop if potential investors pay attention not only to their own information about a new issue, but also to whether other investors are purchasing. In this case other investors are the informed investors or the institutional investors. If an investor sees that no one else wants to buy, he may not buy even when he possesses favorable information. In order to prevent this situation from happening, an issuer may have to under-price the IPO to induce the first few potential buyers, and later induce a cascade in which all subsequent investors want to buy irrespective of their own information. A high ratio between private placement and the overall new issue indicates the existence of a high proportion of informed investors subscribing a given IPO which should lead to lower initial premium but later gains momentum as retail investors get interested in the said IPO, i.e., the bandwagon effect. We hypothesize that the bandwagon effect will result in high opening-spread and

more flipping activities due the increased number of investors with more diverse opinion on the true value of the IPO.

Size of offer is defined as total amount of shares floated in a particular offering. It can be measured using the gross proceeds of issues. Size of offer is a proxy for firm size. According to Ritter (1984), smaller issues are more likely to be subjected to speculative forces and as a result, ex-ante uncertainty is expected to be greater for smaller firms. Krigman *et al.* (1999), however, report that larger deals of offerings recorded a higher institutional flipping. In Malaysia, consistent with Ritter (1984), Corhay *et al.* (2002) report a negative relationship between size of offer and market return. In line with the argument that smaller firm is subject to higher uncertainty and higher uncertainty in turn will generate greater differences in opinion, therefore, a negative relationship is expected for size of offer.

4. Findings

4.1. *Descriptive statistics*

Table 1 presents a summary of the characteristics of 219 IPOs used in this study, for the period January 2004 through December 2007. The average initial return is 27.77%, with the minimum initial return of –66.67% and the maximum initial return of 275.00%. This average initial return (offer-to-open) is substantially lower than the figure 72.85% reported by Yong (1997) and the figure 94.91% reported by Yong and Isa (2003). This average is also substantially lower than the average initial return (offer-to-close) reported in earlier studies (166.7% as reported by Dawson (1987); 167.4% reported by Yong (1991); 114.6% reported by Ismail *et al.*(1993); 80.3% by Loughran *et al.*(1994); and 75.03% reported by Yong (1997).

Table 1: Descriptive statistics of initial return, over-subscription ratio, number of shares issued, offer price and size of offer, for the period January 2004 to December 2007

	Mean	Std. Dev.	Min.	Max.
Initial return (%)	27.77	44.75	-66.67	275.00
Over-subscription ratio (times)	39.12	55.07	-0.30[@]	377.96
Number of shares issued (million)	61.00	101.70	3.71	700.00
Offer price (RM)	0.81	0.54	0.17	3.00
Size of offer (RM million)	58.00	35.36	0.84	980.00

Notes: 1) Sample size, n=219
2) [@] An under-subscription of 30%, or subscribed by only 70% of the overall issue.

The average over-subscription ratio is 39.12 times, with a minimum over-subscription ratio of –0.3 and a maximum value of 377.96 times. This average is lower than the figure 46 times reported independently by Dawson (1987) and Yong (1991), and the figure 43.71 times reported by Yong and Isa (2003), but higher than the figure 32.3 times reported by Yong (1997). This average is almost twice the figure 22.03 times reported by Yong (2007a) for the period between 1999 and 2003, a period following the 1997 Asian financial crisis. This high average over-subscription ratio is indicative of the renewed popularity of IPOs among investors in Malaysia after the 1997 financial crisis that hit Asia. During the period of this

study, the average number of shares issued is 61 million, the average offer price is RM0.81, and the average offer size is RM58 million.

4.2. *Initial premium, opening-day flipping ratio and opening-day price spread according to offer type and listing board*

Table 2 presents the characteristics of initial premium, opening-day flipping ratio, and opening-day price spread according to offer type and listing board, for the period 2004-2007. As shown in Panel A, there are 125 private placement IPOs, with an average initial premium, as measured by the initial return (offer-to-open), of 27.64%. Non-private placement IPOs contributes 94 of the total 219 IPOs for the period, with an average initial premium of 27.94%. The t-statistic value of -0.049 (the corresponding *p*-value of 0.961) indicates that there is no significant difference between the average initial premium of 27.64% for the private placement IPOs and the average of 27.94% for the non-private placement IPOs. This result seems to indicate that the uninformed investors (retail investors or the general public) do demand a slightly higher (but not significant) premium when the informed investors (as indicated by the presence of private placement offers) are not present; this finding does not seem to support the winner's curse argument.

Table 2: Characteristics of initial premium, flipping ratio, and opening-day price spread according to offer type and listing board, for the period 2004-2007

		Initial Premium		Opening-day Flipping Ratio		Opening-day Price Spread	
	n	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Panel A: *Offer Type*							
Private Placement	125	27.64%	48.51%	85.51%	82.43%	29.48%	38.05%
Non-Private Placement	94	27.94	39.45	66.71	78.67	18.20	16.33
Result of Independent t-Test#		t=-0.049, *p*=0.961		t=1.703, *p*=0.090		t@=2.971, *p*=0.003	
Panel B: *Listing Board*							
Main Board	57	18.31	23.84	33.89	32.65	13.58	10.62
Second Board	60	21.93	34.93	86.46	91.28	17.12	24.30
MESDAQ	102	36.48	56.10	96.48	85.35	35.23	38.30
Result of F-test##		F=3.815, *p* =0.024		F=12.584, *p* =0.000		F=12.443, *p* =0.000	

Notes: 1) # Independent t-test between average initial returns (offer-to-open) of private placement IPOs and the non-private placement IPOs.
2) ## Result of F-test among the three groups, i.e., the three listing boards.
3) @ Equal variances not assumed, based on the Levene's test for equality of variances.

As shown in Panel A of Table 2, the mean opening-day flipping ratio for private placement IPOs is 85.51% as opposed to 66.71% for non-private placement IPOs. Even though the difference is not significant at the 5% level, the result seems to suggest that there is a higher level of flipping activity when private placement is involved in an IPO. The mean opening-day price spread is 29.48% for private placement IPOs, and 18.20% for non-private placement IPOs. As indicated by the t-statistic of 2.971 (and the corresponding p-value of 0.003), the average opening-day price spread for private placement IPOs is significantly higher then the average for non-private placement IPOs. This result is somewhat consistent with the flipping activity; it seems to suggest that higher flipping activity goes hand in hand

with investors' greater divergence of opinion about the true value of an IPO as shown by the bigger opening-day price spread. Initially we argue that a high ratio between private placement and the overall new issue indicates the existence of a high proportion of informed investors subscribing a given IPO which should lead to lower initial premium but later gains momentum as retail investors get interested in the said IPO, and this phenomenon is called bandwagon effect. We thus hypothesize that the bandwagon effect will result in high opening-spread and more flipping activities due the increased number of investors with more diverse opinion on the true value of the IPO. With regard to opening-day flipping ratio and price spread, our results on private placement IPOs versus non-private placement IPOs, do indeed *confirm* our line of argument.

Panel B presents the average initial premiums, as measured by the initial return (offer-to-open), based on the board of listing. Main Board registers the lowest initial premium of 18.31%, and MESDAQ records the highest average of 36.48%. Second Board registers the middle average of 21.93%. On Bursa Malaysia, Main Board represents big companies, in relation to those companies listed on the Second Board, whereas small and speculative (usually technology stocks) companies are listed on MESDAQ. The result of the F-test on the differences among these averages is significant at the 5% level. This means that the smaller the company the greater is its required initial premium because of its perceived higher risk. This finding supports the size effect hypothesis on IPOs. However, these average initial returns are very much lower than those reported by Yong and Isa (2003) or Yong (2007a). Yong and Isa report an average initial return (offer-to-open), for period 1990-1998, of 80.02% for 183 IPOs listed on the Main Board, and 104.22% for 288 IPOs listed on the Second Board of the then Kuala Lumpur Stock Exchange (KLSE). Yong reports an average initial return (offer-to-open), for period 1999-2003, of 22.22% for 64 IPOs listed on the Main Board, and 42.07% for 95 IPOs listed on the Second Board, and 61.39% for 26 IPOs listed MESDAQ.

Results shown in Panel B of Table 2 clearly show that listing board has very significant impact on the way investors react toward an IPO. MESDAQ registers the highest average initial premium of 36.48%, the highest opening-day flipping ratio of 96.48% and the highest opening-day price spread of 38.30. The lowest figures are registered by the Main Board. MESADQ, being the listing board for small and technology stocks, is considered the most risky and thus investors seems to demand the highest initial premium, and speculative activity, as shown by the high flipping activity during its first trading day, is also very common. Divergence of opinions among investors regarding the true value of an IPO is the highest for IPOs listed on MESDAQ, as indicated by the highest average opening-day price spread of 35.23%; in fact this figure is twice as much as the figure for the IPOs listed on the Second Board.

As shown in Panel B of Table 2, the mean flipping ratio is the lowest for IPOs listed on the Main Board with an average of 33.89%, and the highest is for IPOs listed on MESDAQ with an average of 96.48%. The finding is an early indication of the negative relationship between firm size and flipping activity, or put another way, the smaller the company the higher is the flipping ratio. This is consistent with Bayley *et al.* (2006) who find that, in the case of Australian IPOs, there is a negative relationship between firm size and flipping.

4.3. *Correlation between ex-ante variables and the initial premium and the immediate aftermarket investors' behavior, according to listing board and type of offer*

Table 3 presents the correlations between ex-ante variables (i.e., over-subscription ratio and natural log of offer size) and initial premium, according to listing board and offer type. It also presents the correlations between the ex-ante variables and the immediate aftermarket investors' behavior (i.e., opening-day flipping ratio and opening-day price spread).

Table 3: Correlations between ex-ante variables[#] and initial premium, and correlations between ex-ante variables and the immediate aftermarket investors' behavior,[##] according to listing board[@] and type of offer[@@]

	n	Initial premium	Flipping ratio	Opening-day price spread
Panel A: *Main Board*				
Over-subscription ratio	57	0.489** (0.000)	0.433**(0.001)	0.209 (0.119)
ln of offer size	57	-0.339**(0.010)	-0.427**(0.000)	-0.184 (0.171)
Panel B: *Second Board*				
Over-subscription ratio	60	0.347** (0.007)	0.221 (0.089)	0.217 (0.096)
ln of offer size	60	-0.342**(0.008)	-0.362**(0.005)	0.026 (0.846)
Panel C: *MESDAQ*				
Over-subscription ratio	102	0.424** (0.000)	-0.019 (0.852)	0.196*(0.048)
ln of offer size	102	0.116 (0.247)	-0.467**(0.000)	0.148 (0.137)
Panel D: *Private-placement IPOs*				
Over-subscription ratio	125	0.354 **(0.000)	0.004 (0.962)	0.205*(0.022)
ln of offer size	125	0.121 (0.180)	-0.487**(0.000)	0.063 (0.482)
Panel E: *Non-private placement IPOs*				
Over-subscription ratio	94	0.575** (0.000)	0.322** (0.002)	0.643**(0.000)
ln of offer size	94	-0.370**(0.000)	-0.444**(0.000)	-0.156 (0.133)
Panel F: *All IPOs combined*				
Over-subscription ratio	219	0.438**(0.000)	0.144*(0.033)	0.277**(0.000)
ln of offer size	219	-0.113 (0.096)	-0.459**(0.000)	-0.040 (0.556)

Notes:

1) [#] These ex-ante variables are the over-subscription ratio (proxy for investor demand), and offer size (as a possible indicator for future flipping activities).

2) [##] The immediate aftermarket investors' behavior refers to the flipping ratio and the opening-day price spread.

3) [@] Listing board refers to the three listing boards on Bursa Malaysia, i.e., Main Board, Second Board and MESDAQ.

4) [@@]Type of offer refers to the two classifications of IPOs used in this study, i.e., private placement IPOs and non-private placement IPOs.

5) * Significant at the 5% level.

6) ** Significant at the 1% level.

7) *p*-values are shown in the parentheses.

Panel A through Panel F of Table 3 clearly show that over-subscription ratio is a variable that consistently and significantly correlates with the initial premium; this finding confirms earlier conclusion made by Ismail *et al.* (1993) and Yong et al (1999), who both find that a positive relationship between over-subscription ratio and IPO initial return. The positive correlation indicates that the higher the demand for an IPO, the higher is the initial premium of the IPO, regardless of the board of listing and the type of IPO. This finding is also in line with results reported by Yong and Isa (2003) who find that, based on stepwise regression analyses, over-subscription ratio contributes significantly (on a consistent basis) to the initial return (i.e., initial premium) of Malaysian IPOs for the period 1990 to 1998. Yong (2007a) reconfirms the findings of Yong and Isa for the period 1999 to 2003.

Results of correlations between over-subscription ratio and opening-day flipping ratio are mixed. Among the three listing boards, only Main Board registers a positive and significant correlation at the 1% level, and for type of offer, only non-private placement IPOs registers a significant positive correlation, also at the 1% level. For the Main Board the correlation is 0.433, which is quite high, that indicates a strong relationship between the demand for an IPO and its future opening-day flipping activity. For the non-private placement IPOs, the correlation is 0.322, which is also quite high. When all IPOs are combined, the correlation between oversubscription ratio and opening-day flipping ratio is 0.144, which is significant at the 5% level.

Results of correlations between over-subscription ratio and opening-day price spread indicate that listing board is not a significant factor that can explain the opening-day price spread; this means that the investor demand does not have any significant relationship with the divergence of opinion regarding the true value of an IPO listed on any one particular listing board. Only in the case of MESDAQ, the correlation is significant at the 5% level, with a correlation of 0.196.

In the case of offer type, both correlations are significant, with the non-private placement IPOs having a very significant correlation of 0.643 (significant at the 1% level), and the private-placement IPOs having a significant correlation (at the 5% level) of 0.205. The findings indicate that investor demand, in the absence of informed investors (as in the case of non-private placement IPOs), results in a more divergent opinion regarding the true value of an IPO.

Both Main Board and Second Board register negative correlations between offer size and initial premium; the same is also true for the non-private placement IPOs. For the Main Board, the correlation is -0.339, for the Second Board the correlation is -0.342, and for the non-private placement IPOs the correlation is -0.370. These correlations are all significant at the 1% level. The negative correlation indicates that the bigger the offer size for these two listing boards and the non-private placement IPOs, the smaller is the initial premium. For comparison, Corhay *et al.* (2002) report a negative relationship between size of offer and market return for Malaysian IPOs. For both MESDAQ and the private placement IPOs, even though the correlation is not significant, the direction of the relationship is positive.

We initially argue that offer size is an indicator for future flipping activities, where a small offer size will contribute to speculative activities and thus will result in high flipping activities, whereas a large offer size will have a reversed effect. All the correlations between offer size and opening-day flipping ratio, for all listing boards and for all types of offer, are negative and significant at the 1% level. This means that, regardless of the listing board and the type of offer, offer size is a variable that correlates well (in a negative direction) with future flipping activities. This finding confirms our initial hypothesis. The finding is also consistent with the results shown in Panel B of Table 2 where flipping ratio is inversely

related to firm size (as represented by the listing board), and consistent with finding of Bayley *et al.* (2006) on Australian IPOs where there is a negative relationship between firm size and flipping.. This finding, however, contradicts the finding of Krigman *et al.* (1999) on US IPOs where they find larger offerings result in a higher flipping activity.

With regard to opening-day price spread, none of the correlations between offer size and the price spread is significant at even the 5% level. The directions of the relationship, even though not significant, are mixed; for example for Main Board and non-private placement IPOs the relationship is negative, but positive for other listing boards and private-placement IPOs. This finding indicates that offer size is not a significant factor that can explain the divergence in opinion among investors regarding the true value of an IPO.

4.4. *Correlation between initial premium and the immediate aftermarket investors' behavior, according to over-subscription ratio, listing board, offer type and offer size*

Table 4 shows the correlations between initial premium and the immediate aftermarket investors' behavior (namely the opening-day flipping ratio and price spread), according to over-subscription ratio, listing board, type of offer and offer size. With regard to over-subscription ratio, we classify the ratios into two classes, namely ratios with values less than the median of 18.41 times, and the ratios with values greater than the median. None of the correlations indicates a significant relationship between the initial premium and the opening-day flipping activity. However, there is a strong positive relationship (a correlation of 0.755 for the class of less than median (smaller class), and a correlation of 0.362 for the class of more than median (bigger class), where both correlations are significant at the 1% level) between the initial premium and the opening-day price spread for both classes. However, as indicated by the two correlation values, the correlation for smaller class is twice as much as the correlation for bigger class. This finding indicates that initial premium correlates positively with investors' divergence in opinion regarding the true value of an IPO, especially in the case of low investor demand IPOs.

With regard to listing board, offer type and offer size, all correlations between initial premium and opening-day price spread are significant at the 1% level. In the case of offer type, the correlation between initial premium and price spread for private placement IPOs is nearly twice as much as the correlation for non-private placement IPOs (the correlation is 0.624 for private-placement IPOs and 0.399 for non-private placement IPOs), which is somewhat similar to the over-subscription ratio.

From the results shown in Table 4, we can conclude that initial premium has a strong relationship with the opening-day price spread for all four ex-ante variables. However, initial premium does have a strong relationship with the opening-day flipping activity *only* in cases of non-private placement IPOs, big offer size (offer size bigger than median) and big companies (IPOs listed on the Main Board). For comparison, in the case of US IPOs, Ellis *et al.* (2000) find a positive relationship between immediate aftermarket trading volume and IPO initial premium.

Table 4: Correlation between initial premium and the immediate aftermarket investors' behavior,[#] by over-subscription ratio, listing board, offer type and offer size

	n	Opening-day flipping ratio	Opening-day price spread
Panel A: *According to over-subscription ratio*			
Less than median[@]	109	-0.021	0.755**
		(0.831)	(0.000)
More than median	109	0.172	0.362**
		(0.074)	(0.000)
Panel B: *According to listing board*			
Main Board	57	0.327*	0.678**
		(0.013)	(0.000)
Second Board	60	0.117	0.551**
		(0.374)	(0.000)
MESDAQ	102	0.043	0.513**
		(0.665)	(0.000)
Panel C: *According to offer type*			
Private placement	125	-0.074	0.624**
		(0.411)	(0.000)
Non-private placement	94	0.456**	0.399**
		(0.000)	(0.000)
Panel D: *According to offer size*			
Less than median[@@]	109	-0.028	0.518**
		(0.773)	(0.000)
More than median	109	0.260**	0.559**
		(0.006)	(0.000)
Panel E: *All IPOs combined*			
Overall	219	0.119	0.549**
		(0.078)	(0.000)

Notes:
1) [@] The median for over-subscription ratio is 18.41 times.
2) [@@] The median for offer size is RM19.560 million.
3) [#] The immediate aftermarket investors' behavior refers to the opening-day flipping ratio and the opening-day price spread.
4) * Significant at the 5% level.
5) ** Significant at the 1% level.
6) *p*-values are shown in the parentheses.

4.5. *Results of step-wise regressions of the immediate aftermarket investors' behavior on ex-ante variables (the over-subscription ratio, offer type and natural log of offer size), by board of listing*

Table 5 presents the results of step-wise regressions of the immediate aftermarket investors' behavior on some ex-ante variables, according to listing board. Panel A reports the results for opening-day flipping ratio, whilst Panel B reports the results for opening-day price spread. As shown in Panel A, for Second Board and MESDAQ, *only* offer size can explain the flipping activity; the negative sign of the coefficient indicates that the bigger the offer size, the smaller is the level of flipping activities. For the Main Board, the variable that can best explain the flipping activity is the over-subscription ratio; the positive sign of the coefficient indicates that the higher the ratio of over-subscription, the higher is the level of flipping activity.

Adjusted R^2 for the model developed for each type board ranges from the low 0.116 (in the case of the Second Board) to the high 0.210 (in the case of MESDAQ). When all boards are combined, again offer size is the only variable that can explain the level of opening-day flipping activity, with an adjusted R^2 of 0.207.

Table 5: Regressions (step-wise) of the immediate aftermarket investors' behavior,[#] on ex-ante variables, [##] by board of listing

Listing Board	n	Parameter estimates: Constant	Over-subscrip-tion ratio	Offer type	*ln* of offer size	Adjusted R^2	F-value	Durbin-Watson[@] statistic
Panel A: *Opening-day flipping ratio*								
Main Board	57	20.675	0.628			0.173	12.718	2.103
		(0.000)	(0.001)				(0.001)	
Second Board	60	915.208			-48.458	0.116	8.733	1.838
		(0.002)			(0.005)		(0.005)	
MESDAQ	*102*	*1139.014*			*-60.618*	*0.210*	*27.903*	*1.951*
		(0.000)			(0.000)		(0.000)	
Overall	219	824.798			-42.931	0.207	57.961	1.919
		(0.000)			(0.000)		(0.000)	
Panel B: *Opening-day price spread*								
Main Board	57		-- no significant relationship exists --					
Second Board	60		-- no significant relationship exists --					
MESDAQ	*102*	*28.622*	*0.117*			*0.029*	*4.014*	*2.001*
		(0.000)	(0.048)				(0.048)	
Overall	219	11.056	0.164	12.532		0.108	14.239	1.943
		(0.001)	(0.000)	(0.002)			(0.000)	

Notes:

1) [#]The immediate aftermarket investors' behavior refers to flipping ratio and opening-day price spread.
2) These ex-ante variables are the over-subscription ratio (proxy for investor demand), type of offer (private placement as proxy for informed investors versus other types of offer as proxy for uninformed investors, and thus information asymmetry hypothesis), and offer size (as a possible indicator for future flipping activities). Listing board is another ex-ante variable (proxy for company size and thus size effect). Only significant variables are reported in this table.
3) *p-values* are shown in the parentheses.
4) [@] Durbin-Watson test for auto-correlation of the residuals with the null hypothesis that the autocorrelation is zero against the alternative hypothesis that the auto-correlation is greater than zero; this test is a one-sided or one-tailed test. *None* of the Durbin-Watson statistics indicates rejection of the null hypothesis at the 1% level.

As shown in Panel B, no significant relationship exists between the ex-ante variables and the opening-day price spread for Main Board and Second Board, and for MESDAQ, *only*

over-subscription ratio can explain the opening-day price spread, with an adjusted R^2 of 0.029. When all boards are combined, over-subscription ratio and offer type are two variables that can explain the level of opening-day price spread, with an adjusted R^2 of 0.108. The Durbin-Watson *statistics* indicate that all the models are free from the problem of auto-correlation in the residuals at the 1% level.

5. Summary and Conclusions

This paper examines the significance of investor demand, firm size, type of offer and offer size of Malaysian IPOs on the initial premium and the immediate aftermarket behavior of investors. We use the first-day trading spread and the first-day flipping activities as proxies for the investors' immediate aftermarket behavior. The study cover all IPOs listed on the three listing boards of Bursa Malaysia during the period of January 2004 to December 2007. Analyses on the initial premium as well as the investors' immediate aftermarket behavior are made based on the over-subscription ratio, listing board, type of offer and offer size of IPOs.

Our initial results seem to indicate that the uninformed investors (retail investors or the general public) do demand a slightly higher (but not significant) premium when the informed investors (as indicated by the presence of private placement offers) are not present; this finding does not seem to support the winner's curse argument. However, our result seems to suggest that there is a higher level of flipping activity when private placement is involved in an IPO. Our finding also seems to suggest that higher flipping activity goes hand in hand with investors' greater divergence of opinion about the true value of an IPO as shown by the bigger opening-day price spread. We initially argue that a high ratio between private placement and the overall new issue indicates the existence of a high proportion of informed investors subscribing a given IPO which should lead to lower initial premium but later gains momentum as retail investors get interested in the said IPO, a phenomenon called bandwagon effect. We thus hypothesize that the bandwagon effect will result in high opening-spread and more flipping activities due the increased number of investors with more diverse opinion on the true value of the IPO. With regard to opening-day flipping ratio and price spread, our results on private placement IPOs versus non-private placement IPOs, do indeed *confirm* our line of argument.

Our findings also suggest that the smaller the company the greater is its required initial premium because of its perceived higher risk, which support the size effect hypothesis on IPOs. MESDAQ registers the highest average initial premium, the highest opening-day flipping ratio and the highest opening-day price spread. The lowest figures are registered by the Main Board. MESADQ, being the listing board for small and technology stocks, is considered the most risky and thus investors seems to demand the highest initial premium, and at the same time the highest level of speculative activity, as shown by the high flipping activity during its first trading day. Divergence of opinions among investors regarding the true value of an IPO is also the highest for IPOs listed on MESDAQ. The mean flipping ratio is the lowest for IPOs listed on the Main Board and the highest is for IPOs listed on MESDAQ, which is an early indication of the negative relationship between firm size and flipping activity, similar to finding of Bayley *et al.* (2006) on Australian IPOs.

The results of correlation between over-subscription ratio and initial premium indicate that over-subscription ratio is a variable that consistently and significantly correlates (positively) with the initial premium, which confirms conclusion made in earlier studies by Ismail *et al.* (1993) and Yong et al (1999), who both find that a positive relationship between over-subscription ratio and IPO initial return. The positive correlation indicates that the higher the demand for an IPO, the higher is the initial premium of the IPO, regardless of the board of

listing and the type of IPO. This finding is also in line with results reported by Yong and Isa (2003) who find that, based on stepwise regression analyses, over-subscription ratio contributes significantly (on a consistent basis) to the initial return (i.e., initial premium) of Malaysian IPOs for the period 1990 to 1998. Yong (2007a) reconfirms the findings of Yong and Isa for the period 1999 to 2003.

Results of correlations between over-subscription ratio and opening-day flipping ratio are mixed. Among the three listing boards, only Main Board registers a positive and significant correlation and for type of offer, only non-private placement IPOs registers a significant positive correlation. For the Main Board the correlation is quite high, that indicates a strong relationship between the demand for an IPO and its future opening-day flipping activity. For the non-private placement IPOs, the correlation is also quite high.

Results of correlations between over-subscription ratio and opening-day price spread indicate that listing board is not a significant factor that can explain the opening-day price spread; this means that the investor demand does not have any significant relationship with the divergence of opinion regarding the true value of an IPO listed on any one particular listing board. In the case of offer type, both correlations are significant, with the non-private placement IPOs having a very significant correlation of more than three times that of the private-placement IPOs, which indicate that investor demand, in the absence of informed investors (as in the case of non-private placement IPOs), results in a more divergent opinion regarding the true value of an IPO.

Both Main Board and Second Board register negative correlations between offer size and initial premium; the same is also true for the non-private placement IPOs. The negative correlation indicates that the bigger the offer size for these two listing boards and the non-private placement IPOs, the smaller is the initial premium. Corhay *et al.* (2002) also report a negative relationship between size of offer and market return for Malaysian IPOs.

We initially argue that offer size is an indicator for future flipping activities, where a small offer size will contribute to speculative activities and thus will result in high flipping activities, whereas a large offer size will have a reversed effect. All the correlations between offer size and opening-day flipping ratio, for all listing boards and for all types of offer, are negative and significant, which is consistent with finding of Bayley *et al.* (2006) on Australian IPOs where there is a negative relationship between firm size and flipping, but contradicts the finding of Krigman *et al.* (1999) on US IPOs where they find larger offerings result in a higher flipping activity.

With regard to opening-day price spread, none of the correlations between offer size and the price spread is significant. This finding indicates that offer size is not a significant factor that can explain the divergence in opinion among investors regarding the true value of an IPO.

We find that there is no significant relationship between the initial premium and the opening-day flipping activity, but we find that the initial premium correlates positively with investors' divergence in opinion regarding the true value of an IPO, especially in the case of low investor demand IPOs. With regard to listing board, offer type and offer size, all correlations between initial premium and opening-day price spread are significant. In the case of offer type, the correlation between initial premium and price spread for private placement IPOs is nearly twice as much as the correlation for non-private placement IPOs, which is somewhat similar to the over-subscription ratio. We also find that the initial premium has a strong relationship with the opening-day price spread for all four ex-ante variables. However, initial premium does have a strong relationship with the opening-day flipping activity *only* in cases of non-private placement IPOs, big offer size (offer size bigger

than median) and big companies (IPOs listed on the Main Board). For comparison, in the case of US IPOs, Ellis *et al.* (2000) find a positive relationship between immediate aftermarket trading volume and IPO initial premium.

The results of step-wise regressions of the immediate aftermarket investors' behavior on some ex-ante variables suggest that for Second Board and MESDAQ, *only* offer size can explain the flipping activity, and the negative sign of the coefficients indicate that the bigger the offer size, the smaller is the level of flipping activities. For the Main Board, the variable that can best explain the flipping activity is the over-subscription ratio; the positive sign of the coefficient indicates that the higher the ratio of over-subscription, the higher is the level of flipping activity. When all boards are combined, again offer size is the only variable that can explain the level of opening-day flipping activity. We find that there is no significant relationship between the ex-ante variables and the opening-day price spread for Main Board and Second Board, and for MESDAQ, *only* over-subscription ratio can explain the opening-day price spread. When all boards are combined, over-subscription ratio and offer type are the two variables that can explain the level of opening-day price spread.

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