INITIAL PREMIUM OF IPOs AND THE IMMEDIATE AFTERMARKET BEHAVIOUR OF INVESTORS: EVIDENCE FROM MALAYSIAN IPOs

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Abstract

This paper examines the significance of some ex-ante variables of Malaysian IPOs on the initial premium and the immediate aftermarket behaviour of investors, during the period of January 2004 to July 2009. We find that the smaller the company the greater is its required initial premium because of its perceived higher risk, thus giving support to the size effect hypothesis. Divergence of opinions among investors regarding the true value of an IPO is the highest for IPOs listed on MESDAQ. In the absence of informed investors, the higher the investor demand the higher is the level of divergence of opinion among investors, and the smaller the size of offer the larger is the divergence of opinion among the investors. There is a strong positive relationship between the initial premium and the first-day price spread. Bandwagon effect is more evident in IPOs with low initial demand and high initial returns. A significant relationship exists between the offer size and the first-day price spread for the private placement IPOs, and in the case of non-private placement IPOs, a significant relationship exists between the over-subscription ratio and the first-day price spread.

Keywords: IPOs, Malaysian IPOs, Winner's Curse, Size Effect, Bandwagon Effect

1. Introduction

In recent years, there has been an increasing interest in studying investors' aftermarket trading behaviour 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 behavioural finance. Behavioural finance surfaced in the 1990's due to the inability of the efficient market hypothesis (EMH) in explaining anomalies and the implications that investors' behaviour have in determining the true value of an investment. From the perspective of the behavioural 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 or her investment.

Behavioural finance relies on the commonly accepted belief that an investor's behaviour 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 behaviour of the participants in the market and this behaviour 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 behaviour and the overall investors' behaviour will in turn affect the IPO market performance.

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 behaviour 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' behaviour.

We can argue that, since behaviour 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 (namely, 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 (another proxy for size effect)) and the initial premium of IPOs as well as the immediate aftermarket investors' behaviour. In this study, first-day price spread is used as the proxy for the immediate aftermarket investors' behaviour, and it will capture the behaviour on how the most optimistic and the most pessimistic investors assign the IPO value on the first-day of listing. A high first-day price 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 price spread in the IPO market. Past studies in Malaysia usually deal 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; Yong *et al*., 2002), over-subscription ratio (Yong & Isa, 2003; Yong, 2007a), and the effect of regulations (Mohd, 2007), and try to determine their relationship with the initial returns of Malaysian IPOs. Other issues were also examined, such as Mohamad *et al.* (1994) who examined the accuracy of profit forecasts reported in prospectuses, and How *et al.* (2007) who examined the change in regulation in 1996 towards a market-based pricing mechanism, and its effect on the under-pricing of Malaysian IPOs. Recently, Abdul Rahim and Yong (2010) studies the performance of shariah-compliant Malaysian IPOs and found that initial returns of shariah-compliant IPOs were driven by size and type of offers whereas non-shariah IPOs were driven by risks. Studies on the long run performance of Malaysian IPOs have also been carried out, such as Dawson (1987), Wu (1993), Ismail *et al.* (1993), 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, none of the earlier studies on Malaysian IPOs deals with private placement IPOs. They usually focused on two major types of IPOs, namely public offer and offer for sale (for example Dawson (1995) and Yong and Isa (2003)). The current study fills this void in the past studies. As suggested by Rock (1986), with fixed-price IPOs, the uninformed investors face a winner's curse,

that is, they got all of the shares which they ask for because the informed investors (or institutional investors) does not want them. Thus, faced with this adverse selection problem, the uninformed investors will only buy if IPOs were under-priced to compensate them for the bias in the IPO allocation.

Thirdly, information on the proportion of IPOs subscribed by the institutional investors, in IPOs with private placement, enables us to test another hypothesis called the bandwagon effect. According to Welch (1992), bandwagon effects may develop if potential investors pay attention not only to their own information about an IPO, but also to whether other investors are purchasing. If an investor sees that no one else wants to buy, he may not buy even when he possesses favourable information. Based on this argument, according to Welch, 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. Our argument is slightly different from Welch's argument. We argue that the existence of informed investors (institutional investors) in an IPO exercise will result in an increased interest (or a bandwagon effect) from the general public, or the retail investors. Following the argument for winner's curse, we further hypothesize that the existence of informed investors in an IPO exercise should lead to *initially* lower initial premium, but later gains momentum as retail investors get interested in the said IPO. This leads to our hypothesis that the bandwagon effect will result in high first-day price spread due to the increased number of investors, with more diverse opinion on the true value of the IPO.

Finally, previous studies on Malaysian IPOs, such as Ismail *et al*. (1993), Yong *et al.* (1999), and Yong (2007a) found that there was a positive relationship between over-subscription ratio and IPO initial return. A high over-subscription ratio indicate a high demand for a particular IPO which in turn reflected the confidence and the optimism that pre-IPO investors had on the new issue. As such, a positive relationship is expected between over-subscription ratio and the proxy for investors' immediate aftermarket behaviour.

The rest of this paper is organized as follows. Following the introduction, Section 2 describes the methodology. Section 3 presents the result, and finally Section 4 concludes the paper.

2. Methodology

The sample for this study comprised of all fixed-price IPOs listed on the three listing boards (namely, Main Board, Second Board and MESDAQ) of Bursa Malaysia from January 2004 to July 2009. January 2004 is chosen as the beginning period of this study in line with the change of name of the Malaysian stock market from Kuala Lumpur Stock Exchange to Bursa Malaysia beginning in January 2004. Starting from 3rd of August 2009, stocks are no longer listed on the three listing boards when a new classification of listing on Bursa Malaysia was introduced. Since then, stocks are either listed on the Main market or on the ACE market. Essentially, Main market caters for stocks previously listed on the Main Board and on the Second Board, whereas ACE market caters for stocks previously listed on the MESDAQ market. For this reason, our sample period ends in July 2009. 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, 239 IPOs are used in the current study. 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, and this is another reason why 2004 is chosen as the beginning year for this study.

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, especially the information made available on the BiznewsDatabank website (http://www.biznewsdb.com), Malaysian Issuing House (MIH) website (http://www.mih.com.my), and MIDF website (http://www.midf.com.my/cms/news/news89).

Analyses on the initial premium as well as the investors' immediate aftermarket behaviour are 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 use first-day price spread as the proxy for investors' immediate aftermarket behaviour. Essentially, first-day price spread refers to the difference between the first trading-day's highest price and its lowest price. However, for the purpose of comparison, we introduce the following measure of first-day price spread:

[(highest price – lowest price)/offer price] x 100%,

which is the ratio of the first-day price 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.

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, there will be a higher degree of interest among the investors on these IPOs, and thus a bandwagon effect, which can result in a more diverse opinion among the investors regarding the true values of these IPOs. Based on this argument, a positive relationship is expected between over-subscription ratio and investors' immediate aftermarket behaviour.

Listing board refers to the three Bursa Malaysia's listing boards, namely the Main Board, the 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. Private placement refers to IPOs subscribed by institutional investors (considered to be informed investors), whereas non-private placement IPOs are IPOs offered to the public in general, usually referred to, in Malaysia, as the retail investors (considered to be uninformed investors). Private placement, as suggested by its name, refers to the sale of IPOs *directly* to institutional investors. In actuality, institutional investors are the opposite of the individual investors, or retail investors. Information on private placement IPOs enables us to analyze the performance of IPOs based on the presence of knowledgeable or informed investors, as represented by the institutional investors, in an IPO exercise, and thus enables us to the test the

winner's curse hypothesis. None of the earlier studies on Malaysian IPOs deals with private placement IPOs. They usually focus on two major types of IPOs, namely public offer and offer for sale (for example Dawson (1995) and Yong and Isa (2003)). The current study fills this void in the past studies. As suggested by Rock (1986), with fixed-price IPOs, the uninformed investors 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, faced 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. In line with this line of argument, we hypothesize that IPOs *without* the participation of institutional investors (i.e. informed investors) will result in higher initial returns, or higher levels of under pricing.

According to Welch (1992), bandwagon effects may develop if potential investors pay attention not only to their own information about an IPO, but also to whether other investors are purchasing. If an investor sees that no one else wants to buy, he may not buy even when he possesses favourable information. Based on this argument, according to Welch, 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. Our argument is slightly different from Welch's argument. We argue that the existence of informed investors (institutional investors) will bring more interest from the general public, or the retail investors. The inducement comes from the participants of informed investors, and not from lowering the price, i.e., when retail or uninformed investors see many informed or institutional investors are involved in an IPO exercise, they become interested and want to jump into the bandwagon, so to speak. Following the argument for winner's curse, we further hypothesize that the existence of informed investors in an IPO exercise should lead to *initially* lower initial premium, but later gains momentum as retail investors get interested in the said IPO, a phenomenon referred to as the bandwagon effect, which translates into higher price spread. This is in line with our hypothesis that the bandwagon effect will result in high first-day price spread due to the increased number of investors, especially from retail 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. 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.

3. Results

Table 1 presents a summary of the characteristics of 239 IPOs used in this study, for the period January 2004 through July 2009. The average initial return is 25.26 percent, with the minimum initial return of –66.67 percent and the maximum initial return of 275.00 percent. This average initial return (offer-to-open) is substantially lower than the figure 72.85 percent reported by Yong (1997) and the figure 94.91 percent 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 percent as reported by Dawson (1987); 114.6 percent reported by Ismail *et al*. (1993); 80.3 percent reported by Loughran *et al*. (1994); and 75.03 percent reported by Yong (1997)).

Table 1. Descriptive statistics of initial return (offer-to-open), over-subscription ratio, number of shares issued, offer price and size of offer, for the period January 2004 to July 2009

	Mean	Median	Std. Dev.	Min.	Max.
Initial return (%)	25.26	13.33	43.79	-66.67	275.00
Over-subscription ratio (times)	36.70	17.19	53.76	-0.94@	377.96
Number of shares issued (million units)	60.65	34.00	98.36	3.71	700.51
Offer price (RM)	0.83	0.70	0.55	0.17	3.00
Size of offer (RM million)	58.55	20.90	132.33	1.80	981.00

Notes:
1) Sample size, n=239
2) @ An under-subscription of 94 percent, or subscribed by only 6 percent of the overall issue.

The average over-subscription ratio is 36.70 times, with a minimum over-subscription ratio of –0.94 and a maximum value of 377.96 times. This average is lower than the figure 46 times reported by Dawson (1987), 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 interest in IPOs among investors in Malaysia after the financial crisis that hit Asia in July 1997. During the period of this study, the average number of shares issued is 60.65 million, the average offer price is RM0.83, and the average offer size is RM58.55 million.

Table 2 presents the characteristics of initial premium and first-day price spread according to offer type and listing board, for the period January 2004-July 2009. As shown in Panel A, there are 142 private placement IPOs, with an average initial premium, as measured by the initial return (offer-to-open), of 23.34 percent. Non-private placement IPOs represents 97 of the total 239 IPOs for the period, with an average initial premium of 27.34 percent. The t-statistic value of -0.608 (the corresponding *p*-value of 0.544) indicates that there is no significant difference between the average initial premium of the private placement IPOs and the average initial premium of 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 give an early indication of the existence of a winner's curse.

As shown in Panel A of Table 2, the mean first-day price spread is 27.89 percent for private placement IPOs, and 18.51 percent for non-private placement IPOs. As indicated by the t-statistic of 2.721 (and the corresponding p-value of 0.007), the average first-day price spread for private placement IPOs is significantly higher than the average for the non-private placement IPOs. This result suggests that the existence of informed investors in an IPO exercise leads to lower initial premium (average initial return of 23.83 percent for private placement IPOs versus 27.34 percent for the non-private placement IPOs) but later gains momentum as retail investors get interested in the said IPO, which translates into higher price spread (27.89 percent for private placement IPOs versus 18.51 percent for non-private placement IPOs), and this phenomenon is called bandwagon effect. This is in line with our hypothesis that the bandwagon effect will result in high first-day price spread due to the increased number of investors with more diverse opinion on the true value of the IPO. With regard to first-day price spread, our results on private placement IPOs versus non-private placement IPOs, do indeed *confirm* our line of argument.

Table 2. Characteristics of initial premium and first-day price spread according to offer type and listing board, for the period January 2004-July 2009

		Initial Premium (%)		First-day Price Spread (%)	
	n	Mean	Std. Dev.	Mean	Std. Dev.
Panel A*: *Offer Type					
Private Placement	142	23.83	46.83	27.89	36.01
Non-Private Placement	97	27.34	39.07	18.51	16.35
Result of Independent t-Test[#]		t=-0.608	*p*=0.544	t[@]=-2.72**	*p*=0.007
Panel B*: *Listing Board					
Main Board	64	16.16	23.52	13.86	10.34
Second Board	69	19.25	33.59	17.71	22.97
MESDAQ	106	34.66	55.86	34.41	37.82
Result of F-test[##]		F=4.610*	*p*=0.011	F=12.738**	*p*=0.000

Notes:
1) [#] Independent t-test between the mean initial return (offer-to-open) of the private placement IPOs and the mean initial return (offer-to-open) of the non-private placement IPOs.
2) [##] Result of F-test of average initial returns (offer-to-open) among the three listing boards.
3) [@] Equal variances not assumed, based on the Levene's test for equality of variances.
4) ** Significant at the 1 percent level.

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 16.16 percent, and MESDAQ records the highest average of 34.66 percent. Second Board registers slightly higher mean compared to the main Board at 19.25 percent. 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 percent level (*p*-value=0.011). 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 percent for 183 IPOs listed on the Main Board, and 104.22 percent 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 percent for 64 IPOs listed on the Main Board, and 42.07 percent for 95 IPOs listed on the Second Board, and 61.39 percent for 26 IPOs listed MESDAQ.

Results shown in Panel B of Table 2 clearly show that listing board has a very significant impact on the way investors react towards an IPO. MESDAQ registers the highest average initial premium of 34.66 percent and the highest first-day price spread of 34.41 percent. The lowest figures (16.16 percent for initial premium and 13.86 percent for first-day price spread) are registered by the Main Board. MESDAQ, being the listing board for small and technology stocks, is considered the most risky and thus investors seem to demand the highest initial premium. 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 first-day price spread of 34.41 percent; in fact this figure is twice as much as the figure of 17.71 percent for the IPOs listed on the Second Board.

Table 3. Correlation between ex-ante variables[#] and initial premium, and correlation between ex-ante variables and the immediate aftermarket investors' behaviour,[##] according to listing board[@] and type of offer[@@]

	n	Initial premium	First-day price spread
Panel A: ***Main Board***			
Natural logarithm of over-subscription ratio[###]	61	0.448** (0.000)	0.173 (0.183)
Natural logarithm of offer size	64	-0.254* (0.043)	-0.134 (0.291)
Panel B: ***Second Board***			
Natural logarithm of over-subscription ratio	63	0.494** (0.000)	0.294* (0.019)
Natural logarithm of offer size	69	-0.253* (0.036)	0.050 (0.685)
Panel C: ***MESDAQ***			
Natural logarithm of over-subscription ratio	98	0.448** (0.000)	0.166 (0.103)
Natural logarithm of offer size	106	-0.129 (0.188)	-0.171 (0.080)
Panel D: ***Private-placement IPOs***			
Natural logarithm of over-subscription ratio	131	0.386** (0.000)	0.238** (0.006)
Natural logarithm of offer size	142	-0.171* (0.042)	-0.235** (0.005)
Panel E: ***Non-private placement IPOs***			
Natural logarithm of over-subscription ratio	91	0.562** (0.000)	0.449** (0.000)
Natural logarithm of offer size	97	-0.361** (0.000)	-0.326** (0.001)
Panel F: ***All IPOs combined***			
Natural logarithm of over-subscription ratio	222	0.460**(0.000)	0.264**(0.000)
Natural logarithm of offer size	239	-0.228**(0.000)	-0.259**(0.000)

Notes:

1) [#] These ex-ante variables are over-subscription ratio (proxy for investor demand), and offer size (size of offer is a proxy for firm size, and 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, and higher uncertainty in turn will generate greater differences in opinion).

2) [##] Immediate aftermarket investors' behaviour refers to the first-day price spread.

3) [###] In order to use natural logarithm transformation, the numbers must be greater than zero, and as such only IPOs with positive natural logarithm values are included in our analysis.

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

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

6) * Significant at the 5 percent level.

7) ** Significant at the 1 percent level.

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

Table 3 presents the correlations between ex-ante variables (i.e., natural logarithm of over-subscription ratio and natural logarithm of offer size) and initial premium, according to listing board and type of offer. Rather than using the actual over-subscription ratio as in Yong and Isa (2003) and Yong (2007a), we transform it to *natural logarithm* of over-subscription ratio in line with Gao (2010) who adopt logarithm of oversubscription multiple in the case of Chinese IPOs. In order to use the natural log transformation, the numbers must be greater than zero, and as such only IPOs with positive values are included in our analysis. This table also presents the

correlations between the ex-ante variables and the immediate aftermarket investors' behaviour (i.e., first-day price spread).

Panels A through F of Table 3 clearly show that over-subscription ratio is a variable that correlates significantly with the initial premium; this finding confirms earlier conclusion made by Ismail *et al.* (1993) and Yong *et al.* (1999), who both find that there is a positive relationship between over-subscription ratio and the initial return of IPO. 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, in a more recent study for the period of 1999 to 2003.

In general, the non-significant correlations between the over-subscription ratio and the first-day price spread indicate that listing board is not related to the first-day price spread; this means that investor demand is not related to the divergence of opinion regarding the true value of an IPO listed on any one particular listing board. Only in the case of the Second Board, the correlation is significant at the 5 percent level, with a correlation of 0.294. In the case of offer type, both correlations are significant at the 1 percent level, with the non-private placement IPOs having a very significant correlation of 0.449 (p-value = 0.000), and the private-placement IPOs having a significant correlation of 0.238 (p-value=0.006). The findings indicate that, in the absence of informed investors (an IPO exercise without the participation of institutional investors), the higher the investor demand the higher is the level of divergent opinion among investors regarding the true value of an IPO.

In general, all listing boards and both types of offer register a negative correlation between offer size and initial premium. All listing boards, except MESDAQ, register a significant correlation (at the 5 percent level) between offer size and initial premium. In the case of non-private placement IPOs, the correlation is significant at the 1 percent level, whereas in the case of private placement IPOs the correlation is significant at the 5 percent level. These findings, in general, indicate that the larger the offer size the lower is the initial premium, especially in the case of the non-private placement IPOs. For comparison, Corhay *et al.* (2002) report a negative relationship between size of offer and market return for Malaysian IPOs.

In general, none of the listing boards registers a significant correlation between offer size and the first-day price spread. However, both types of offer register a significant negative correlation (at the 1 percent level) between the offer size and the first-day price spread. In fact, the negative correlation is larger in the case of non-private placement IPOs compared to the private placement IPOs, which indicate that, in an IPO exercise without the participation of informed investors (i.e., in a non-private placement IPO exercise), the smaller the size of offer the larger is the divergence of opinion among the investors. When all IPOs are combined, the correlation between offer size and first-day price spread is negative and significant at the 1 percent level.

Table 4 shows the correlation between initial premium and the first-day price spread (i.e., proxy for immediate aftermarket investors' behaviour) according to over-subscription ratio, listing board, type of offer and offer size. With regard to the natural logarithm of over-subscription ratio, we classify the ratios into two classes, namely ratios with values of less than the median, and the ratios with values of greater than the median. The results show that there is a strong positive relationship (a correlation of 0.738 for the class of less than median (smaller class), and a correlation of 0.356 for the class of more than median (bigger class), where both correlations are significant at the one percent level) between the initial premium and the first-day price spread for both classes. The strong correlation between the initial premium and the first-day price spread gives an early indication of a "bandwagon effect" where investors are more interested in IPOs with high initial returns (i.e., high initial premiums) which result in greater divergence in opinion regarding the true values of these IPOs. 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 somehow indicates that investors are more interested in IPOs with low initial demand (as indicated by the low over-subscription ratios) compared to IPOs with high initial demand (as indicated by the high over-subscription ratios). The finding also indicates that, in the case of IPOs with low initial demand, the higher the initial premium, the higher is the investors' divergence in opinion regarding the true value of the IPOs.

Table 4. Correlation between initial premium and the first-day price spread, according to over-subscription ratio, listing board, offer type and offer size

	n	first-day price spread
Panel A: *According to natural logarithm# of over-subscription ratio*		
Less than median	104	0.738** (0.000)
More than median	105	0.356** (0.000)
Panel B: *According to listing board*		
Main Board	64	0.607** (0.000)
Second Board	69	0.526** (0.000)
MESDAQ	106	0.522** (0.000)
Panel C: *According to offer type*		
Private placement	142	0.629** (0.000)
Non-private placement	97	0.391** (0.000)
Panel D: *According to natural logarithm# of offer size*		
Less than median	119	0.524** (0.000)
More than median	120	0.537** (0.000)
Panel E: *All IPOs combined*		
Overall	239	0.549** (0.000)

Notes:
1) # In order to use the natural logarithm transformation, the numbers must be greater than zero, and as such only IPOs with positive natural logarithm values are included in our analysis.
2) ** Significant at the 1 percent level.
3) *p*-values are shown in the parentheses.

With regard to listing board, offer type and offer size, all correlations between the initial premium and opening-day price spread are significant at the one percent level. This finding indicates that, regardless of the listing board (i.e., firm size), investors are more interested in IPOs with higher

initial returns (i.e., initial premiums) compared to IPOs with lower initial returns, which result in higher levels of divergence of opinion among investors regarding the true values of these IPOs.

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 0.629 for private-placement IPOs and 0.391 for non-private placement IPOs), and both correlations are significant at the 1 percent level. The result indicates that investors are more interested in IPOs with higher initial returns (or initial premium), especially in IPOs with participation of informed investors (i.e., private placement IPOs), which result in higher investors' divergence of opinion regarding the true values of these IPOs.

From the results shown in Table 4, we can conclude that initial premium has a strong relationship with the first-day price spread for all four ex-ante variables (i.e., over-subscription ratio, listing board, type of offer, and offer size). This means that investors, in general, are more interested in IPOs that provide high initial returns, which results in a bandwagon effect in those IPOs, and thus higher investors' divergence of opinion regarding the true values of these IPOs. We initially argue that the existence of informed investors (institutional investors) will bring more interest from the general public, or the retail investors, i.e., when retail or uninformed investors see many informed or institutional investors are involved in an IPO exercise, they become interested and want to jump into the bandwagon, so to speak. Interest from the general public in private placement IPOs will result in a more diverse opinion regarding the true values of these IPOs, as shown by the higher levels of first-day price spreads.

Table 5 presents the results of step-wise regressions of the immediate aftermarket investors' behaviour (i.e., first-day price spread) on some ex-ante variables, according to listing board and offer type. In Panel A, we report the results for listing board, whilst in Panel B we report the results for offer type. As shown in Panel A, no significant relationship exists between the ex-ante variables and the first-day price spread for the Main Board and MESDAQ, and for the Second Board, *only* over-subscription ratio can explain the first-day price spread, with an adjusted R^2 of 0.083. The F-value of 5.862 indicates that the model is significant at the 5 percent level (*p*-value=0.019). However, the Durbin-Watson *statistic* indicates that the model formed is not free from the problem of auto-correlation in the residuals, at the 1 percent level of significance, and as such caution should be taken when interpreting the model.

As shown in Panel B, a significant relationship exists between the offer size and the first-day price spread for the private placement IPOs, with an adjusted R^2 of 0.062. The F-value of 8.965 indicates that the model is significant at the 1 percent level (*p*-value=0.003). The Durbin-Watson *statistic* indicates that the model formed is free from the problem of auto-correlation in the residuals, at the 1 percent level of significance. In the case of non-private placement IPOs, a significant relationship exists between the over-subscription ratio and the first-day price spread, with an adjusted R^2 of 0.178. The F-value of 19.633 indicates that the model is significant at the 1 percent level (*p*-value=0.003). In addition, the Durbin-Watson *statistic* indicates that the model formed is free from the problem of auto-correlation in the residuals, at the 1 percent level of significance.

Table 5. Regressions (step-wise) of the first-day price spread on ex-ante variables[#] according to listing board and offer type

	n	Parameter estimates: Constant	*ln*[##] *of* over-subscrip-tion ratio	*ln*[##] of offer size	Adjusted R^2	F-value	Durbin-Watson[@] statistic
Panel A: *Listing board*							
Main Board			- no relationship exists -				
Second Board	55	7.395 (0.054)	3.067 (0.019)		0.083	5.862 (0.019)	1.336**
MESDAQ			- no relationship exists -				
Panel B: *Offer type*							
Private placement	122	203.189 (0.001)		-10.475 (0.003)	0.062	8.965 (0.003)	1.792
Non-private placement	87	2.815 (0.498)	5.381 (0.000)		0.178	19.633 (0.000)	1.848
OVERALL	209	115.235 (0.001)	3.601 (0.028)	-5.981 (0.002)	0.097	12.224 (0.000)	1.919

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). Listing board is another ex-ante variable (proxy for company size and thus size effect). Type of offer is also an ex-ante variable (private placement as proxy for informed investors versus other types of offer as proxy for uninformed investors, and thus information asymmetry hypothesis). Only significant variables are reported in this table.
2) [##] In order to use the natural logarithm transformation, the numbers must be greater than zero, and as such only IPOs with positive natural logarithm values are included in our analysis.
3) *p-values* are shown in the parentheses.
4) [@] Durbin-Watson test for auto-correlation of the residuals with the null hypothesis that the auto-correlation is zero against the alternative hypothesis that the auto-correlation is greater than zero; this test is a one-sided or one-tailed test. ** indicates the rejection of null hypothesis at the 1 percent level. *None* of the Durbin-Watson statistics in Panel B indicates rejection of the null hypothesis at the 1 percent level.

4. Conclusion

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 behaviour of investors, during the period of January 2004 to July 2009. Our initial results seem to indicate that uninformed investors do demand a slightly higher premium when informed investors are not present, which gives an early indication of the existence of a winner's curse in Malaysian IPOs. We find that the existence of informed investors in an IPO exercise leads to lower initial premium but later gains momentum as uninformed investors get interested in the said IPO, which translates into higher price spread, and this phenomenon is called the bandwagon effect. The smaller the company the greater is its required initial premium because of its perceived higher risk; this

finding supports the size effect hypothesis. MESDAQ, being the listing board for small and technology stocks, is considered the most risky and thus investors seem to demand the highest initial premium. Divergence of opinions among investors regarding the true value of an IPO is also the highest for IPOs listed on MESDAQ. We also find that, in the absence of informed investors, the higher the investor demand the higher is the level of divergence of opinion among investors, and the smaller the size of offer the larger is the divergence of opinion among the investors. In general, there is a strong positive relationship between the initial premium and the divergence of opinion among investors. Bandwagon effect is more evident in IPOs with low initial demand and high initial returns. Finally, we find that, in an IPO exercise with the presence of informed investors, there is a significant relationship between the offer size and the divergence of opinion among investors; however, in an IPO exercise without the participation of informed investors, there is a significant relationship between the investor demand and the divergence of opinion among investors.

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