

## Size of Offer, Over-subscription Ratio and Performance of Malaysian IPOs

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### ABSTRACT

*This paper examines the initial and the long-run performance of initial public offerings (IPOs) of stocks listed on the Main Board of the Kuala Lumpur Stock Exchange. This study finds a significant mean initial return and mean over-subscription ratio, even-though not as high as reported in earlier studies. Size of offer is not correlated with the over-subscription ratio. In general, initial returns are significantly higher than returns for subsequent longer-term holding periods. Mean initial returns among the three types of issue compared are not significantly different from each other. Only in the case of offer for sale that we find a significant positive correlation between its over-subscription ratio and its initial return. Offer for sale also shows a positive correlation between its over-subscription ratio and its raw return for day-365, but turns significantly negative for day-910 and day-1095. In the case of combination of public issue and offer for sale, over-subscription ratio is not significantly correlated with longer-term returns, for either raw or adjusted return. Finally, in the case of public issue, its over-subscription ratio is significantly correlated with its raw return only for day-180 and day-540, and for its adjusted return, the correlation is significant only for day-180 and day-365.*

### ABSTRAK

*Kertas ini meneliti prestasi awal dan jangka panjang tawaran awal awam (TAA) bagi saham-saham yang disenaraikan di Papan Utama Bursa Saham Kuala Lumpur. Kajian ini mendapati purata pulangan awal dan purata nisbah lebihan langganan yang masih signifikan, walaupun tidak setinggi yang dilaporkan dalam kajian-kajian lepas. Saiz tawaran tidak berkorelasi dengan nisbah lebihan langganan. Secara umumnya, pulangan awal adalah lebih tinggi secara yang signifikan berbanding pulangan untuk tempoh-tempoh yang lebih panjang. Purata pulangan-pulangan awal antara ketiga-tiga jenis tawaran yang dibandingkan adalah tidak berbeza secara signifikan antara satu sama lain. Hanya dalam kes tawaran untuk jualan yang menunjukkan korelasi yang positif antara nisbah lebihan langganan dengan pulangan awal. Tawaran untuk jualan juga menunjukkan korelasi yang positif antara nisbah lebihan langganan dengan pulangan tanpa selaras untuk hari-365, tetapi bertukar menjadi negatif secara signifikan untuk hari-910 dan hari-1095. Walau bagaimanapun, untuk pulangan terselaras, korelasi adalah tidak signifikan untuk tempoh-tempoh masa yang lebih panjang. Dalam kes kombinasi terbitan awam dan tawaran untuk jualan, nisbah lebihan langganan tidak berkorelasi secara yang signifikan dengan pulangan-pulangan jangka panjang, sama ada untuk pulangan terselaras atau yang tanpa selaras. Akhir sekali, dalam kes terbitan awam, nisbah lebihan langganan berkorelasi secara signifikan dengan pulangan tanpa selaras hanya untuk hari-180 dan hari-540, dan bagi pulangan terselaras, korelasi adalah signifikan hanya untuk hari-180 dan hari-365.*

## INTRODUCTION

Research on initial public offerings (IPOs) of common stocks in many countries (see, for example, Ibbotson and Ritter (1993), for a comprehensive review) has mainly concluded that there exists an under-pricing in the IPOs, as indicated by the huge initial return. One popular explanation usually given to describe the under-pricing is that under-pricing is the result of a winner's curse to uninformed investors due to asymmetric information between groups of informed and uninformed investors. Another equally common explanation suggests that issuing firms purposely under-price their IPOs in order to avoid lawsuits by unhappy investors in the event that the IPOs do not perform after their initial listing period.

This paper examines four major issues regarding Malaysian IPOs. First, it examines the levels of IPO under-pricing in a developing country, Malaysia, over a more recent period than those documented in previous studies. Second, it looks at the issue of whether or not size of offer is related to over-subscription ratio. Third, it focuses both on the initial and long-term performances of the IPOs (also known as after-market performances), according to the type of issues. Finally, it looks at the ability of over-subscription to explain the initial return and the subsequent after-market returns.

## THEORY AND EVIDENCE

In recent years, a large body of literature has developed in documenting the returns earned by investors on initial public offers (IPOs). A comprehensive review can be found in Ibbotson and Ritter (1993). Early studies by Reilly and Hatfield (1969), Neuberger and Hammond (1974), Bear and Curly (1975), Ibbotson (1975), Reilly (1977), Block and Stanley (1980), Baron (1982), Rock (1986), Chalk and Peavy (1987), Miller and Reilly (1987), Allen and Faulhaber (1989), Grinblatt and Hwang (1989), Welch (1989), and more recent studies by Barry and Jennings (1993), Chemmanur (1993), Hanley and Wilhelm (1994), Booth and Chua (1996), Dunbar (1997), and Chaney and Lewis (1998) all indicate the existence of the underpricing phenomenon with IPOs.

In Malaysia, an early study by Dawson (1987), from 1978 to 1983, using 21 IPOs, reports a positive average initial return of 166.7 percent for the Malaysian stocks, while Yong (1991) documents an average initial return of 167.4 percent. Both Dawson (1987) and Yong (1991) document an average over-subscription ratio of about 46 times. Ku Nor Izah Ku Ismail et al. (1993), using 63 IPOs from 1980 to 1989, report an average initial excess return (initial return adjusted for market movement) of 114.6 percent. Loughran et al. (1994) reports an average initial return of 80.3 percent for 132 Malaysian IPOs for the period 1980-91. In a more recent study, using a sample of 224 IPOs from January 1990 to December 1994, Yong (1997) documents an average initial (offer-to-close) return of 75 percent (initial return adjusted for market movement of 74.5 percent). The average is substantially lower than those found in earlier studies on the Malaysian stock market. The average over-subscription ratio of 32.3 times is also lower than those found in earlier studies.

Several explanations have been offered to explain the under-pricing phenomenon in the West. Baron (1982), Rock (1986), Beatty and Ritter (1986), Beatty (1989) and Levis (1990), attribute the under-pricing to a group of investors (informed investors) possessing superior information compared to those who are uninformed. This asymmetric information hypothesis suggested by Rock (1986) will result in uninformed investors buying more over-priced issues and less under-priced issues. Realizing the situation, uninformed investors will stay out of the IPOs market. In order to ensure the issues are fully subscribed, new issues will be discounted to attract the uninformed investors to buy the issues.

Ibbotson (1975) and Tinic (1988) offer another explanation for the under-pricing phenomenon. They suggest that under-pricing is due to the issuing firms purposely under-pricing their IPOs in order to avoid lawsuits by unhappy subscribers in the event the IPOs do not appreciate in value when they are traded in the secondary market. Yet another explanation by Allen and Faulhaber (1989), Grinblatt and Hwang (1989), Welch (1989) and Chemmanur (1993), suggest that asymmetric information between groups of informed and uninformed investors causes qual-

ity firms to signal their quality by under-pricing their IPOs. They hope that, in so doing, they would be able to raise capital under better terms in the future. Finally, Booth and Chua (1996) offer another explanation for the under-pricing of IPOs. They suggest that the issuer's demand for ownership dispersion creates an incentive to under-price.

Dawson (1994) suggests that in Malaysia, a popular explanation given for under-pricing of Malaysian IPOs is the pricing restraints applied by the Capital Issues Committee (CIC)<sup>1</sup>. Dawson also suggests that under-pricing of IPOs is due to the notion of uncertainty among the investors regarding the true value of the IPOs.

It is interesting to note that in Japan, Pettway and Kaneko (1996) discover that public policy can reduce, but not eliminate, under-pricing. They find that by removing price limit and introducing public auction, the level of initial return can be reduced significantly. Chowdhry and Sherman (1996) discover an interesting feature of the allocation of IPOs in many countries such as the United Kingdom, Hong Kong, Singapore, Malaysia, Indonesia, India, Thailand and Bangladesh. In these countries, the issuers of IPOs tend to favor small over large investors.

Studies on long-run performance of Malaysian IPOs are still quite scarce. Two studies worth mentioning are those by Wu (1993) and Paudyal et al. (1998), even though these studies do not solely focus on the long-term performance of IPOs. Wu (1993) discovers that in the long-term, IPOs with low initial returns have better performance compared to those with high initial returns. In addition, small firms tend to out-perform large firms<sup>2</sup>, and this phenomenon is more apparent in the long-term. Paudyal et al. (1998) find that IPOs with higher initial return under-perform the market in the long-run, while those with low initial return out-perform the market.

## DATA AND METHODOLOGY

The sample consists of 93 IPOs listed on the Main Board of the Kuala Lumpur Stock Exchange (KLSE) from January 1991 to December 1995. Two firms were removed from the original sample

size of 95 because they were listed without the offer price. The firms were Ekran Berhad (listed on 12 October 1992) and Kurnia Setia Berhad (listed on 6 November 1991). Data for IPOs were compiled from various January issues of *Investors Digest*, a publication of the KLSE. Prices at the end of the trading period were obtained from the *Metastocks*™.

In Malaysia, essentially there are three types of IPOs. The first type is known as the *public issue*, where new shares of a company's stock are offered to the public for subscription for the first time. As such, it will result in an increase in the company's paid-up capital. The second type is called *offer for sale*, where shares belonging to the handful original shareholders are offered for sale to the general public. As such, it will not change the company's paid-up capital. The purpose of *offer for sale* is to redistribute the company's ownership in line with the rules and regulations as set up by the authority. Finally, the third type is just a combination of *public issue* and *offer for sale*.

For each IPO, the following measures are calculated:

1. Initial return is defined as the percentage change in price from the offering date to the closing of the first day of trading.
2. Adjusted initial return is defined as the percentage change in price from the offering date to the closing of the first trading day less the equivalent change in the KLSE Composite Index (KLSE CI).
3. The day- $n$  return is defined as the percentage change in price from the closing of the first day of trading to the closing of the  $n$ th day of trading.
4. The day- $n$  adjusted return is defined as the percentage change in price from the closing of the first day of trading to the closing of the  $n$ th day of trading less the equivalent change in the KLSE Composite Index.

In most cases where there is no trading on the  $n$ th day, the next available trading day is taken as the  $n$ th day. However, if the  $n$ th day falls on Saturday, Friday is used as the  $n$ th day, and in the case of Sunday being the  $n$ th day, Monday is considered the  $n$ th day.

## RESULTS AND DISCUSSION

Table 1 summarizes the characteristics of the Malaysian initial public offerings (IPOs) over the period of the study, January 1991 to December 1995. Out of the 93 IPOs issued over the period, the highest number of issue of 25 is registered in 1992 while the lowest number of issue of 12 is recorded in 1993. Of the total 93 issues, 60 issues (about 65 percent of total issues) are *offer for sale*, fol-

lowed by 19 (about 20.4 percent) *public issues* and the remaining 14 issues are the combination of the two. The mean offer price for the period under study is RM2.23, with the lowest mean of RM1.99 recorded in 1993, and the highest mean offer price of RM2.43 registered in 1992. The mean closing price for the first day of trading for the period under study is RM4.08, with the lowest mean closing price of RM2.89 registered in 1991 and the highest of RM5.47 recorded in 1994.

**Table 1**  
Characteristics of Malaysian IPOs

Year	Number of Issue		Type of Issue @			Offer Price (RM)				First Day's Closing		Price (RM)	
	n	%	PI	OFS	PI&OFS	Mean	Std.Dev.	Min.	Max.	Mean	Std.Dev.	Min.	Max.
1991	20	22	5	14	1	2.15	0.85	1.00	3.80	2.89	1.34	1.11	5.80
1992	25	27	6	12	7	2.43	0.92	1.00	5.00	3.57	1.95	1.32	8.75
1993	12	13	2	9	1	1.99	0.79	1.10	4.00	4.36	1.56	1.57	7.25
1994	19	20	3	14	2	2.16	0.66	1.40	3.75	5.47	1.71	2.90	8.75
1995	17	18	3	11	3	2.29	1.13	1.10	6.11	4.49	1.62	2.70	8.50
1991-1995	93	100	19	60	14	2.23	0.88	1.00	6.11	4.08	1.87	1.11	8.75

Note: @ PI refers to public issue, OFS refers to offer for sale, and PI & OFS refers to combination of PI and OFS.

Table 2 presents the characteristics of the over-subscription ratios according to the type of IPO and the year of issue. Overall, for the period 1991-1995, the over-subscription ratios ranged from the low 0.04 time registered in 1992 to the high of 122.55 times recorded in 1995, with a mean of 28.84 times and a standard deviation of 22.80 times. This average over-subscription ratio of 28.84 times is lower than the 32.32 times reported by Yong (1997), and significantly lower than the average 46 times documented in earlier studies by Dawson (1987) and Yong (1991). Offer for sale registered the highest mean over-subscription ratio of 31.89 times. Public issue register an average over-subscription ratio of 25 times. Combination of public issue and offer for sale registered the lowest mean over-subscription ratio of 20.94 times. It is interesting to note that both the lowest over-subscription ratio of 0.04 time (or 4 percent)

registered in 1992 and the highest over-subscription ratio of 122.55 times registered in 1995 belong to offer for sale. An over-subscription ratio of 0.04 time is a very rare occurrence indeed. It happened in 1992 when the Malaysian stock market was *quiet* in terms of trading activities. In fact, during 1992 the highest over-subscription ratio for offer for sale was only 25.08 times, the lowest value of maximum over-subscription ratio for offer for sale during the period 1991-1995. Year 1995 registered the biggest value of 25.52 times for minimum over-subscription ratio for offer for sale for the period 1991-1995. It also registered the biggest value of 122.55 times for maximum over-subscription ratio for offer for sale for the same period. This shows that offer for sale was very popular among new issue subscribers even though the Malaysian stock market was *bearish* in 1995 following the stock market crash in Janu-

ary 1994. It seems that investors in general turned to new issues due to lack of activity in the actual stock market. The popularity of offer for sale among new issue subscribers shown by it having the highest mean over-subscription ratio of 31.89 times for the period 1991-1995. However, statistically speaking, as shown by the *t*-values and their

appropriate *p*-values in Table 3, none of the types of issue compared shows a significant difference in their mean over-subscription ratios at the 5 percent level. The *F*-value of 1.673 and its corresponding *p*-value of 0.194 also indicate no significant difference in mean over-subscription ratios among the types of issue.

**Table 2**  
Characteristics of Over-Subscription Ratio According to  
Type of IPO and Year of Issue

Year	n	Over-subscription Ratio (times)			
		Mean	Std. Dev.	Min.	Max.
<i>Panel A: Public Issue</i>					
1991	5	18.34	16.20	1.45	43.78
1992	6	12.24	17.71	1.52	47.62
1993	2	19.65	2.87	17.62	21.68
1994	3	36.21	23.37	14.74	61.11
1995	3	53.96	24.03	31.98	79.61
1991-1995	19	25.00	22.39	1.45	79.61
<i>Panel B: Offer for Sale</i>					
1991	14	28.81	14.81	5.52	58.60
1992	12	11.66	8.35	0.04	25.08
1993	9	40.40	28.73	10.48	112.67
1994	14	31.21	18.20	10.39	75.14
1995	11	51.79	26.89	25.52	122.55
1991-1995	60	31.89	23.22	0.04	122.55
<i>Panel C: Combination of Public Issue and Offer for Sale</i>					
1991	1	9.60	n.a.	9.60	9.60
1992	7	14.63	11.18	2.46	34.94
1993	1	11.46	n.a.	11.46	11.46
1994	2	35.54	8.17	29.77	41.32
1995	3	32.86	39.37	7.46	78.21
1991-1995	14	20.94	21.13	2.46	78.21
<i>Panel D: Overall</i>					
1991	20	25.23	15.50	1.45	58.60
1992	25	12.63	11.41	0.04	47.62
1993	12	34.53	26.79	10.48	112.67
1994	19	32.46	17.56	10.39	75.14
1995	17	48.83	27.87	7.46	122.55
1991-1995	93	28.84	22.80	0.04	122.55

Note: n.a. not applicable

**Table 3**  
Results of the Independent t-test for the Difference in Mean Over-Subscription Ratios  
Between Types of Issue and the F-test for the Difference in Mean  
Over-Subscription Ratios Among Types of Issue

Types of Issues	t-value	p-value
Public Issues vs Offer for Sale	-1.137	.259
Public Issues vs Public Issues & Offer for Sale	.537	.595
Offer for Sale vs Public Issues & Offer for Sale	1.626	.108
F-value = 1.673		p-value = .194

Table 4 shows the characteristics of over-subscription ratio based on the size of offer and the type of offer. As indicated by the F-values and their corresponding p-values, the difference in mean over-subscriptions among sizes of offer, in each type of offer and overall, is not significant, even at the 5 percent level. However, it is interesting to note that both the smallest over-subscription ratio of 0.04 time and the largest over-subscription ratio of 122.55 times belong to the size of offer between RM20 million and RM40 million, in the offer for sale group. This shows that offer for sale is of a particular interest to new issue subscribers

based on this very wide range of over-subscription ratio. The lowest over-subscription ratio of 0.04 time is a very rare occurrence, and it might be due to the non-popularity of the issue<sup>3</sup> concerned among the investors. There are 26 new issues of offer for sale with offer size between RM20 million and RM40 million, the highest in number for offer for sale and in fact for the overall new issues. An offer size between RM20 million and RM40 million is not too large an offer size for the investors to fully subscribe and that might explain why many companies choose to offer new issues within this size.

**Table 4**  
Characteristics of Over-Subscription Ratio According to Size of Offer and Type of Offer

Size of offer (RM Million)	n	Over-subscription Ratio (times)			
		Mean	Std. Dev.	Min.	Max.
<i>Panel A: Public Issue</i>					
Less than 20	4	42.68	17.93	18.21	61.11
20 to < 40	5	18.31	11.29	1.83	32.79
40 to < 60	3	32.92	41.23	1.52	79.61
60 to < 100	5	20.35	20.30	1.45	50.28
More than 100	2	6.08	3.70	3.47	8.70
		F-value=1.331 p-value=0.307			

(continued)

Size of offer (RM Million)	n	Over-subscription Ratio (times)			
		Mean	Std. Dev.	Min.	Max.
<i>Panel B: Offer for Sale</i>					
Less than 20	18	37.23	20.78	1.40	75.14
20 to < 40	26	32.95	28.73	0.04	122.55
40 to < 60	9	27.07	12.52	11.13	47.30
60 to < 100	4	23.53	14.10	10.48	41.95
More than 100	3	16.35	10.90	5.49	27.28
		F-value=0.803    p-value= 0.528			
<i>Panel C: Combination of Public Issue and Offer for Sale</i>					
Less than 20	2	9.75	0.21	9.60	9.90
20 to < 40	4	21.62	17.30	2.46	41.32
40 to < 60	1	22.76	n.a.	n.a.	n.a.
60 to < 100	2	44.84	47.20	11.46	78.21
More than 100	5	14.95	11.87	6.44	34.94
		F-value=0.962    p-value=0.473			
<i>Panel D: Overall</i>					
Less than 20	24	35.85	20.73	1.40	75.14
20 to < 40	35	29.56	26.14	0.04	122.55
40 to < 60	13	28.09	19.92	1.52	79.61
60 to < 100	11	25.96	23.17	1.45	78.21
More than 100	10	13.60	10.32	3.47	34.94
		F-value    p-value=0.136			

Note: n.a. not applicable.

Table 5 presents the detailed characteristics of both the initial returns and the adjusted initial returns. The mean initial returns (offer-to-close) for the entire period was 87.73 percent (adjusted mean initial returns of 87.45 percent). The lowest mean initial returns of 35.92 percent (adjusted mean initial returns of 38.18 percent) was documented in 1991, and the highest mean initial returns of 158.85 percent (adjusted mean initial returns of 161.34 percent) was recorded in 1994. Mean initial returns and adjusted mean initial returns for each year and for the period 1991-1995 were all

significantly different from zero at the 1 percent level. Mean initial returns of 87.73 percent for the period of 1991 to 1995 was lower than the figure 166.7 percent documented by Dawson (1987), 167.4 percent reported by Yong (1991), and 114.6 percent by Ku Nor Izah Ku Ismail et al. (1993). However, the mean initial return is higher than that reported by Loughran et al. (1994) of 80.3 percent and Yong (1997) who recorded an average initial return (offer-to-close) return of 72.85 percent.

**Table 5**  
 Characteristics of Initial Returns and Adjusted Initial Returns, by Year

Year	n	Mean	t-test on mean initial return		Std. Dev.	Min.	Max.
			t-value	p-value			
<i>Panel A: Initial Returns (%)</i>							
1991	20	35.92	4.140	.001	38.80	-3.85	132.00
1992	25	44.43	5.343	.000	41.58	2.07	170.97
1993	12	127.76	5.470	.000	80.92	42.73	316.67
1994	19	158.85	10.879	.000	63.65	73.68	300.00
1995	17	104.61	11.665	.000	36.97	39.12	154.44
1991-1995	93	87.73	11.996	.000	70.53	-3.85	316.67
<i>Panel B: Adj. Initial Returns (%)</i>							
1991	20	38.18	4.499	.000	37.96	-1.66	135.92
1992	25	43.30	5.465	.000	39.61	4.99	165.04
1993	12	121.73	5.527	.000	76.30	38.48	301.26
1994	19	161.34	11.658	.000	60.33	83.35	289.09
1995	17	103.57	13.116	.000	32.56	44.09	148.11
1991-1995	93	87.45	12.321	.000	68.45	-1.66	301.26

Note: As indicated by the *p*-values, all mean initial returns and adjusted mean initial returns are significantly different from zero at the 1 percent level.

For the entire period of the study, the standard deviation of the initial return is 70.53 percent, with a minimum initial return of -3.85 percent (registered in 1991), and a maximum initial return of 316.67 percent (recorded in 1993). Year 1993 registered the biggest standard deviation of 80.92 percent, which could be explained by the *bullish* and volatile stock market during that particular year. The smallest standard deviation of 36.97 percent was recorded in 1995, which might be due to investors in general being cautious during that particular year following the stock market crash of January 1994. For the entire period 1991-1995, the standard deviation of the adjusted initial returns is 68.45 percent, with a minimum adjusted initial return of -1.66 percent (registered in 1991), and a maximum adjusted initial return of 301.26 percent (recorded in 1993). Year 1993 recorded the biggest market-adjusted standard deviation of 76.30 percent, perhaps as mentioned above due to the *bullish* and volatile market in

that year. As in the case of raw initial return, the smallest market-adjusted standard deviation of 32.56 percent is recorded in 1995.

Table 6 presents mean returns and adjusted mean returns for day-7, day-30, day-90, day-180, day-365, day-540, day-730, day-910, day-1095, for each year and for the entire study period. For the overall period 1991-1995, the mean returns for day-180 and day-365 are not significantly different from zero at the 5 percent level, whereas the mean returns for other intervals are significantly different from zero at the 1 percent level. The mean returns are negative for day-7 through day-180, but turn positive for the subsequent longer time intervals. However, the positive mean returns for time intervals day-365 through day-1095 are still lower than the mean initial return for the overall period 1991-1995 of 87.73 percent shown in Table 5. If we look at the adjusted mean returns shown in Panel B, they are all either significantly negative at the 1 percent level (for time



intervals day-7 through day-180) or *not* significantly different from zero, even at the 5 percent level. This means that *only* the successful subscribers of IPOs benefit from the under-pricing of the

IPOs; the investors who trade subsequently in the secondary market do not. This is consistent with the results documented by Yong (1997) and Barry and Jennings (1993) who both concluded that the

**Table 6**  
Mean Return and Adjusted Mean Return for Various Times Intervals, by Year

Year / Time Interval	1991	1992	1993	1994	1995	1991 - 1995
	Panel A: Mean Return (%) and Standard Deviation (%)					
Day-7	-24.61** (26.55)	-19.98** (23.31)	-0.43 (14.59)	-8.25 (19.72)	-8.17 (18.06)	-13.90** (22.73)
Day-30	-26.48** (26.48)	-21.14** (25.13)	4.16 (22.85)	-14.82** (19.77)	-3.69 (18.61)	-14.54** (24.88)
Day-90	-22.57** (30.62)	-17.51* (31.94)	11.15 (29.84)	-14.64** (26.57)	-3.05 (19.32)	-11.67** (29.80)
Day-180	-25.60** (30.02)	-12.01 (34.36)	34.82* (50.42)	-9.31 (22.93)	14.03* (23.07)	-3.58 (37.08)
Day-365	-32.14** (29.31)	27.96* (63.84)	23.29* (32.67)	-12.29 (25.96)	40.37* (63.90)	8.48 (54.57)
Day-540	-16.97 (43.01)	69.85** (92.37)	20.75 (39.04)	12.66 (45.90)	61.78* (90.32)	31.69** (76.09)
Day-730	41.85 (94.59)	131.12** (194.72)	9.84 (31.40)	11.78 (52.17)	24.47 (52.14)	52.40** (123.66)
Day-910	93.86** (143.84)	91.38** (132.86)	12.19 (27.47)	8.15 (41.03)	-10.34 (60.10)	46.10** (109.61)
Day-1095	127.46** (138.99)	87.57** (139.25)	39.93* (48.63)	-31.55** (42.52)	-58.69** (24.21)	38.93** (122.15)
	Panel B: Adjusted Mean Return (%) and Standard Deviation (%)					
Day-7	-24.03** (25.63)	-19.92** (22.89)	-2.85 (14.90)	-8.18 (18.33)	-8.56 (18.07)	-14.13** (21.94)
Day-30	-27.64** (25.67)	-22.25** (24.42)	1.51 (21.20)	-9.90* (16.51)	-5.69 (19.12)	-14.79** (23.84)
Day-90	-27.03** (25.79)	-20.15** (31.70)	-62 (22.49)	-6.48** (24.03)	-6.26 (19.99)	-13.78** (27.12)
Day-180	-33.61** (23.77)	-20.51** (32.99)	5.73 (38.08)	-7.05 (22.16)	4.64 (22.56)	-12.59** (31.25)
Day-365	-41.17** (25.42)	-4.22 (57.03)	-12.57 (24.40)	-4.61 (23.95)	26.08 (62.85)	-7.78 (48.12)
Day-540	-34.91** (37.26)	8.14 (84.67)	-11.18 (23.43)	7.14 (41.61)	43.61 (89.79)	2.69 (67.95)
Day-730	-.22 (79.88)	59.11 (187.51)	-20.06* (23.93)	2.34 (48.99)	25.92* (41.98)	18.47 (110.08)
Day-910	18.88 (135.13)	21.18 (133.02)	-21.68** (21.19)	1.17 (41.77)	14.02 (48.88)	9.76 (96.95)
Day-1095	25.96 (134.64)	24.96 (139.07)	-5.91 (42.58)	-10.71 (39.57)	-9.02 (27.29)	7.69 (98.70)

- Notes: 1) Standard deviations are shown in the parentheses.  
 2) \* Significantly different from zero at the 5 percent level.  
 3) \*\*Significantly different from zero at the 1 percent level.

benefits of under-pricing accrue almost entirely to the initial subscribers of IPOs. However, it should be pointed out here that Yong (1997) covers only a short period of seven days after the initial trading.

Table 7 reports initial returns and adjusted initial returns according to types of issues and year of issue. For the entire period 1991-1995, the

mean initial return for public issue was 87.28 percent (adjusted mean initial return of 86.79 percent). The highest mean initial return of 212.22 percent (adjusted mean initial return of 212.78 percent) was recorded in 1994 and the lowest mean initial return of 27.82 percent (adjusted mean initial return of 28.02 percent) was registered in 1991.

**Table 7**  
Characteristics of Initial and Adjusted Returns, by Types of Issues and Year of Issue.

Year	n	Mean	Std. Dev.	Min.	Max.
<i>Panel A: Public Issues</i>					
1991	5	27.82	46.60	-3.85	110.00
	(5)	(28.02)	(43.65)	(-1.66)	(105.22)
1992	6	35.63	26.90	10.00	86.57
	(6)	(35.08)	(27.39)	(4.99)	(86.15)
1993	2	191.04	177.67	65.41	316.67
	(2)	(184.82)	(164.66)	(68.39)	(301.26)
1994	3	212.22	106.79	93.33	300.00
	(3)	(212.78)	(95.06)	(106.30)	(289.09)
1995	3	95.55	46.42	52.90	145.00
	(3)	(96.84)	(41.59)	(56.05)	(139.19)
1991-1995	19	87.28	98.10	-3.85	316.67
	(19)	(86.79)	(94.42)	(-1.66)	(301.26)
<i>Panel B: Offer For Sale</i>					
1991	14	40.78	37.73	3.12	132.00
	(14)	(43.73)	(37.31)	(6.76)	(135.92)
1992	12	37.42	34.88	2.07	104.00
	(12)	(37.09)	(32.16)	(6.72)	(98.06)
1993	9	123.15	55.93	43.33	199.31
	(9)	(116.96)	(52.23)	(43.65)	(188.43)
1994	14	158.83	51.12	73.68	241.18
	(14)	(157.13)	(50.66)	(83.35)	(250.66)
1995	11	118.60	29.12	69.17	154.44
	(11)	(116.64)	(23.53)	(79.95)	(148.11)
1991-1995	60	93.34	64.34	2.07	241.18
	(60)	(93.21)	(62.52)	(6.72)	(250.66)
<i>Panel C: Combination of Public Issue and Offer for Sale</i>					
1991	1	8.42	.	8.42	8.42
	(1)	(11.44)	(.)	(11.44)	(11.44)
1992	7	63.99	58.82	12.00	170.97
	(7)	(61.00)	(56.97)	(7.63)	(165.04)
1993	1	42.73	.	42.73	42.73
	(1)	(38.48)	(.)	(38.48)	(38.48)
1994	2	106.93	44.37	75.56	138.30
	(2)	(113.66)	(36.55)	(87.81)	(139.50)
1995	3	63.34	25.73	39.12	90.00
	(3)	(96.84)	(41.59)	(56.05)	(139.19)
1991-1995	14	64.28	49.06	8.42	170.97
	(14)	(63.67)	(48.10)	(7.63)	(165.04)

Notes: 1) Adjusted initial returns are shown in the parentheses.

2) All mean initial returns are significantly different from zero at the 1 percent level.

For offer for sales, mean initial returns were from the low of 37.42 percent (adjusted mean initial return of 37.09 percent) in 1992 to the high of 158.83 percent (adjusted mean initial return of 157.13 percent) in 1994. The mean initial return for the entire period 1991-1995 for this type of issue was 93.34 percent (adjusted mean initial return of 93.21 percent).

For the combination of public issues and offer for sales, the mean initial return for the overall period was 64.28 percent (adjusted mean initial return of 63.67 percent). The lowest mean initial return of 8.42 percent (adjusted mean initial return of 11.44 percent) was recorded in 1991 and the highest mean initial return of 106.93 percent (adjusted mean initial return of 113.66 percent) was registered in 1994.

Table 8 reports both the results of the independent t-test and the F-test. The independent t-test is conducted to determine whether or not two types of issues compared are different in terms of their mean initial returns, whereas the F-test is used to test the overall difference in mean initial returns among the types of issues. The t-values and their corresponding p-values of the t-test indicate that none of the types of issues compared exhibit significant difference in mean initial returns or in adjusted mean initial returns. The F-values and the p-values of the F-test also indicate that the difference in the mean initial return and the adjusted mean initial returns among the types of new issues are not significant. This implies that regardless of the type of issue one subscribes to, one will earn more or less the same returns.

**Table 8**

Results of Independent t-test for the Difference in Mean Initial Returns between Types of Issue and the F-test for the Difference in Mean Initial Returns among Types of Issue

Types of Issues	t-value	p-value
<i>Panel A: Initial Returns</i>		
Public Issues vs Offer for Sale	-.313	.755
Public Issues vs Public Issues & Offer for Sale	.804	.428
Offer for Sale vs Public Issues & Offer for Sale	1.585	.117
	F-value = .963	p-value .386
<i>Panel B: Adjusted Initial Returns</i>		
Public Issues vs Offer for Sale	-.342	.733
Public Issues vs Public Issues & Offer for Sale	.837	.409
Offer for Sale vs Public Issues & Offer for Sale	1.654	.102
	F-value = 1.060	p-value = .351

Table 9 presents the correlation coefficients between over-subscription ratios and returns on different time intervals, for each type of issue. Panel A presents the results for the raw return, whereas Panel B reports the results for the adjusted return. For raw returns, *only* offer for sale indicates a significant positive correlation (a correlation coefficient of 0.442 and a *p*-value of 0.000) between initial returns and over-subscription ratios, at the 1 percent level. Offer for sale also registers a sig-

nificant positive correlation for day-365 (a correlation coefficient of 0.344 and a *p*-value of 0.007) at the one percent level. However, the correlation is significantly negative for day-730 (correlation coefficient of -0.308 and *p*-value of 0.017) and day-910 (correlation coefficient of 0.329 and *p*-value of 0.010) at the 5 percent level. For day-1095, the correlation (correlation coefficient of -0.385 and *p*-value of 0.002) is significantly negative at the 1 percent level.

**Table 9**  
Correlation Coefficient between Over-Subscription Ratio and Return of  
Different Time Interval

Time interval	Type of Issue			Overall (n=93)
	Public Issue (n=19)	Offer for Sale (n=60)	Combination PI & OFS (n=14)	
<i>Panel A: Raw Return</i>				
Initial	.310 (.196)	.442** (.000)	.127 (.666)	.382** (.000)
Day-7	.249 (.304)	.054 (.680)	-.028 (.924)	.087 (.408)
Day-30	.096 (.695)	.043 (.742)	-.033 (.910)	.049 (.639)
Day-90	.233 (.338)	.039 (.769)	.051 (.862)	.070 (.507)
Day-180	.374 (.114)	.077 (.556)	.067 (.821)	.121 (.249)
Day-365	.577** (.010)	.344** (.007)	-.211 (.469)	.228* (.028)
Day-540	.577** (.010)	.009 (.944)	-.114 (.698)	.125 (.234)
Day-730	-.090 (.714)	-.308* (.017)	-.303 (.292)	-.249* (.016)
Day-910	-.227 (.351)	-.329* (.010)	-.232 (.425)	-.284** (.006)
Day-1095	-.379 (.109)	-.385** (.002)	-.216 (.458)	-.351** (.001)
<i>Panel B: Adjusted Return</i>				
Initial	.334 (.163)	.442** (.006)	.148 (.613)	.391** (.000)
Day-7	.234 (.334)	.066 (.616)	-.022 (.914)	.090 (.390)
Day-30	.073 (.765)	.058 (.658)	.052 (.816)	.066 (.528)
Day-90	.220 (.365)	.063 (.631)	.083 (.777)	.086 (.414)
Day-180	.492* (.033)	.128 (.328)	.139 (.635)	.183 (.076)
Day-365	.673** (.002)	.229 (.078)	-.119 (.686)	.337** (.001)
Day-540	.694 (.001)	.159 (.234)	-.018 (.951)	.268** (.009)
Day-730	.313 (.191)	-.917 (.131)	-.007 (.981)	-.107 (.310)
Day-910	.078 (.750)	-.210 (.107)	.128 (.663)	-.119 (.255)
Day-1095	-.073 (.767)	-.231 (.075)	.159 (.588)	-.154 (.141)

Notes: 1) *p*-values are shown in the parentheses.

2) \* Significant at the 5 percent level.

3) \*\* Significant at the 1 percent level.

For public issue, the significant positive correlation between over-subscription ratio and its raw return at the 1 percent level *only* occurs at time interval day-365 (correlation coefficient of 0.577 and *p*-value of 0.010) and time interval day-540 (a correlation coefficient of also 0.577 and *p*-value of 0.010). For the combination of public offer and offer for sale, none of its correlation coefficients is significant at the 5 percent level.

Interestingly for offer for sale, in the case of adjusted return, a significant correlation between over-subscription ratio and return *only* occurs for initial return (correlation coefficient of 0.442 and *p*-value of 0.006), at the 1 percent level. For public issue, a significant correlation (correlation coefficient of 0.673 and *p*-value of 0.002) takes place for time interval day-365, at the 1 percent level. For time interval day-180, the correlation (correlation coefficient of 0.492 and *p*-value of 0.033) is significant at the 5 percent level. Just like the case of raw return, none of the correlation coefficients between over-subscription ratios and adjusted returns are significant at the 5 percent level.

## CONCLUSION AND IMPLICATION

The short and long-run performance of IPOs and types of issues of a sample of 93 firms listed on the Main Board of the KLSE from January 1991 to December 1995 are examined. This study documents a mean initial return of 87.73 percent for the entire study period. This mean initial return is significantly lower than the figure 166.7 percent reported by Dawson (1987), the figure 167.4 percent documented by Yong (1991), and the figure 114.6 percent reported by Ku Nor Izah Ku Ismail et al. (1993). However, the mean initial return is slightly higher than the figure 80.3 percent reported by Loughran et al. (1994) and the figure 72.85 percent reported by Yong (1997). The highly significant initial returns can mean one thing; successful subscribers to IPOs benefit substantially from the under-pricing of IPOs, assuming they sell their IPO stocks at the end of the first trading day.

The high initial returns of Malaysian IPOs suggest two possible explanations: either the

Securities Commission is too conservative in pricing the new issue or the Malaysian investors are too fond of new issues that they are willing to pay whatever price for the new issue. Our evidence suggests that indeed new issues in Malaysia are conservatively priced as shown by the after-market performances of these IPOs, where no significant abnormal returns can be received after the first day trading of the new issues. The second explanation is also true if we look at the over-subscription figures. The average over-subscription ratio is 28.84 times, which is slightly lower than 32.32 times reported by Yong (1997), and significantly lower than the average 46 times documented in earlier studies by Dawson (1987) and Yong (1991).

Offer for sale registers the highest mean over-subscription ratio of 31.89 times. Public issue registers an average over-subscription ratio of 25 times. Combination of public issue and offer for sale registers the lowest mean over-subscription ratio of 20.94 times. However, the independent *t*-test indicates that none of the types of issue compared shows a significant difference in their mean over-subscription ratios at the 5 percent level. The *F*-test also confirms the results of the *t*-test, that there is no significant difference in mean over-subscription ratios among the types of issue at the 5 percent level. Furthermore, the *F*-test shows that the difference in mean over-subscriptions among sizes of offer, in each type of offer and overall, is not significant, even at the 5 percent level.

In general, after-market mean returns are negative for each time interval examined, up to 180 days or six months. In the case of adjusted mean returns, this is true for up to 365 days or a one-year period. Eventhough returns seem to increase quite substantially after one year, this increase can be contributed to the increase in market performance in general. This is shown by the insignificant adjusted mean returns for these longer time intervals. This indicates that *extra* benefit of trading on the secondary market after the initial issues is somewhat *non-existent*. This is consistent with the results documented of Barry and Jennings (1993) and Yong (1997). They both conclude that the benefits of under-pricing accrue almost entirely to the subscribers of IPOs. Thus,

the results imply that an investor who succeeds in getting new issues is better off disposing the shares at the end of the first trading day to realize higher returns compared to if he holds the shares for an extended period of time then decides to sell them later.

When the issues are segmented into types of issues, the results do not show any significant difference in terms of initial returns among the three groups. This means that regardless of the type of issues one subscribes to, one will earn more or less the same initial returns.

Only offer for sale exhibits a significant positive correlation between its over-subscription ratio and its initial return in both raw return and adjusted return. This positive significant correlation is consistent with Yong (1997) who concludes that the larger the over-subscription ratio, the larger is the initial return. For its raw return, the correlation is still significantly positive for day-365 (one year later), but turns significantly negative for day-910 (2.5 years later) and day-1095 (three years later). However, for its adjusted return, correlation coefficients are not significant for longer time intervals. In the case of combination of public issue and offer for sale, none of its correlation coefficients is significant. Finally, in the case of public issue, its over-subscription ratio is significantly correlated with its raw return only for day-180 (one year later) and day-540 (1.5 years later). Interestingly, for its adjusted return, the correlation is significant for only day-180 (six months later) and day-365 (one year later).

Even though this study shows that the level of under-pricing is somewhat lower than that documented in earlier studies, it is undoubtedly still very high. The authority involved in the approval of the issuance of the IPOs should *perhaps* look again at the determinants used in arriving at the *intrinsic* value of an IPO in order to substantially reduce the under-pricing of IPO. The highly significant initial return can mean that the company which sells its IPO does not get the full amount of funds they should get from the subscribers of its IPO. Some might argue that by increasing the offer price of an IPO, it might reduce the number of investors willing to subscribe to the IPO. However, this concern is not fully substantiated because, in Malaysia, it is very rare that IPOs are not fully subscribed.<sup>4</sup>

## ENDNOTES

1. The Capital Issues Committee (CIC) was originally established in June 1968 as an informal KLSE's watchdog committee. It advises the Minister of Finance and the Registrar of Companies (ROC) on all matters relating to the securities industry. All proposals regarding new issues, offers for sale of securities, or the listing of securities have to be submitted to the CIC for approval. The CIC publishes the "Guidelines for the New Issue of Securities and the Valuation of Public Limited Companies" in order to inform the companies about its policies on new issues and valuation of new issues. The first edition of this publication was published in April 1986. There have been several revised editions since then. With the tabling of the Securities Commission Bill 1992 by the Minister of Finance in October 1992, the regulating functions of the CIC and the Panel on Takeovers and Mergers were taken over by the Securities Commission. The Securities Commission officially began operations on March 1, 1993. Thus, since March 1993, CIC's functions have been officially taken over by the Securities Commission.
2. This phenomenon is known as the size effect.
3. Zalik Bhd is the company with this lowest over-subscription ratio. It was listed on the Kuala Lumpur Stock Exchange on 30 January 1992. The offer size of this company is RM21.3 million.
4. It is not too strong a word to use if we say that IPOs in Malaysia are always over-subscribed many times over as shown by the very high over-subscription ratios, even during the bearish sentiment in the stock market in 1991, 1992, 1994 and 1995. This is also true during the economic downturn in the 1980's as shown in earlier studies conducted in the 1980's, cited in this paper.

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