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The Performance and Signalling Process of Initial Public Offers in Malaysia: 1980-1996

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ABSTRAK

Di Malaysia, saham-saham yang baru disenaraikan, pada kebiasaannya, mengalami proses penilaian harga di bawah paras harga sebenar berbanding dengan harga tawaran di lain-lain pasaran membangun dan sedang membangun. Hasil kajian ini mendapati purata pulangan luar biasa untuk hari pertama urusniaga adalah 135 peratus. Hari-hari berikutnya purata pulangan luar biasa merosot sedikit sebelum meningkat semula ujian "signalling" mendapati risiko ex-ante boleh menghuraikan paras "underpricing" di Malaysia.

ABSTRACT

Malaysian IPOs are, on average, substantially underpriced compared to underpricing in other emerging and developed market. The findings of this study suggest that this average abnormal return on the frist trading day is 135 percent, after which the returns decline slightly in the first week and gradualy increase thereafter. A test on possible signalling attributes of new issues to potential investors reveal that of all the suggested determinants, the ex-ante risk factor seems to explain the level of underpricing.

INTRODUCTION

Initial Public Offers (IPOs) or new issues of shares refer to the sale of ordinary shares to the public by previously closely held companies. New issues are avidly followed by public as short-term investment in Malaysia as most believe (with good evidence in the last 15 years) that such issues are substantially underpriced and would thus provide large returns at minimum risk. Over-subscription of most new issues also supports this belief as well. IPOs tend to be oversubscribed, on average about 46 times (Dawson 1987; Yong 1991), and many investors are unable to purchase shares at the offering price. Most buy from the stock exchange at the market price. Therefore secondary market performance is important to investors and it also sheds light on possible deviations between offer price and the first day market price.

An increase in the secondary market price will, for example, indicate that the initial price is understated. Companies resort to listing in public exchanges to refinance their expansion and to obtain less costly sources of new funds. When owners of a company have a considerable amount of wealth invested in the enterprise, and are interested to diversify their portfolios to add liquidity to their investments, they usually go public. Listing is a prelude to a longer-term push for expansion using the funds generated by IPO and then via rights and debt issues. However, the motive for seeking efficient source of financing through IPO is to take advantage of positive net present value investment opportunities by committing funds from new issues as real future investments.

The process of listing is quite involved in the emerging Malaysian market compared with developed markets. The Malaysian IPOs are authenticated by the Securities Commission, which examines and approves listing applications. The proposed issue price of the issuing company as determined by merchant bank(s) are often

varied by the approving authorities. No prospectus of any kinds is issued before all the approvals are in, following which public announcement is made for inviting applications with prepayments. Balloting and allocation of share are vetted by either one of available two issuing houses and listing is usually done a month after close of application. Only investors who bought shares at the offer price earn substantial returns over their investment. Second, the market may initially overprice the IPOs in the midst of public enthusiasm based on widespread belief of underpricing and over-subscription. Subsequently, the market corrects the overreaction and the market price will adjust downward to its true intrinsic value.

Third, the initial price increase in IPOs will be followed by a continuing price rise, which implies that the initial price increase does not fully reflect the amount of underpricing. An explanation for this behaviour is that underpricing creates demand for share which is self-generating. This view contradicts the efficient market hypothesis.

In Malaysia, Dawson (1987) reported positive initial gross returns of 166 percent on 21 New issues for the period 1978 to 1983. These returns declined over time, although price changes were still positive and increased at a smaller rate than the initial pricing. A more recent study by Yong (1991) on the behaviour of 33 new issues in Malaysia for the period 1983 to 1988 shows that the average return at the end of the first trading day is 167 percent but declines over time, consistent with Dawson's (1987) findings.

This study expands the previous IPO studies on the Malaysian market in terms of longer time period (1975 to 1996), larger sample size (100 firms) and document not only the short and long-run performance of IPO's but also examines the validity of Grinblatt-Hwang (1989) Signalling Model in the Malaysian IPO market.

REVIEW OF LITERATURE

Considerable research findings on pricing of IPOs in the developed (US, UK and Australia) and developing markets suggest an apparent underpricing. A summary of these studies is presented in Table 1.

It is reported that abnormal returns on day one are caused by investment banker's underpricing. Ibbotson (1975), Ibbotson *et al.*

TABLE 1
Summary of research findings on IPOs in developed and developing markets

Deveoped Market	Year of Study	Number of Issues Studied	Percentage Underpricing
US			
Ibbotson (1975)	1960-69	120	12.8
McDonald and Fischer (1972)	1969-70	148	28.5
Ritter (1984)	1977-82	1028	26.5
UK			
Buck, Herbert and Yeomens (1981)	1965-75	297	9.7
Australia			
Finn and Higham (1983)	1965-88	93	23
Developing Markets			
Malaysia			
Dawson (1987)	1978-84	21	166
Yong (1991)	1983-88	33	167
Singapore			
Dawson (1985)	1978-84	29	37.5
Koh, Loke, Phoon and Lim (1989)	1987-88	9	30.82

(1988) have documented that new issues are riskier than the average share in the market. Investment bankers therefore will try to reduce their risk and costs of underwriting by underpricing the issue. The persistent evidence of underpricing might also be due to the uncertainty about the real value of shares and the related need to offer investors compensation for assuming higher risk. However, Aggarwal and Ritter (1990) suggest that shares are issued at their instrinsic values and the prices are bid up by an overly optimistic market.

Baron (1982) assumes that investment bankers are better informed about investors demand for new issues, and therefore in most cases the issuing company delegates the pricing decision to them. However, the issuer compensates the banker for the use of his superior information by allowing the banker to offer new issues at a discount from the expected price after listing. Baron suggests that the discount is an increasing function of the issues' uncertainty about the market demand for new issues.

Rock (1986) explains the underpricing of IPOs using asymmetric information hypothesis. Rock suggests that the asymmetry of information is not between the issuer and their investment banker but between two groups of potential investors in the market: informed investors and uninformed investors. Rock posits that underpricing exits to lure uninformed investors who are uncertain about the value of the shares in the market and end up buying more of the overpriced issues and less of the underpriced issues compared to informed investors. Overtime, uninformed investors learn to anticipate this adverse selection and only bid if the offer price is far below their expected market price to compensate them for the expected losses of overpriced issues.

Underpricing of IPOs is also used as a signal of quality by firms with superior prospects. These firms signalled their expected good fortunes to the investors using a low IPO price and thus underprice the initial offering and make initial owners absorbed these "losses". This underpricing is a signal to investors that the issuer is a good performer and expects to cover the loss after their performance is realised. Good firms find it worthwhile to underprice their IPOs because it conditions investors to more favourably interpret subsequent financial results.

The speculative-bubble hypothesis also explains the excess returns of the IPO's. The speculative investors who could not get allocations of the oversubscribed new issues from the underwriters at the offering price or received fewer shares than they wanted will purchase additional shares after the secondary market trading begins. These purchases create a demand pressure after listing overprice new issues temporarily. This hypothesis implies that the initial positive excess returns of the IPOs should be followed by negative excess returns as the bubble bursts.

The Signalling Process of IPOs Using Grinblatt - Hwang Model

Grinblatt and Hwang (1989) developed a two-signals model (hereafter referred as GH) to explain the information asymmetry between the issuer who has better knowledge about the true value of his firm and outside investors who are uninformed. Firm value is assumed to be described by its future cashflows which may be measured by the expected value of cashflows (mean) and the dispersion of cashflows (variance). The two signals are needed to convey the firm's value because both mean and variance of the firm's cashflows are unknown. In the context of Leyland and Pyle's (1976) paper, the issuer signals the true value of the firm by retaining a proportion of the new issue, α, as the proportion of the equity to be retained, where α is > 0. Intuitively, it may be reasoned that by retaining a higher proportion of the total share capital, the issuer forgoes the diversification of his personal portfolio and thereby incurs signalling costs. Therefore, he will retain a significant ownership interest only if he expects the future cashflows to be high relative to current firm value, so rational investors will see the fraction of equity retained by the issuer as a signal of firm value. In a class of issuers with the same firm risk, a high-value firm is motivated to signal itself vis-á-vis a low-value firm by retaining a greater fraction of the total share capital. The marginal costs of signalling is lower for high-value firm and studies by Downes and Heinkel (1982) and Koh, Loke, Phoon and Lim (1989) corroborate this.

The second hyopothesis proposed by Grinblatt-Hwang model is that there is a positive relationship between the degree of underpricing and the level of ex ante uncertainty (proxied by

variance of returns) faced by investors. Beatty and Ritter (1984) and Rock (1986) provided evidence supporting this hypothesis.

Hwang (1988) has also suggested that high-value firms underprice their shares more than low-value firms knowing that they can recover what they give away at the IPOs when the true value of the firm is revealed after the issue date.

DATA AND METHODOLOGY

One hundred IPOs of Malaysian incorporated companies from the Industrial, Finance, Properties, Plantation and Tin sectors were chosen for the period 1980-1994. This allowed for the analysis of each IPO performance until 1996. Various issues of the Investors Digest, Daily Diary, and the company files from the Registrar of Companies were accessed for the required information. For each issue, the offer price and prices for the first day of trading, first week of trading, first month of trading, third month of trading, sixth month of trading and so on until the thirty-sixth month of trading are accumulated. The capitalisation and dividend adjusted price relative monthly data are used to calculate the rates of return for each issue. The New Straits Times (NST) Industrial Index is selected as the index of market performance because the industrial sector accounts more than two-thirds of the sample and more than 50% of market capitalisation of the Kuala Lumpur Stock Exchange (KLSE).

The effect of IPOs on the investors' wealth is estimated by computing holding period returns. An event study methodology is applied, with the listing date as day zero in event time. A period of 36 months after listing date is chosen to ascertain the long-run performance of the IPOs. The first day excess return, the short-run (up to 6 months) and long-run excess returns (from 7 to 36 months) are computed for each IPO. The first day return is computed by dividing the difference between closing price of the first trading day and the offer price with the offer price. This will proxy the degree of underpricing, D.

The event-study approach is well suited to address underpricing issue. The market-adjusted abnormal returns (AR) of each share (I=1, ...N) were calculated for different time periods using market returns from share market indices. The risk-adjustment procedure using market model risk parameters and market returns were not applied because of lack of historical time series of returns for new issues prior to their listing. Furthermore, Ariff and Johnson (1990) reports the relative superiority of market-adjustment procedure for calculating abnormal returns in the thinly-traded market where risk-adjustment made little difference.

$$AR = \frac{\Sigma[(Ri - E(R)]}{N}$$

where

AR : adjusted average returns
N : the number of firms i = 1...N analysed
Ri : rates of return of firm i at event time; and
E(R) : expected returns generated in two ways as described.

Multiple regression and correlation analyses are carried out to investigate the relationships proposed by the signalling hypothesis. The firm risk, σ^2, is proxied by the variance of the daily returns after listing. Firms size (FS) is measured by the product of the total number of shares outstanding and the offer price. The change in firm value, (ΔFV), is the percentage change in market capitalisation scaled by the ratio of the market index at the offer date and the listing date. Specifically, the change in firm value is computed by adjusting the percentage change in the market capitalisation between the offer date and the listing date by the change in the market index. The fractional holding of the issuer (or the insider shareholding), α is measured by the number of shares retained by the issuer divided by the total number of shares outstanding at the issue date.

HYPOTHESES TESTED

The following hypotheses on the performance and the signalling process of Malaysian IPOs are evaluated:

H_1 : The average first-day abnormal returns for the IPOs is positive.
H_2 : The abnormal returns after listing are small and insignificant.
H_3 : The value of the firm is positively related to the fractional holding of the issuer (α), holding the σ^2 variance constant.
H_4 : The degree of underpricing (D) is an increasing function of the variance, given the issuer's fractional holdings.

H_5 : The firm value is positively related to the degree of underpricing (D), given the issuer's fractional holdings (α).

FINDINGS

Short and Long-run performance of IPOs

i) First day performance of IPOs

TABLE 2
Percentage abnormal returns of Malaysian IPOs on the first day of trading: 1980-1996

Mean	135
Std. Deviation	111
Coefficient of variation	0.82
Minimum	4.7
Maximum	563

Table 2 summarises the average first day market-adjusted abnormal returns of new issues. The first day return is 135 percent, with a minimum of 4.7 percent and maximum 563 percent and a volatility of 111 percent. The high degree of underpricing is consistent with previous documented evidence. This finding supports H_1, that the first-day underpricing is significantly larger than normal. However, it is possible that the shares of IPOs are issued at their intrinsic values and these prices are bid up by demand pressure in an optimistic market. This is ascertained by analysing the longer term performance.

ii) Post Listing Performance of IPOs

a) Short-run performance

TABLE 3
Short-run underpricing of Malaysian IPOs relative to the offer prices

First Day	First Week	First Month	3-Months	6-Months
135%	122%	128%	129%	133%
(t=8.67)*	(t=8.91)*	(t=9.52)*	(t=8.36)*	(t=9.33)*

*significant underpricing at or better than 0.05 probability levels

The short-run performance refers to the price performance of IPOs from the close of the first trading day to six months after listing. Table 3 summarises the average abnormal returns up to six months of trading. At the end of the first day, an average of 135 percent of abnormal returns were observed. At the end of first week of trading, the public offers recorded are 122 percent abnormal returns. There is a slight decline compared to the first day of trading, possibly due to profit taking activities of investors who cash in their new issues. After the first week, there is a slight upward trend in the abnormal returns at the end of first month (128%), third month (129%) and sixth month (133%). Generally, the IPOs showed a significant abnormal returns at the end of the first trading day which declines slightly at the end of first week and recovers at the end of the sixth month. These findings support the first hypothesis. This implies that most IPOs are inefficiently priced at their intrinsic value and the optimistic expectations of investors cannot completely explain the large abnormal returns observed at the end of the first trading day.

b) Long-run Performance

Long-run performance refers to the price performance of IPOs from the seventh to the thirty-sixth month of trading. Table 4 summarises the average abnormal returns in the long-run. The average abnormal returns at the end of the seventh month to the first year is 133 percent, at the end of the second year is 94 percent and at the end of the third year is 77 percent. The average abnormal returns in the long-run are almost half of those in the short-run, consistent with the demand pressure hypothesis. The findings imply that the long-term performance of new issues is positive and significant, inconsistent with the findings of Finn and Higham (1983).

TABLE 4
Long-run underpricing of Malaysian IPOs relative to offer prices

7th month to 1 year	2-year	3-year
133%	94%	77%
(t=8.18)*	(t=6.00)	(t=4.7)*

*significant underpricing at or better than 0.05 probability levels.

Table 5
Summary Statistics

Variables	Mean	Std Dev.	Min	Max
Underpricing	132%	133%	-2%	569%
Insider70% Shareholdings	11%	0%	89%	
Firm size	RM77.6m	RM66.3m	RM5m	RM1200m
Issue size*	RM17.96	RM14.56m	RM2.4	RM203.9m
Sample size = 100				

*Issue size refers to the size of IPO defined as the total number of shares offered to the public multiplied by the offer price

The Signalling Process of IPOs

Table 5 provides summary statistics of the sampled firms with regard to the variables of the signalling process. The average underpricing is 135 percent and average amount of retained equity is 70 percent, which ranges from zero to eighty nine percent.

To examine the testable implications of the GH model, correlation and multiple regression analysis were used and the findings are presented in tables 6 and 7 respectively. Table 6 shows that there is statistically significant positive correlation between firm risk, σ^2, and degree of underpricing, D. There is also a significant positive correlation between firm risk, σ^2, and change in firm value, Δ FV. There is a positive but not significant correlation between level of insider shareholding (α) and change in firm value (Δ FV). These relationships are further supported by results of the regression analysis.

TABLE 6
Correlation coefficient Matrix

	α	D	σ^2	FS	ΔFV
α	1.00				
D	0.30	1.00			
	(4.15)**				
σ^2	0.24	0.93	1.00		
	(2.56)	(268.89)*			
FS	0.20	0.15	0.08	1.00	
	(1.75)	(0.968)	(0.271)		
ΔFV	0.23	0.83	0.70	-0.04	1.00
	(2.45)	(93.00)*	(0.067)		

Note: F-statistics in parentheses
*significant at 1% level
**significant at 5% level

Table 7 shows a set of three regression results. In regression 1, the change in firm value is negatively related to the level of insider

TABLE 7
Test of Grinblatt - Hwang model on Malaysian IPOs

Dependent variable	Independent Variables						
	Intercept	α	D	σ^2	FS	Adj R	F
Regression 1							
ΔFV	0.0502	-0.142	0.641	-	-	0.68	68.6
	(0.154)	(-0.780)	(0.000)				
Regression 2							
D	0.327	0.716	-	0.41	-	0.87	21.5
	(0.264)	(0.086)	(0.000)				
Regression 3							
ΔFV	0.156	-	1.117	-0.076	1.450D09	0.76	66.9
	(0.237)	(0.000)	(0.000)	(0.002)			

Note: p-value in parentheses

shareholdings, when firm size is controlled. However, the relationship is not statistically significant (coefficient = -0.142, p-value = -0.780). These findings are inconsistent with the prediction of the GH model which suggests that insider shareholdings signal firm value.

Regression 2 shows when firm size is controlled, firm risk is a good explanatory variable for the degree of underpricing (coefficient = 0.141, p-value = 0.000). There is no statistical relationship between the degree of underpricing and level of insider shareholdings (coefficient = 0.716, p-value = 0.086) at 5 percent level, which is consistent with the prediction of the GH model.

In the third regression, when the level of insider shareholdings is controlled (which is also predicted to be related to firm value), the change in firm value is an increasing function of degree of underpricing (coefficient = 1.117, p-value = 0.000). Although the results of the correlation and regression analysis support two of the three testable implications of the GH model, the change in firm values are estimated from the change in values between two discrete points in time. Therefore, an analysis of abnormal returns of the sampled firm over the sampled period using even-study methodology was carried out to substantiate the above analysis.

To examine the abnormal returns of the sampled firms beyond the listing date, the sample was partitioned into groups based on the level of insider shareholdings and the degree of underpricing. The number of grouping was determined based on the distribution of the variables.

For the sample based on insider shareholdings, 35 IPOs were in the average category, 30 in the high and 35 in the low category respectively. The findings presented in Table 8 show that none of the abnormal returns in the three categories of insider shareholding are statistically significant, consistent with the results of the regression analysis and inconsistent with the prediction of the GH model.

For the grouping based on degree of underpricing, 25 IPOs in total were categorised in the very high and high categories respectively, 25 in the average categories and 50 in the low category. The findings summarised in Table 9 show that only the average abnormal returns for the law category are statistically significant over the three years period. These findings are anomalous to the prediction of the GH model but are consistent with the findings on the Singapore market (Koh, Loke, Phoon and Lim 1989).

CONCLUSION

The short and long-run performance and the signalling process of a sample of 100 Malaysian IPOs were examined. The findings suggest that the average abnormal return on the first trading day is 135 percent, after which the returns decline slightly in the first week and gradually increase thereafter. The long-run returns decline gradually to about 43 percent of the first day returns but is positive and statistically significant. Those investors who received the new issue from the issuing firm earn and average abnormal returns of 133 percent after one year and the returns decline to 77 percent after 3 years. This

TABLE 8
Average daily market-adjusted return for IPOs
in the post-listing-categorised by α, the insider shareholdings

Category	Average daily market adjusted returns		
	Year 1	Year 2	Year 3
High			
($80 < \alpha < 89$)	-0.279%	-0.21%	-0.302%
	(-0.585)	(-0.042)	(-0.0312)
Average			
($70 < \alpha < 79$)	0.263%	0.83%	0.195%
	(1.054)	(0.372)	(0.276)
Low			
($0 < \alpha < 69$)	0.034%	0.146%	0.123%
	(0.121)	(0.196)	(0.178)

Note: t-statistics in the parentheses

TABLE 9
Average daily market-adjusted return for IPOs in the post-listing period. categorised by D, the degree of underpicing

Category	Average daily market adjusted returns		
	Year 1	Year 2	Year 3
1. Very high underpricing (D > 100%)	-0.593% (-0.708)	-0.716% (-1.020)	-1.033% (-1.061)
2. High underpricing (51% < D < 100%)	-0.321 (-0.883)	-0.467 (-0.835)	-0.500 (-0.770)
3. Average underpricing (31% < D < 51%)	-0.224 (0.845)	-0.191 (-0.549)	-0.428 (-1.40)
4. Low underpricing (0 < D < 30%)	0.558 (3.189)*	0.451 (1.854)**	0.549 (2.119)**

Note: t-statistics in parentheses
* significant at 1% level
** significant at 5% level

suggests that, on average, the IPOs are either substantially underpriced or there are other factors not accounted for that sustain the underpricing on the long-term basis. The first reasoning is plausible because even if the IPOs are substantially underpriced, the market would eventually price the issue fairly through the arbitrage process in a very short span of time. It is highly likely that the sustained underpricing of Malaysian IPOs is due to the economic policy of the government which requires at least 30 percent of each tranche of new issues to be allocated to designated group of investors or institutions owned by them, in view to correct the imbalance in the investment capital ownership among the different ethnic groups of the population. The offer price is usually intentionally fixed at a level that will ensure a benefit to those allocated the shares because the listed price is usually highly fuelled by the demand pressure. A moratorium is usually imposed on these groups not to sell the shares immediately for short-term gains, which could explain the long-term positive returns on these shares.

For the signalling process of IPOs only two of the three testable implications of the Grinblatt-Hwang Model are supported. The regression and correlation analysis showed that there is a significant positive relationship between firm risk and level of underpricing and change in firm value and underpricing. However, the results of the abnormal returns analysis are inconsistent with the prediction of the model. In general, the Grinblatt-Hwang Signalling Process Model does not fully hold for the sample of Malaysian IPOs. This could be due to the difference in the market structure and sophistication of investors, who do not perceive the implication of certain factors in a similar manner as those in developed market where the model was developed. This suggests that the model requires some refinements involving the attributes of an emerging stock market and less sophisticated investors.

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