ANALYSIS OF UNDERPRICING IN THE MALAYSIAN NEW ISSUES MARKET DURING 1975-1990: ARE NEW ISSUES EXCESSIVELY UNDERPRICED?[1]

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1. INTRODUCTION

A total of about RM10 billion, which is equal to 20 percent of Malaysian gross national savings, was raised in 1992 through sale of shares by companies that were listed as new issues on Kuala Lumpur Stock Exchange (KLSE). The average oversubscription for new issues during 1975 to 1990 is 35 times the offered tranche, which works out, for an average applicant, to a mere three percent chance of being allocated. Investors and speculators believe that new issues generate lucrative and assured returns. This is evidenced by a record number of 56 new issues consisting of 12 on the Main Board and 44 on the Second Board being listed in 1993. Chasing after these new issues is considered a prudent investment behaviour. This perception is also reinforced by reported findings that in Malaysia new issues are underpriced 7.5 times the average normal returns in the stock market. How accurate is this common perception of excessive underpricing?

This paper attempts to answer this question by analysing underpricing of 65 new issues over 16 years to 1990, and studies the gains to short-term speculators and long-term investors. Specifically, the extent of underpricing in this market is assessed and the reasons offered by theories for the attractiveness of new offers are traced in Section 2. Section 3 describes the data and research methodology. We then proceed to examine the policy issues arising from

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the empirical findings reported in this paper. The findings reported in Section 4 support the conclusion that the average return in the Malaysian new issue market is 21 percent per annum in the long-run although the first day's underpricing is 135 percent! There is no evidence of excessive underpricing in the longer term.

2. THE RESEARCH QUESTION

Malaysian laws define sale of increased share capital of a company as *new issues*. The offer of existing shareholdings to public is defined as *sale of shares*. New issues market therefore consists of new issues and sale of shares of private companies and government-linked enterprises to the public.[2] New issues are subjected to public scrutiny by the investment bankers (any one or more of the 12 merchant bankers in Malaysia), the Securities Commission (Capital Issues Committee prior to March, 1993), the Registrar of Companies and KLSE. Regulators take elaborate care in the approval of new issues to ensure public interests are safeguarded, and the approval process may take up to a year in a larger placement. The average time for approval is estimated to be 16-24 weeks against a much shorter time of 1-8 weeks in developed markets in Australia, United Kingdom and United States.[3] Because of the longer time taken to approve new issue applications, there is first the higher risk of the stock market conditions changing relative to prices fixed at the time of opening applications. This may be termed the *approval delay risk* in the new issues market. Second, the application money is not returned to applicants for about 2 months after invitation to apply, which accrues an opportunity cost.

Approval delay risk

Approval delay risk due to application processing delay is much higher in Malaysia than in major markets, where the regulations are more flexible, and approvals therefore are speedier. While regulations in Malaysia ensure that no documentation is released to investors until application is approved, regulators in major markets permit investment bankers to offer new issues on a non-binding basis through the so-called *red-herring offers* to obtain investor's

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[2] *Out of the 65 issues included, 13 are government-linked enterprises.*

[3] *Malaysian laws regulating companies and investment banking come from a number of acts of Parliament. These are Securities Industry Act 1983, Companies Act 1965, Bank and Financial Institutions Act 1989, and the Securities Commission Act 1993. Malaysia's penal code include provisions for prosecuting criminal acts in commercial activities. Civil redress can be obtained under common law and contract law action.*

assessment of the value of the offer. Therefore, investment banks start *building-books* before the application is approved. This is designed to reduce the extent of risk of (a) offer price being too high or too low and (b) estimating the likelihood of undersubscription or failure of off-take of new issues.

To reduce their own risk of undersubscription of new issue, investment bankers and regulators have greater incentive to reduce the offer prices in Malaysia's emerging market since the market conditions do change substantially between the time a price is determined and the actual time of approval.[4] Given the generally higher returns in the new issues market in Malaysia, the risk of failure of new issues is much lower than in major markets. This probably explains the very low underwriting fee of about one percent for managing flotation compared with three or more percent in other markets. This risk of undersubscription of issues is termed the *underwriting risk*.

underwriting risk
• low under subscription risk
• low underwriting fees

It is found in this study that insiders (that is, the existing shareholders of the company) offer an average of 30 percent of existing shares to outsiders, therefore, preferring to keep 70 percent for themselves. Offering new issues to outsiders help raise finance for expansion and obtain less costly sources of new funds. Companies listed in the New York market raise capital at lower cost, the savings from which amount to three-quarters of one percent compared to unlisted companies. By the same logic, when owners of a company have considerable amounts of wealth invested in a company, and are interested in diversifying their portfolio to add liquidity to their investments, they usually offer new issues to reduce their own exposure to risk. Given this financial economics of owning a company, the owners of companies are willing to pass part of their profitable real investments in the company by reducing their proportion of shares in the company. Hence, the new issue applicants making a bid to own part of these 30 percent of equity of companies can therefore expect to obtain true value, and thus a higher return than in alternative investments in the secondary market.

[4] *Ariff and Johnson (1990: p. 15) documents the relative volatility of Asian share markets. Standard deviation of rates of return of KLSE over 1980-1990 is about 31.9 percent per annum against 13 percent in the New York Stock Exchange. Price changes in the Malaysian share market are two-and-half times more likely even if the approval takes same time. Since self-listing is not permitted in Malaysia, all companies appoint investment bankers to make application (i) to the Securities Commission for approval for issuing prospectus to investors for sale of shares and (ii) to the KLSE for permission to list the company.*

Insider value factor.

Purchasers of shares listed in the secondary market cannot obtain this value. This is the *insider value factor*, which renders offer prices lower to yield a higher new issue return. Our scrutiny of the prospectuses of all companies listed between 1975 and 1990 in this study indicates that management's main purpose for listing is to get funds for business expansion, which would not be possible without sharing a little of the value of the company – by releasing 30 percent of equity – with the outsiders, who apply for new issues. Note that this third factor should make the new issues market more profitable, holding other things constant: the first two factors being the approval delay risk and underwriting risk. The longer-run annual return inclusive of dividends in the secondary market is 18 percent.[5]

Over-subscription of most new issues keeps feeding the frenzy for new issues. Earlier studies suggest over-subscription to average 46 times (Dawson 1987 and Yong 1991). A majority of applicants are unable to purchase shares at offer prices as there is roughly a one in 35 chance of winning an allocation as reported in financial press and official reports: we use a 35 times over-subscription rate as an average over 16 years. The evidence over the last 16 years suggest that not a single new issue failed to provide a positive rate of return over a six month holding period.[6] Consistent with other markets, most of the new issues are listed at the peak of market cycles, probably to reduce the underwriting risk. New issues are priced by the market at a much higher level than would be the case if the new issues were (i) equally likely to be issued in bull or bear markets and (ii) there is no frenzy in wanting to subscribe to new issues.

Short-run price pressure.

Because of the frenzy, there is price pressure during the initial few months, which keeps the prices artificially higher during this period. By the same token, one would expect the prices in the new issues market to attain normal levels *after* the initial period of some months, when normal prices, unfettered by price pressure, begin to emerge. This line of reasoning suggests a fourth risk namely, the *short-run price pressure.* Only speculators stand to gain by buying and disposing over the short period when the prices are artificially high, whereas the long-term investor's prices are the ones that prevail after the price pressure has abated.

[5] *This estimate made by Annuar (1991) is based on all listed companies over 1975-1989, and was extended to 1992 and found to be 18 percent per annum.*

[6] *The only new issues to go below the offer price during initial days was that of Malaysian International Shipping Corporation Bhd: the issue was oversubscribed on trading day by 1.13 times only. The poor performance was due to a sudden market correction after the end-1985 Pan El Affair involving share fraud by a group of insiders. Prices recovered later.*

A fifth risk factor arises from (a) opportunity cost on money tied up over the interval from application time to return of the application money shortly before the listing day in unsuccessful applications and (b) the likelihood that an investor is unsuccessful in application: Rock (1986) proposed this factor. It is estimated that application money is tied up for a period of about two months, and that the probability of allocation is 0.03[7] A simple calculation using commercial bank's average deposit rate of about seven percent per annum over two months would show that a RM10,000.00 application would lose RM167.00 if no shares are allocated. A single successful allocation for RM10,000.00 would have to earn 35 times the opportunity cost to break-even the losses incurred as opportunity cost. If the allocation ratio is smaller than the lot applied, the opportunity cost is even higher. However, we do not take this into account. Thus, new issues are not without a high price risk in any market, let alone in Malaysia.

Opportunity cost

3. RESEARCH DATA AND METHODOLOGY

To investigate the new issues behaviour on the KLSE, 65 new issues between 1975 and 1990, which had all the required information for analysis, were studied. Public records in various issues of Investors Digest, Daily Diary, and the company files from the Registrar of Companies were accessed to obtain values for the variables. For each new issue, the offer price and prices on the first day, first week, first-, third-, sixth-month of trading and so on until the thirty-sixth month of trading were extracted. The capitalisation and dividend-adjusted monthly price relatives were used to calculate the rates of return for each new issue. The KLSE Composite Index, which is a value-weighted price average, was used as a market proxy, and it represents all the sectors.

Next, for each new issue, we calculated the rate of underpricing over (a) a shorter time period of less than 12 months, (b) a longer time period over the next two years and (c) adjusted the rate of return of each new issue by subtracting price changes in the overall market. (a) and (b) enable us to distinguish short and longer term price changes respectively while (c) enables us to calculate the return due to the new issue adjusted for the general price movement in the overall market. The Ball and Brown (1968) event study method was used. This provides the

Ball & Brown (1968)

[7] *There are few markets where new issues trade on "when issued basis". New issues start trading within a day or two of application being closed. Applications may be permitted without the ready cash basis especially if there is a bank account, which can be vouched. In this way some regulators (Singapore is one) has reduced this risk considerably. Malaysian regulators are studying the introduction of when-issued basis of listing.*

framework for computing market-adjusted average return, AR_{it}, over different time periods (eg. first day, first week, first month, etc.).[8] By cumulating the average AR_t for all the companies (i=1, ... 65) over time from t = 1, ..., 36 months, we could address the new issue behaviour over short and long time periods. Finally, we calculated the underpricing and compared this with the overall market return of 18 percent per annum as a benchmark for measuring the underpricing (a) over short and long runs and (b) other markets.

market return = 18%.

The formula for cumulation is:

$$CAR = \Sigma_{t=1,\dots\dots,T} AR_t \qquad (1)$$

where CAR is the cumulative average market-adjusted returns over time. We plotted the CAR from issue date to 36 months after issue date. This revealed that the prices declined after about 12 months suggesting a high return in the short-run and a lower return in the long-run. The test hypothesis of underpricing (H_1) can now be extended to test the price pressure hypothesis (H_2) as follows:

H_1: The average first-day abnormal returns for IPOs are positive; and

H_2: Abnormal returns in the long run are less than average returns in the short run.

The null of H_1 is expected to be rejected, which will reconfirm the already existing evidence that new issues are underpriced. The null of H_2 is expected to be rejected in favour of the alternative hypothesis that the long-run returns are lower than the short-run returns: this is already evidenced by the CAR analysis. Demand pressure can then be attributed as the main reason for underpricing so that, for an investor, the longer term lower return is the relevant rate of underpricing. Therefore, the short-run higher returns can be deemed as returns to speculators. One study provides evidence that long-run returns in the American new issue market are lower than short-run returns: Aggrawal and Rivoli (1990).

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[8] *The return is calculated as the difference in prices over any two periods expressed as a percent of the previous period's price; R_{it}. The difference between the two is the rate of return to new issue: $e_{it} = R_{it} - R_{mt}$. AR_{it} is the average of e_{it} over all the 65 issues. If prices are not affected by price pressure, the e_{it} will be about the same over the short and long runs. Measured against the offer prices, price pressure means that the long-run AR_{it} will be smaller than the short-run ones. These are then statistically tested. Aggrawal and Rivoli (1990) were the first authors to detect the decline in prices in the longer run.*

4. COMPARATIVE FINDINGS AND DISCUSSION

(i) Findings

New issues in Australia, United Kingdom, United States and other developed markets and in Malaysia, Singapore and other developing markets are substantially underpriced because offer prices appear to be a deep discount of the initial listing day market prices. But the extent of underpricing is smaller in the developed markets compared with the developing markets. Australia's underpricing of 22 percent is 1.7 times the return in its secondary market of 13 percent: the ratio for United Kingdom and United States are 1.75 and 1.32 respectively. Those numbers work out to an average ratio of 1.6 for developed markets: see Ariff and Chung (1993) for more details. The short-run underpricing of 135 percent in Malaysia is 7.5 times the normal secondary market return of 18 percent. The corresponding ratio for Singapore is 2.60. Hence, the gain in the new issues market in Malaysia appears to be high.

These findings are widely documented in studies which covered the initial or short-run pricing periods of about 6-12 months only, and not over the longer period of beyond one year relevant for our discussion. Market conditions arising from demand pressure in the short-run may account for the increasingly reported regularity of a longer run decline in the prices of new issues. Our analysis is over short-run and long-run periods.

(ii) Short and Long-run Performance of New Issues

The extent of underpricing over the first 6 months is summarised in Table 1.

TABLE 1

MALAYSIAN NEW ISSUES UNDERPRICED OVER INITIAL PERIOD: 1975-90

First Day	First Week	First Month	Third Month	Sixth Month
135%	122%	128%	129%	133%
(t = 8.67)*	(t = 8.91)*	(t = 9.52)*	t = (8.36)*	(t = 9.33)*

* Significantly underpriced: 0.05 probability or better levels.

The average refers to market-adjusted return in the Malaysian new issues market over sixteen years. The first-day average excess return is 135 percent: this number is different from other published reports, which covered shorter periods and fewer new issues.[9] There is a slight downward pressure in the first week and month, but prices recover enough to the first-day level over the six months. Judging by the high t-values shown in the brackets, the returns are significantly larger than zero at 0.05 level. Hence, underpricing hypothesis cannot be rejected. Therefore, short-run average return is about 130 percent of the offer price.

The lowest underpricing among the 65 cases was 4.7 percent and the highest was 563 percent with a volatility of 111 percent! There are no issues that were marked below the offer price in this market. This would ensure that no speculator who held a new issue for 6 months lost any money. Regulators and investment bankers priced new issues such that the new issues market yielded positive returns, substantiating the public perception of handsome rewards for investment in new issues listed on the KLSE. Speculators tend to gain a high rate of return by holding in the short-run only.

Is this a correct interpretation? First, the relevant return for an investor is the long-run return and not the initial period underpricing, which reflects the effect of short-run price pressure. Second, this assumes that every investor gets all the shares he applied for. If the chance of allocation is one in 35 for a small investor (it is more favourable for large-sized applications), then, for the average investor to break-even, 1.86 successful strikes out of the 65 new issues are needed. This means that in 63.14 cases, he does not get any allocation, and loses an average of RM167.00 per issue in opportunity cost by tying up his money during application time. The total loss for the hypothetical average investor is 63.14 multiplied by RM167.00 which equals RM10,545.00 against a gain of RM25,110.00 at the rate of 135 percent return on investment of 1.86 multiplied by RM10,000.00. The net gain is RM14,565.00 on an investment of RM18,600.00 or a net return of 78 percent and not 135 percent! Since the allocation ratio applied is likely to be less than the full lot applied for, the net return of 78 percent has to be accordingly reduced even further: if the allocation ratio is 50 percent only, then the net return would be 39 percent and not 78 percent.

Now we examine the long run return behaviour: see Table 2 below. Here the returns are calculated over the offer prices from the seventh to twelfth month and then over the next two

[9] *The reported figures of 166% (Dawson, op.cit.) and 154% (Yong, op. cit.) are higher as their studies are over shorter time periods. Also, they did not correct for market cycles and trends over time.*

years. Note that the prices were sustained at the initial price levels up to the end of first year: 133 percent. However, underpricing gain over long-run is actually 94 percent if the investor held it for two years.

TABLE 2

LONG-RUN UNDERPRICING IN MALAYSIAN NEW ISSUES MARKET: 1975-90

7th month to 12th month	Two Years	Three Years
133% (t=8.18)*	94% (t=6.00)*	77% (t=4.70)*

* Significantly underpriced: 0.05 or better probability levels.

At the end of three years, the underpricing is actually only 77 percent. Hence, if we compare the short run gain of 135 percent against the 94 or 77 percent respectively in two year, and three year periods, it can be shown that the long-run equilibrium prices, and hence the returns on the new issues market, are significantly lower than the short-run price-pressured temporary returns. Judging by the high t-values, which are for differences of these returns relative to the short-run return of 135 percent, the alternative hypothesis of H_2 cannot be rejected. The long-run return is 77 percent at the end of the three year period. Hence, the alternate hypothesis, H_2, is accepted.

Is a 77 percent return over three years a high return? We compute the profits from 1.86 successful allocations for a RM18,600.00 investment against the cost of bidding for 63.14 unsuccessful bids. The net return is 21 percent per annum over a three-year period.[10] The long-run return from holding new issues is only slightly more profitable (assuming a full and not partial allocation) than the 18 percent rate of annual return in the KLSE over the 1975-1990 period! Hence, for a long-term investor, the rate of return in the new issues market is not excessive as commonly perceived. It is only marginally higher than normal return. If the hypothetical investor is applying for larger lots, the probability of allocation is likely to be higher than three percent. Larger investors will therefore reap higher returns even after costs because of the higher odds of being allocated.

[10] *This is the geometric annual return based on the 77% returns over the three year period.*

(iii) Discussion and conclusion

Malaysian regulators appear to have put into place a mechanism for intervention in the stock market listing process to achieve positive rates of return in all new issues. Unlike other markets, where about a third of all new issues yield negative returns to applicants, Malaysia's new issues have never yielded a negative return relative to the offer prices over any period. Even then or perhaps because of this, the public perception of lucrative gains have been fanned by inaccurate analysis of previous research on this subject, which estimated the gains to speculators and not to long term investors.

Findings from this comprehensive study suggest that the average excess return on the first trading day is no doubt lucrative at 135 percent, which is the largest reported for any country. However, this high return is only 78 percent over the offer prices net of opportunity cost. Since this rate of return accrues to speculators while the investors holding new issues over three years obtain only 21 percent per annum, we conclude that the Malaysian new issues market does not generate excessive returns in the long run. Specifically, the low allocation ratio for small investors, given the high application interest, makes the issue not much more attractive than trading on a well-diversified portfolio in the secondary market on the Malaysian bourse. Hence, the large underpricing gain is driven mostly by the short-run price pressure, and is not entirely the result of normal factors arising from the other four reasons advanced in theory. Increasing the allocation ratio to a higher rate of application lots for small investors could improve the profitability for long-term investors.

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