Market Reaction to Actual Share Repurchase in Malaysia

Mansor Isa*, Zaidi Ghani and Siew-Peng Lee

Abstract

This paper examines share price reaction surrounding actual share repurchases made by Malaysian listed firms from 2001 until 2005. Using event study methodology and the market model, the evidence indicates that a significant increase in share prices occurs in a three-day period beginning from the repurchase day. We also find evidence that there is a general price decline in the pre-purchase period that suggests that firms made their repurchase after a period of consecutive price declines. This evidence clearly indicates the existence of a signalling effect and is consistent with the undervaluation hypothesis. It also indicates that the share repurchase programme can be used as an effective tool for price stabilisation.

Keywords: Open Market Repurchase, Signalling Hypothesis, Share Repurchase

JEL Classification: G14, G32, G38

1. Introduction

Share repurchase was made permissible in Malaysia on 1 September 1997. Before this date share repurchase was not allowed. Since then, the market has witnessed an increasing number of firms buying back their own shares in the market. Presumably, the authorities' decision on the policy change to allow repurchase during the early stage of the 1997-98 Asian financial crisis was to enable firms to take the opportunity to buy back their deeply under-priced shares. It was hoped that this would in some way help to stabilise the weakening market. However, during

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crisis, share repurchase may not be effective because the whole market would be declining fast due to a general lack of market confidence, and the 10 per cent annual repurchase limit set by the local regulation would not be able to absorb the selling pressure.[1] However, under normal market situations, share repurchase would enable managers to signal undervaluation of their shares to the public, and hence could become an effective price stabilising tool.

Share repurchase has long been permitted in developed markets and therefore it is not surprising that most of the previous studies done are on these markets (for example, Comment and Jarrell, 1991; Ikenberry, Lakonishok and Vermaelen, 1995; Chan, Ikenberry, and Lee, 2004; and Grullon and Michaely, 2004). These studies examined various aspects of repurchase, the most common being the reasons for repurchase and market reaction to repurchase or repurchase announcements. Due to differences in repurchase rules and regulation and the size and maturity of the stock markets, their findings may not be applicable to a developing market. Studies in this area within developing markets are scarce. For the Malaysian market, we found only one published study on share repurchase, that of Lim and Bacha (2002) who studied market reaction to repurchase announcements in the early years of its implementation. Due to the dearth of local studies on this issue, our study would add to the much needed literature on share repurchase. Further, this study could provide additional empirical evidence to policy makers on the effectiveness of repurchase as a tool for stabilising markets.

This study examines share price reaction surrounding the actual share repurchases of companies listed on the Malaysian stock market for the period 2001 to 2005. Analyses of the market reactions are also made based on the board of listings and sub-periods. Our study is different from Lim and Bacha (2002) in two respects. First, our period of study starts from where Lim and Bacha's study ends. Hence, we utilise a more recent data set. Second, our focus in this study is on the actual repurchase executed by the firm as opposed to the announcement of approval for repurchase. In the next section, we present the literature review, followed by a description of the data and methodology as well as the presentation of results. The last section concludes the paper.

[1] In addition the regulation also stipulates a maximum premium of 15 per cent on the offer price over the previous five-day average.

2. Literature Review

2.1 Theoretical Background

In theory there are many reasons for firms to buy back their own shares. Three commonly cited reasons are mentioned here. The first explanation is that it acts as a substitute to cash dividends. In situations where capital gains tax rates are lower than dividend tax rates, share repurchase would constitute a better alternative to distributing cash to shareholders. Share repurchase results in price appreciation that will give capital gains to shareholders that if realised, will be taxed at the capital gains tax rate, which is lower than the personal income tax rate that will be imposed on dividends. Hence when repurchases are used instead of cash dividends, share value ought to increase. Skinner (2008) and Von Eije and Megginson (2008) study the U.S. and European markets respectively and conclude that there is an observable trend among firms utilising share repurchase in replacing dividends as a form of cash distribution to shareholders. Another motive that is often mentioned is to adjust the firms' capital structure, which comes in the form of reducing the equity component and increasing the debt component. The third reason and probably the most commonly tested is that of the signalling hypothesis. Assuming the existence of information asymmetry between management and investors, share repurchase is seen as a management's signal to the market that the current market price is undervalued. These explanations are expected to result in a positive market reaction to share repurchase as shown by studies like Vermaelen (1981) and Comment and Jarrel (1991).

Although the explanations above suggest a positive impact of share repurchase on market prices, it may not be that obvious when applied to the Malaysian setting. Concerning the dividend substitution hypothesis, it is highly doubtful that local firms are using share repurchase as an alternative to cash dividend. Although dividend incomes are taxable while capital gains are not, the full imputation system practiced in Malaysia ensures that shareholders get a tax rebate on what has been deducted as corporate tax on the gross dividend received.[2]This would diminish the tax differential advantages of share

[2] Malaysia has replaced the dividend imputation tax system with a single tier tax system in 2008, with a 6-year transition period. Basically in the single tier tax system, dividends are paid after corporate tax and shareholders are exempted from paying personal income tax on the dividends received. There is no grossing-up of dividends at the shareholders level in

repurchase. In addition, Malaysian firms are known to be paying low dividends compared to developed countries. Isa (2008) documented that only about 60 per cent of the listed firms paid dividends in the 2000s, and for those that paid dividends, the average yield ranged between 2 per cent and 3 per cent in the 1990s and 2000s (Isa, 2008). As such, dividends in Malaysia are neither traditionally regarded as an important corporate decision, nor are they regarded as an important criterion for investment (Kester and Isa, 1996). The local market is mostly dominated by individual investors who are basically short-term price maximisers (Isa and Lim, 1995).

In terms of using share repurchase as a means to adjust the capital structure through increasing the leverage, the Malaysian evidence indicates that local corporations are debt-averse and not likely to employ much debt in their capital structure. Isa (2008) documents that the long-run averages of long-term debt to capitalisation of local listed firms are largely below 20 per cent. In a survey of the local managers, Kester and Isa (1994) find that managers prefer new equity to debt when new external financing is needed; a finding that is contradictory to the pecking order hypothesis found in most developed markets. Hence, the local market may not attach a similar valuation effect to a leverage increase decision of a firm as that found in developed markets. Furthermore, leverage increase will only occur if the repurchased shares are cancelled. However, in Malaysia, as documented by Lim and Bacha (2002), most firms choose to keep the shares as treasury stocks, which can be used later for stock options or sold back to the market.[3]

The third theory, which is about the information asymmetry and signalling, may be relevant in the local market. In the context of share repurchase, the theory argues that firms will buy back shares when they feel that the market is not providing the correct value to the firm. Under most situations, it is logical to assume that the management of a firm has superior information about its current value and future prospects than outside investors. It would be a wise decision, therefore for firms to buy

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their tax assessments as in the case of the imputation system, and also there is no dividend rebate from the government. The new tax system does not affect our results as our study is conducted well before its implementation.

[3]Section 67A (3A) amendments to the Companies Act which came into effect on 1 November 1998 provides that where a company has purchased its own shares, the directors of the company may resolve to cancel the shares so purchased, or to retain part of the shares so purchased as treasury shares, and cancel the remainder.

back their own shares as a form of good investment, if the management believes that it is indeed being undervalued by the market. Because outside investors do not have the same set of information as the management has, the management's decision to repurchase their shares will act as a signal to the market on the undervaluation of the shares. If the market responds to the signal, we should be able to see a substantial and significant price increase on the repurchase day. This signalling argument leads to the two testable hypotheses: First, there is a general price decline prior to the actual repurchase of shares, and second, there is a significant price increase on the day the market learns the firm has made a share repurchase. This phenomenon is shown by many studies such as Ikenberry et al. (1995), Chan et al. (2004) and Firth, Leung and Rui (2010).

2.2 Previous Findings

Previous studies on share repurchase may be classified into two types: first, those that study the announcement of a repurchase approval or repurchase programme, and second, those that study the actual repurchase made by firms. Studies on the announcement effect of a repurchase programme in the U.S. market include Dann (1981), Ikenberry et al. (1995), and Chan et al. (2004). In general, these studies find announcement abnormal returns to be positively significant, ranging between 3.0 per cent and 4.0 per cent. In Australia, Otchere and Ross (2002) find an abnormal return of 4.3 per cent and in Japan, Zhang (2002) finds 4.6 per cent abnormal return. However, many studies show much lesser abnormal returns, for example Jung, Lee and Thornton (2005) in Korea, 2.7 per cent; Hatakeda and Isagawa (2004) in Japan, 2.1 per cent; Lim and Bacha (2002) in Malaysia, 1.5 per cent; Huang and Zhou (2007) in China, 3.4 per cent; and Koerniadi, Liu and Tourani-Rad (2007) in New Zealand, 3.3 per cent. The collective international evidence, therefore, clearly demonstrates the existence of positive market reactions to repurchase announcements.

Researchers who study the impact of the actual repurchase or the announcement that a repurchase has been made include Vermaelen (1981), Comment and Jarrel (1991), Grullon and Michaely (2002) for the U.S. market; Brockman and Chung (2001), Zhang (2005), and Firth and Yeung (2005) for the Hong Kong market; McNally, Smith and Barnes (2006) for the Canadian market; Huang and Zhou (2007) for the Chinese market; and Ginglinger and Hamon (2007) for the French market. In

general, these studies find the abnormal returns around the repurchase days to be between 2.5 per cent and 3.5 per cent, except for the Hong Kong market in which the abnormal return is much lower, at less than 1.0 per cent. Considering the evidence from previous studies, it seems that the markets are reacting first to the announcement of a repurchase programme and then a second time, to the actual repurchase by firms.

For the actual repurchase events, Vermaelen (1981), Comment and Jarrel (1991), Brockman and Chung (2001), and McNally et al. (2006) also document the existence of a significant price decline in the period prior to the repurchase days, a finding that is consistent with the signalling or managerial timing or undervaluation hypotheses. In addition, Grullon and Michaely (2002) find support for dividend substitution hypothesis in the U.S. market, while Ginglinger and Hamon (2007) conclude that their evidence is consistent with a contrarian trading practice by managers in the French market. Cook, Krigman and Leach (2004) observe a varied style of repurchase activities in the U.S. market by firms upon making an announcement: some firms resort to 'immediate and intense buying', while others exercise 'delayed and smooth' buying. They also observe that there is no clear pattern in the time lapse between the announcement and the first actual repurchase.

2.3 Signalling and size effect

Several of the previous studies examine the effect of firm size on abnormal returns during share repurchase. With few exceptions, the general finding is that size effect does exist: small firms show a greater reaction than large firms. This finding is consistent with the information asymmetry theory, which says that small firms are subject to greater information asymmetry than large firms, because the former are typically not invested in by large institutional traders, hence, there is a general lack of media and analyst coverage. It is hypothesised that the extent of information asymmetry is directly related to the extent of the market reaction to the repurchase signal. Early evidence on the size effect is provided by Ikenberry et al. (1995). They find that the cumulative abnormal returns, CAR(-2,+2) for the smallest quintile firms is 8.19 per cent compared to 2.09 per cent for the largest quintile, while the pre-event price drop as measured by CAR(-20,-3) for small firms is -3.91 per cent compared to -1.21 per cent for large firms.

Other studies that provide evidence on the signalling size effect include Otchere and Ross (2002) in Australia; Zhang (2002) in Japan;

Firth and Yeung (2005), and Zhang (2005) in Hong Kong; Jung et al. (2005) in Korea; and Koerniadi et al. (2007) in New Zealand. Invariably, all these studies provide evidence of the negative relationship between firm size and the abnormal returns during the repurchase event. In the local market, Lim and Bacha (2002) analyse the main board (large firms) versus the second board (small firms) samples and find that there is no significant difference between the two boards in their announcement returns. However, they find that long-term post-announcement cumulative abnormal return, CAR(0,60), for second board companies of 28.44 per cent is significantly higher than that for the main board companies, with 10.13 per cent abnormal return.

3. Data and Methodology

3.1 Data description

Our data runs from January 2001 through December 2005. Although share repurchase has been allowed since September 1997, our study period that begins from January 2001 is chosen to avoid the crisis and the immediate recovery years and this allows us to examine the market behaviour during normal situations. The repurchase information, such as the date of repurchase and the number of shares repurchased are obtained from the exchange website under the buyback announcements.

Table 1: Summary statistics of share repurchase activities in the Malaysian market, 2001-2005

Number of firms	149 (100%)
Number of repurchases days	17,864
Total number of shares repurchased	2,309,313,664
Number of firms with 1 repurchase day	13 (8.7%)
Number of firms with 2-10 repurchase days	27 (18.1%)
Number of firms with 11-20 repurchase days	19 (12.7%)
Number of firms with 21-40 repurchase days	14 (9.4%)
Number of firms with over 40 repurchase days	76 (50.9)
Average number of repurchase days per firm	91.76

Source: Bursa Malaysia, www.bursamalaysia.com

Table 1 provides an overview of the repurchase activities during our sample period. During the sample period, 149 firms had a total of 17,864 repurchase days with a total purchase of 2,309,313,664 shares. In the process of collecting the data, we observe that firms exhibit varied forms of repurchase behaviour. Some firms pursue repurchase in an aggressive manner, making purchases very frequently within a short period of time while others made their purchases sporadically which spread over a longer period of time. It is not uncommon for a firm to make just a single repurchase after obtaining all the necessary approvals, and then going through the process of renewing the approval the following year. Table 1 shows that 13 (8.7 per cent) firms make a single day repurchase, and more than half of the firms (76 firms or 51 per cent) spread their repurchase activities over 40 purchase days. On average, firms make repurchases over a period of 92 days.

Table 2 provides a distribution of repurchase by the size of repurchase per day, measured as a percentage of the per-day share purchased over the total number of shares outstanding for the firm. Table 2 shows that the transaction size is typically very small, with 98.6 per cent of the daily transactions being below 0.5 per cent of the number of shares outstanding. The small transaction size may be due to the lack of liquidity in the market, hence, its inability to absorb large block transactions. It could also be due to the managers being cautious in their repurchase execution.

Table 2: Yearly distribution of actual share repurchase by the percentage amount of daily purchase transaction

Size of repurchase	Number of daily repurchase by year						
(%)*	2001	2002	2003	2004	2005	Total	%
Above 1 %	7	2	6	17	48	80	0.45
0.90-0.99	0	0	0	5	13	18	0.10
0.80-0.89	3	1	2	0	9	15	0.08
0.70-0.79	3	1	5	11	11	31	0.17
0.60-0.69	12	0	8	10	11	41	0.23
0.50-0.59	9	3	12	18	29	71	0.40
Below 0.50	1,891	1,606	2,370	3,884	7,857	17,608	98.57
Total	1,925	1,613	2,403	3,945	7,978	17,864	100.00

Note: *Size of repurchase is the percentage of per-day share purchased over the total number of shares outstanding for the firm.

Source: Bursa Malaysia (www.bursamalaysia.com).

In Malaysia, firms are required to make announcements on the board's decision to repurchase shares, and again once shareholders' approval is obtained. However, firms announcing the approval of a repurchase programme are not obliged to follow-up with actual repurchase. Nevertheless, this uncertainty is resolved the moment the firm makes its first repurchase. Therefore, for the purpose of this study, we only took the initial or the first actual repurchase day after obtaining the final approval as our event day. Subsequent repurchases by the same company within the approval year are not included in the study. Under this definition, there are a total of 330 repurchase events. However, due to the unavailability of price data, 31 repurchase events are excluded, giving a final sample of 299 initial repurchases made by 135 firms. The repurchase information is available from the exchange website as it is mandatory for firms making share repurchase to report to the exchange no later than 6.30 p.m. on the same day.

The Malaysian Stock Exchange has two boards of listing: the Main Board is for large-sized firms while the Second Board is for small and medium-sized firms[4]. Following Lim and Bacha (2002) we use boards of listing as a proxy for firm size. The distribution of the final sample by year and by board of listing is shown in Table 3. Table 3 shows that there was a steady increase in the number of initial repurchases from year 2001, with a sudden jump in year 2005. More than 90 per cent of the initial repurchases are made by firms listed on the main board and less than 10 per cent by firms listed on the second board.

Table 3: Distribution of the final sample for this study by year and board of listing

Year	Main Board	Second Board	Total	%
2001	25	2	27	9.03
2002	26	3	29	9.70
2003	47	5	52	17.39
2004	61	3	64	21.40
2005	113	14	127	42.47
Total	272	27	299	100.00

Source: Bursa Malaysia (www.bursamalaysia.com)

[4] In year 2009, the stock exchange merged the two boards into a single board that is referred to as the "Main Market". However, this change did not affect our analysis as this research was completed before the change took place.

3.2 Methodology

The standard event study methodology is used for this study. The initial repurchase day is designated as day 0. We use the market model to obtain abnormal returns. The event window is 41 days, from day -20 to day +20 relative to the event day. Daily returns are calculated using the following formula:

$$R_{it} = \frac{(P_{it} - P_{it-1})}{P_{it-1}} \quad (1)$$

Where:

R_{it} = daily return for stock *i* on trading day *t*,
P_{it} = closing price for stock *i* on trading day *t*,
P_{it-1} = closing price for stock *i* on trading day *t-1*.

Daily abnormal returns are calculated as follows:

$$AR_{it} = R_{it} - E(R_{it}) \quad (2)$$

Where:

AR_{it} = abnormal return of the stock *i* for day *t*,
R_{it} = actual return for stock *i* on day *t*,
$E(R_{it})$ = expected return for stock *i* for day *t*.

The expected returns of each stock are obtained using the market model:

$$E(R_{it}) = \hat{\alpha}_j + \hat{\beta}_i R_{mt} \quad (3)$$

Where:

$E(R_{it})$ = expected return for stock *i* for day *t*,
$\hat{\alpha}$ and $\hat{\beta}$ = are the market model parameters,
R_{mt} = is the return on the market index for the day *t*.

The market model parameters are estimated by ordinary least-squares regression over a 100-day period prior to the event window, from day -120 to day -21 relative to the event day, using the Kuala Lumpur Composite Index as the proxy for the market return.

The firms' abnormal returns are then averaged cross-sectionally to obtain daily average abnormal returns, AR_t as follows:

$$AR_t = \frac{1}{n}\sum_{i=1}^{n} AR_{it} \tag{4}$$

Where *n* is the number of firms on day *t*.

To estimate the cumulative abnormal returns *(CAR)* surrounding the event day is the summation of the average abnormal returns from the beginning of the period and after the actual repurchases, which is calculated as follows:

$$CAR = \sum_{i=-20}^{+20} AR_t \tag{5}$$

To determine the statistical significance of the abnormal returns, AR_t and the cumulative abnormal returns, CAR, *t*-statistics are used. The t-statistic for AR_t is calculated as follows:

$$t(AR) = \frac{\overline{AR_t}}{\sigma(AR_t)/\sqrt{N}} \tag{6}$$

where $\overline{AR_t}$ and $\sigma(AR_t)$ are the cross-sectional average and standard deviation, respectively, of the abnormal returns of stock on day t. The *t*-statistics for CAR is as follows:

$$t(CAR_w) = \frac{\overline{CAR_w}}{\sigma\,(CAR_w)/\sqrt{N}} \tag{7}$$

where $\overline{CAR_w}$ and $\sigma(CAR_w)$ are the cross-sectional average and standard deviation, respectively, of the CAR for a particular window, *w*.

4. Results

4.1 Returns analysis for the whole sample

Table 4 shows the abnormal returns analysis for the whole sample, with day 0 as the event day, defined as the initial repurchase day. Panel A of Table 4 shows the daily abnormal returns (AR) and the daily cumulative abnormal returns (CAR). Panel B shows the sub-windows analysis of the CAR. Table 4 shows that the market reacts positively to the repurchase with day 0 abnormal returns of 0.60 per cent (significant at 1 per cent level). In fact, the positive market reaction continues to day 1 and day 2, with a three-day (days 0 to +2) aggregate abnormal return of 1.18 per cent (significant at 1 per cent level). Immediately prior to day 0 abnormal returns are negative for four consecutive days, which is a sign of price decline. However, Panel B shows that the CAR for the pre-event period (days -20 to -1) is negative but insignificant. After the event, the CAR is positive, which indicates an uptrend, but insignificant. Figure 1 shows the graph of daily CAR. The graph indicates that about one month before the initial repurchase prices tend to be trending downwards, and just a few days before repurchase the prices show a steep decline. Beginning from the event day, the CAR takes an upward trend for about half a month and then stabilises until day +20.

Figure 1: CAR around first actual share repurchase of firms for the whole sample

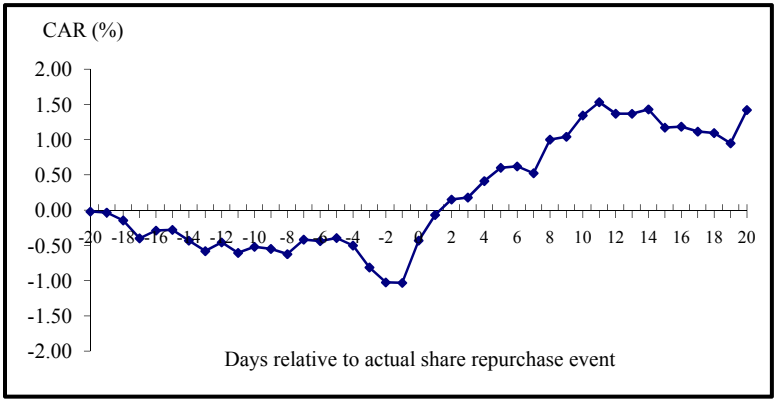


Table 4: Abnormal returns (AR) and cumulative abnormal returns (CAR) around actual share repurchase of firms for total sample, 2001-2005, (N=299)

Panel A: Daily AR and CAR relative to actual share repurchase day

Day	AR (%)	*t*-statistic	CAR (%)
-20	-0.0197	-0.1439	-0.0197
-15	0.0100	0.0734	-0.2795
-10	0.0870	0.6395	-0.5195
-9	-0.0292	-0.2147	-0.5487
-8	-0.0748	-0.5498	-0.6235
-7	0.2059	1.5133	-0.4176
-6	-0.0203	-0.1490	-0.4379
-5	0.0430	0.3158	-0.3949
-4	-0.1069	-0.7864	-0.5018
-3	-0.3114**	-2.2877	-0.8132
-2	-0.2120	-1.5574	-1.0252
-1	-0.0068	-0.0501	-1.0320
0	0.6002***	4.3982	-0.4318
1	0.3632**	2.6748	-0.0686
2	0.2192	1.6104	0.1506
3	0.0283	0.2088	0.1789
4	0.2330*	1.7152	0.4119
5	0.1895	1.3932	0.6014
6	0.0190	0.1402	0.6204
7	-0.0963	-0.7084	0.5241
8	0.4765***	3.5100	1.0006
9	0.0400	0.2946	1.0406
10	0.3028**	2.2289	1.3434
15	-0.2573*	-1.8927	1.1714
20	0.4791**	2.6671	1.4281

Panel B: CAR over different intervals

$CAR_{T1,T2}$	CAR (%)	*t*-statistic
Day -20 to -1	-1.0320	-1.4246
Day 0 to 2	1.1826***	4.8444
Day 3 to 20	1.2775	1.4407
Day -20 to 20	1.4281	1.4682

Note: *, **, *** indicate significance at the 0.01, 0.05 and 0.01 levels, respectively

Our results in this section are consistent with the signalling hypothesis and with most of the previous studies such as Hatakeda and Isagawa (2004); Chan et al. (2004); and Koerniadi et al. (2007). The market interprets a firms' decision to repurchase their shares as a positive signal. It is also evidenced from the results that the management deliberately timed their repurchase after a period of declining prices. Our results show that, if correctly used, share repurchase may become an effective tool for price stabilisation.

Another feature of our results is the continuation of price increase for several days after the event. Traditionally, this observation is seen to be inconsistent with the notion of an efficient market. However, for the event under study, it may be interpreted as being due to the market reaction to subsequent repurchases made by the firms. In this respect our results are somewhat different from many of the previous studies such as Vermaelen (1981), Asquith and Mullins (1986), Zhang (2002), Hatakeda and Isagawa (2004) and Koerniadi et al. (2007) that yield results that are more consistent with an efficient market situation.

The period of our study coincides with the recovery years after the 1997-98 financial crisis. The market was still visibly unstable and volatile as demonstrated by the swings of the market index, and firms and investors were still reeling from the losses incurred in the crisis years. We feel it is beneficial to examine the year-to-year market reaction as a form of check for robustness, to see if the market is consistent in its response to the event, regardless of market situations. Table 5 shows our analysis of CAR over four sub-windows on a yearly basis. For the event period, CAR(0,+2) is significantly positive for four out of five years, with different degrees of significance. The CAR(0,+2) is highest in year 2002 at 2.69 per cent and lowest in the year before 2001, at -0.02 per cent.

Coincidentally, we also note that the extent of signalling, measured by the size of CAR(0,+2), is somewhat correlated to the general movement of the market.[5] In 2001, when the market was bearish, it seems

[5] The mid-year value and yearly returns of the Kuala Lumpur Composite Index (KLCI), 2001-2005

Date	6/30/2000	6/29/2001	6/28/2002	6/30/2003	6/30/2004	6/30/2005
KLCI	833.37	592.99	725.44	691.96	819.86	888.32
Return (%)	-	-28.84	22.34	-4.62	18.48	8.35

The above Table shows that in year 2001, the market went down by almost 30% from the previous year, then made a strong recovery in 2002, then dropped a little in 2003 only to make a strong come back in 2004. The year 2005 saw a normal increase of 8.4%.

that reactions to the event were somewhat subdued and insignificant; while during the bullish years of 2002, 2004 and 2005, market reactions were strongly positive and significant. It is also observed from the analysis of the daily AR and CAR on the year-to-year basis, that firms time their repurchasing exercises. During bearish years, firms time their repurchase after a short period of consecutive daily price drops, while in bullish years, firms typically allow a longer time of price decline before making their purchase.[6] We reason that when the market is on an uptrend, there really is no necessity for the firm to signal under-pricing or make an effort to stabilise the price until there is a long enough period of consecutive declines in price.

Table 5 also shows that none of the pre-event cumulative abnormal returns, CAR(-20,-1) is significant, although three out of five years show negative returns and the other two years show very small positive returns. The post-event abnormal returns, CAR(3,20), exhibit a rather erratic behaviour on the year-to-year basis; negative in year 2002, positive in all other years, but only significant in year 2003. In sum, looking at the event days reaction, CAR(0,+2) and the pre-event abnormal returns, CAR(-20,-1), and also the timing of the repurchase, the yearly results are, in general, consistent with the signalling and undervaluation hypotheses.

4.2 Returns analysis by board of listing

In this section, we analyse our sample based on the board of listing as a proxy of firm size, to examine the existence of the signalling size effect. Table 6 presents our abnormal returns analysis based on board of listing. Both samples show positive abnormal returns on day 0, which are significant at the 1 per cent level. However, the main board continues to show positive returns on the next two consecutive days. Panel B of Table 6 shows that the event period CAR(0,+2) is 2.67 per cent for the second board sample compared to 1.03 per cent for the main board. Therefore, as far as the event period CAR is concerned, small firms show greater reaction than large firms. This is consistent with most of the previous studies, such as Lim and Bacha (2002) and Chan et al. (2004).

Figure 2 shows the CAR for both the main board and second board. Figure 2 shows that the CAR for the second board is always above

[6] The daily results on yearly basis are not shown, in order to provide focus on the major analysis. The results are available from the authors.

the main board. This is because of the gains made in the pre-event period, and also a big jump on the event day. The erratic behaviour of the second board CAR may possibly be due to the small sample size. For the main board, the CAR is always negative in the pre-event days and moves into positive territory after the event. The behaviour of the CAR in response to the actual repurchase presented here is somewhat different from those of Lim and Bacha (2002) who show that the CAR for the second board takes a monotonous upward trend from the pre-announcement period up to the end of the observation window, while the main board CAR remains negative at all times.

5. Conclusion

This study investigates the share price performance surrounding the actual share repurchases of firms listed on the Malaysian stock exchange over the period 2001 to 2005. Our results show a positive market reaction to the actual repurchase of shares. We also find that prior to the day of actual repurchases, there is a general decline in share prices that suggests that firms tend to time their repurchase after several days of consecutive price drops. The pre-event abnormal returns and the event days' abnormal returns clearly suggest the existence of a signalling effect of the repurchase in the local market. We also find that the signalling effect is larger for small firms compared to larger firms.

Table 5: Cumulative abnormal returns (CAR) by sub-windows and by calendar year

		Sub-windows *CAR(n1,n2)*			
Year	Sample size (*N*)	CAR (-20,-1)	CAR (0,2)	CAR (3,20)	CAR (-20,20)
2001	27	-2.38% (-1.1491)	-0.02% (-1.3043)	1.79% (1.0292)	-0.62% (1.1107)
2002	29	0.40% (0.5917)	2.69% 2.2377)**	-1.11% (-1.0573)	1.98% (1.0139)
2003	52	0.17% (0.9752)	0.90% (1.6959)*	2.66% (1.7163)*	3.73% (1.4027)
2004	64	-1.01% (0.7286)	0.78% (1.6634)*	0.59% (0.4562)	0.36% (0.8410)
2005	127	-1.58% (-1.0496)	1.42% (2.9008)***	1.49% (1.3721)	1.33% (1.4070)

Note: The *t*-statistics are in parentheses. *, **, *** indicate significance at the 0.1, 0.05 and 0.01 levels, respectively.

Table 6: Abnormal returns (AR) and cumulative abnormal returns (CAR) around actual share repurchase for Main Board and Second Board, 2001-2005

Panel A: Daily AR and CAR relative to actual share repurchase day

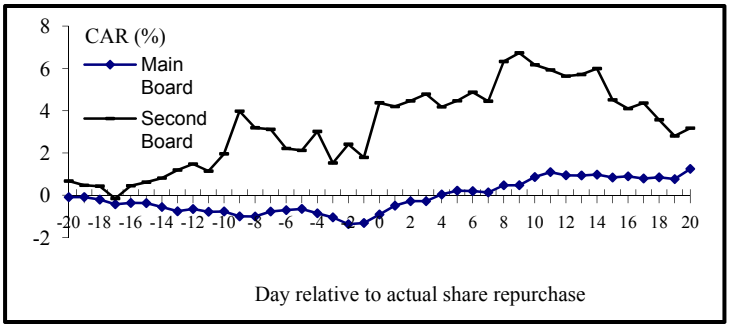
	Main Board (N=272)			Second Board (N=27)		
Day	AR (%)	t-statistic	CAR (%)	AR (%)	t-statistic	CAR (%)
-20	-0.0885	-0.6451	-0.0885	0.6743	1.1054	0.6743
-15	-0.0058	-0.0426	-0.3687	0.1691	0.2785	0.6189
-10	0.0146	0.1066	-0.7654	0.8166	1.3433	1.9590
-9	-0.2324*	-1.7014	-0.9978	2.0177***	3.3149	3.9767
-8	-0.0043	-0.0316	-1.0021	-0.7846	-1.2874	3.1921
-7	0.2339*	1.7118	-0.7682	-0.0753	-0.1234	3.1168
-6	0.0674	0.4927	-0.7008	-0.9030	-1.4855	2.2138
-5	0.0564	0.4123	-0.6444	-0.0920	-0.1514	2.1218
-4	-0.2064	-1.5108	-0.8508	0.8951	1.4746	3.0169
-3	-0.1943	-1.4209	-1.0451	-1.4907**	-2.4519	1.5262
-2	-0.3210**	-2.3460	-1.3661	0.8851	1.4576	2.4113
-1	0.0542	0.3964	-1.3119	-0.6219	-1.0237	1.7894
0	0.4035***	2.9441	0.9084	2.5816***	4.2274	4.3710
1	0.4168***	3.0555	-0.4916	-0.1765	-0.2909	4.1945
2	0.2143	1.5696	-0.2773	0.2685	0.4383	4.4630
3	-0.0005	-0.0034	-0.2778	0.3186	0.5274	4.7816
4	0.3159**	2.3150	0.0381	-0.6024	-0.9925	4.1792
5	0.1798	1.3176	0.2179	0.2864	0.4693	4.4656
6	-0.0194	-0.1426	0.1985	0.4063	0.6637	4.8719
7	-0.0637	-0.4672	0.1348	-0.4243	-0.6948	4.4476
8	0.3374**	2.4728	0.4722	1.8776***	3.1035	6.3252
9	0.0036	0.0266	0.4758	0.4060	0.6723	6.7312
10	0.3886**	2.8484	0.8644	-0.5608	-0.9216	6.1704
15	-0.1363	-0.9974	0.8396	-1.4764**	-2.4386	4.5143
20	0.4900**	2.6051	1.2548	0.3696	0.6138	3.1744

Panel B: CAR over different intervals

	Main Board (N=272)		Second Board (N=27)	
$CAR_{T1,T2}$	CAR (%)	*t*-statistic	CAR (%)	*t*-statistic
Day -20 to -1	-1.3119	1.1350	1.7894	1.2724
Day 0 to 2	1.0346**	2.6120	2.6736**	2.4595
Day 3 to 20	1.5321	1.3902	-1.2886	1.1600
Day -20 to 20	1.2548	1.4057	3.1744	1.3502

Note: *, **, *** indicate significance at the 0.1, 0.05 and 0.01 levels, respectively.

Figure 2: CAR around first actual share repurchase of firms for the Main Board and the Second Board sub-samples



Our study has implications for various interested parties. Our results and the results of previous studies show that repurchase programmes can bring benefits to the firms and investors. Firms should be aware of the importance of share repurchase that if properly utilised, can become an effective tool for price stabilisation and as a market signal, more so for the smaller listed firms. The implication for investors is quite clear as the results show that there is a significant increase in share prices during the announcement days, and a further increase during the actual repurchase days.

Although the intended purpose appears to have been served, policymakers should take note of the restrictive rules that are currently in place. For example, the 10 per cent annual limit and the 15 per cent premium cap on the offer price over the previous five-day average would limit the full potential of the signalling impact. Further, future studies in this area should try to use a larger data base in order to make more in-depth analysis of factors influencing the signalling impact, such as repurchase size, stock's liquidity, firm size, book-to-market ratio, dividend payout ratio and capital structure.

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