

The effect of acquisition announcement on the security prices of bidding and target firms: The Malaysian experience

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ABSTRACT

In Malaysia, the studies on mergers and takeovers are still very scarce due to the infancy of the Malaysian equity market. With the introduction of the New Economic Policy in 1970, there has been an increase of corporate takeovers and mergers. In the light of other relevant empirical literature on the subject from different established equity markets, an attempt is made to determine the effects of acquisition announcement on the price behavior of the Malaysian bidder and target firms. The study uses the daily common stock returns of the Kuala Lumpur Stock Exchange for 200 days before the acquisition announcement date and 200 days after. The results indicate that, for some acquisitions, positive information concerning a forthcoming corporate takeover is considered good news for the shareholders of target firms. In the short term, the evidence on the significant negative changes after the announcement may suggest that the bidders have over-estimated the future efficiency of the gains from the merger.

FULL TEXT

INTRODUCTION

There is a consensus among the various studies that target firms earn abnormal positive returns during the announcement period of a takeover bid. But whether the successful takeover increases or decreases the value of bidder common stock is not clear. Jensen and Ruback's (1983) study of the US takeovers and mergers prior to 1980, conclude that the target firm's shareholders benefit, and that the bidding firm's shareholders do not lose. Even Jarrell, Brickley and Netter (1988) who provide a comprehensive review of the empirical evidence regarding takeovers since 1980, note that the target firms benefit, while there is a statistically insignificant loss for the bidder's shareholders.

In the United Kingdom's experience, Franks, Broyles and Hecht (1977), report gains to both target and bidder firms. However, Firth (1979, 1980) finds gains by the targets are more than offset by losses to the bidders. But later, Frank and Harris (1989) note that around the merger announcement date, target firms gain and bidders earn zero or modest gains. Murray's study (1991) of Irish takeovers and mergers reports significant gains to target firms, and an insignificant loss to bidders. However, he notes that the evidence on the performance of bidders and targets indicates that mergers and takeovers are, on average, value enhancing.

In Malaysia, the studies on mergers and takeovers are still very scarce, due to the infancy of the Malaysian equity market. With the introduction of the New Economic Policy in 1970, there has been an increase of corporate takeovers and mergers in the past twenty years [Gill (1986), Mat-Nor and Muda (1989)]. Various government-controlled corporate sectors have been set to acquire an interest in the corporate sector in trust for the Malays and natives, collectively known as Bumiputra. In the light of other relevant empirical literature on the subject from different established equity markets, this study will attempt to determine the effects of acquisition announcement on the price behaviour of the Malaysian bidder and target firms.

METHODOLOGY

DATA COLLECTION

This study uses the daily common stock returns of the Kuala Lumpur Stock Exchange for 200 days before the acquisition announcement date and 200 days after. The study includes all acquisition news announced and carried out by bidders

listed on the Kuala Lumpur Stock Exchange to acquire listed and non-listed target firms, and the bidders subsequently carried out the acquisition programme as announced. The period covered in this study is from January 1st, 1977 through December 31st, 1989. The data for the target firms however, include only the listed firms which were acquired by the listed bidding firms.

The date of announcement which was chosen as the event date, was the announcement date as recorded on the first press release of takeover kept in the companies' file of the Kuala Lumpur Stock Exchange library. A total number of 45 target firms and 293 bidding firms were used in the analysis.

The daily prices were obtained from The Securities Clearing Automated Network Sendirian Berhad (SCAN) database. The price relatives used were adjusted for capital adjustment (stock splits, stock dividend, and rights). No adjustment for cash dividends were made on ex-dividend dates.

ANALYSIS OF DATA

The basic methodology of this study involves the use of the following one factor market model or single index model;

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \epsilon_{i,t} \dots (1)$$

where,

$R_{i,t}$ = the daily return of either the bidding or the target firm i at time t ,

$R_{m,t}$ = the daily returns at time t of the market index, the Kuala Lumpur Stock Exchange composite index,

$\alpha_i = E(R_{i,t}) - \beta_i E(R_{m,t})$, and where E is the expectation operator,

$\beta_i = \text{covariance}(R_{i,t}, R_{m,t}) / \text{variance}(R_{m,t})$,

$\epsilon_{i,t}$ = stochastic error term.

This model is assumed to satisfy the normal requirements of a linear regression model. That is,

- (1) all $\epsilon_{i,t}$ has a mean (or expectation) of zero; $E(\epsilon_{i,t}) = 0$,
- (2) all $\epsilon_{i,t}$ have a common constant and finite variance for σ_i^2 for all t ; $E(\epsilon_{i,t}^2) = \text{VAR}(\epsilon_{i,t}) = \sigma_i^2$,
- (3) error terms are serially independent; $E(\epsilon_{i,t} \epsilon_{j,t}) = \text{COV}(\epsilon_{i,t}, \epsilon_{j,t}) = 0$ and
- (4) the distribution of $\epsilon_{i,t}$ is independent of the explanatory variables, $R_{m,t}$; $E(\epsilon_{i,t} R_{m,t}) = \text{COV}(\epsilon_{i,t}, R_{m,t}) = 0$.

Some of the studies using the market model include Dodd and Ruback (1977), Dodd (1980), and Bradley, Desai and Kim (1983).

EXCLUSION PERIOD

Initially, the return data during the 401 interval period beginning at 200 days and ending at 200 days before the announcement date were used to estimate the parameters of the market model. However, the effects are more appropriate if they are measured by comparing a security's return, when the information about the acquisition occurs, to the ex ante expected return. Hence, the estimates should be computed on data excluding an interval of time on either side of the acquisition announcement date when the residuals are thought to behave abnormally. Failure to exclude these data could result in biased estimates of the parameters [Frank (1978)]. A number of different periods were tested and a visual examination of the residuals indicated that abnormal price movement was largely confined within the 7 days prior to 6 days after the acquisition announcement. As a result, the coefficients were estimated using 14 days exclusion periods. In fact, different estimation periods were tried and in no case are the results and conclusions of this paper altered.

MEASURING ABNORMAL PERFORMANCE

To measure the abnormal performance, the residuals for each firm, $AR_{i,t}$ are calculated based on the market model. This model is used as the benchmark to measure the security's price performance.

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t})$$

where α_i , β_i are estimates from equation (1).

The average residual (AR) for each day relative to the acquisition is calculated as:

(Equation omitted)

where N is the number of firms which have abnormal returns in day t .

The cumulative average residual (CAR) over an interval K to L is calculated as:

(Equation omitted)

The following t-statistic is employed to determine whether AR sub t differs significantly from zero for any event day. The test statistic is the ratio of the average residual to its estimated standard deviation, derived from that used in event studies such as Masulis (1980), Dann (1981), Holthausen (1981) and Leftwich (1981).

$$t_1 = \text{AR sub } t / \sigma_{\text{AR sub } t}$$

where,

(Equation omitted)

The test statistic on the cumulative average residual, as used by Bradley, Desai and Kim (1988) is the ratio of the cumulative average residual to its standard deviation which is given by;

$$t_{\text{sub } 2} = \text{CAR} / \sigma_{\text{CAR}}$$

where $\sigma_{\text{CAR}} = \sigma_{\text{AR}} \sqrt{K}$ and where σ_{AR} is the standard error of the daily return over the estimation period excluding the exclusion period, and K is the number of days in the CAR statistic.

FINDINGS

TARGET FIRMS

The summary of the results with a significant t-value of average residuals at 5 or 10 percent or both, and the results from -12 to +12 days are shown in table 1. (Table 1 omitted)

The average residuals for day -42, -41, -40, -12, -8, -6, -5 and -1 show a strong upward movement and are significant at the 5 percent level. Thus, this may indicate that for some acquisitions, positive information concerning a forthcoming corporate takeover is considered 'good' news for the shareholders of target firms. This increase in share prices prior to the announcement may also be due to the information leakage to the market or to buying support by the bidder which forcing the prices up before the announcement. Unfortunately, it was impossible to quantify these factors with existing data. In order to test a hypothesis of insider trading it would be necessary to isolate the bidders, who were in possession of pre-merger equity interest or 'toehold' interest and made abnormal returns around the merger announcement date [Frank (1978), Frank and Harris (1989)].

With the highest cumulative average residuals and insignificant average residuals reported on the day after the announcement date, it indicates that the market appears to adjust immediately to the acquisition announcement. Subsequently, on the second day after the announcement date, it began to decline gradually, and, in fact, a test on most of the remaining average residuals is not statistically significant. This may also suggest that no new information is released, and the market reaction to this new public information is complete on the second day after the announcement. Thus, it could be interpreted as evidence in support of a hypothesis that the Kuala Lumpur Stock Exchange is reasonably efficient in its response to takeover announcements. With significant average residuals on +81 (at 5 percent significant level) and +82 days (at 10 percent significant level) and considering the study period is short, the merger effect on the target firms might not be apparent yet. In addition, with the sign of the downward movement of cumulative average residuals from +158 to +200 days, it appears that there are no net gains from altering the operation of the target. On the other hand, analysing table 1 again, the average residuals before the announcement date show more signs of significant negative values than after the announcement date. Figure 2 also seems to indicate that the period from -116 to +200 days has higher cumulative average residuals than the period from -200 to -117 days. (Figure 2 omitted) Although there is a negative drift from +158 to 200 days, it is not statistically significant ($t_{\text{sub } 2} = 1.47$). Thus, there is an implication that takeovers in Malaysia lead to an economically beneficial transfer of productive resources, or perhaps that the target's management has performed poorly before being replaced by the more efficient management of bidders.

The cumulative average residual (CAR) as shown in figure 1 shows a clear picture with an obvious definite pattern. (Figure 1 omitted) The unusual price performance in the form of cumulative average residual comes in the period starting 116 days before the acquisition announcement and continues to increase dramatically until the announcement date itself. In fact, during the last 116 days prior to the date of the acquisition announcement, price performance shows a dramatic rise of about 25.80 percent ($t_{\text{sub } 2} = 3.58$) or an average of 0.22 percent per day. It implies that the net gains to shareholders who maintained their holding throughout these 116 days until the announcement date are about 25.80 percent. This is statistically significant at 5 percent. It reflects that merger announcements are poorly kept secrets due to information

leakage to the market.

The cumulative average residuals also show that target firms experience a decline prior to the leakage of information and that the bidding firm is assumed to be motivated by information on the inefficiency of the target firms.

The random walk pattern one day after the announcement indicates that no new information is released. Thus, it could be interpreted as evidence in support of a hypothesis that the Kuala Lumpur Stock Exchange is reasonably efficient in its response to takeover announcements.

In addition, the tail anomaly around day +160 might indicate the bid-ask errors in transaction prices rather than market overreaction due to measurement problems with the daily returns computed, based on the 'closing price' provided by SCAN of Kuala Lumpur Stock Exchange. This closing price can deviate from the true price and will result in a bid-ask effect, or bid-ask errors. However, as also noted by Kaul and Nimalendran (1990), a more detailed investigation is necessary to test the validity of this conjecture and such an investigation is the topic of future research.

BIDDERS

The summary of results with significant t-value of average residuals at 5 or 10 percent or both, and the results of average residuals from -12 to +12 days are shown in Table 2. (Table 2 omitted) The significant positive average residuals either at the 5 or 10 percent level or both, on day -128, -123, -101, -59, -20, -18, -7, -6, -2, and on the announcement date, also confirm the positive impact hypothesis. Again, this may indicate that in some acquisitions, positive information concerning a forthcoming corporate takeover is considered 'good' news for the bidders' shareholders. The significant positive average residuals on the announcement date are also consistent with the positive impact hypothesis that the bidding firm is implementing an operating strategy which increases the wealth of its shareholders. The increase in share prices prior to the announcement may also be due to an information leakage to the market. Unfortunately, it was impossible to quantify this factor as insider trading, with existing data. In order to test a hypothesis of such trading, it would first consider whether or not certain monopoly positions exist or could be created whereby bidders would have access to private information which could be exploited for above normal profit.

With the highest cumulative average residual reported on the day 0, that is on the announcement date itself, it shows that the market appears to respond immediately to the acquisition announcement. But, 3 days (at 5 percent level) and 4 days (at 10 percent level) after the announcement date, it began to decline significantly. Thus, with significant negative average residuals immediately after the announcement date, this result is obviously inconsistent with the efficient market hypothesis because the initial reaction does not accurately reflect the true implication of the information on shares values. It is also inconsistent with the positive impact hypothesis that the manager acts to maximise shareholders' wealth. However, with a significant positive average residual on day 29, 57, 107, 114, 127 after the announcement date, and considering that the period of study is short, the merger effect on the bidding firms might also not be apparent yet. In the short term, evidence on the significant negative changes after the announcement, may suggest that the bidders have overestimated the future efficiency of gains from the merger. Nevertheless, returns initially rise before the announcement and then decline afterwards, leaving bidder shareholders no better off as a result of the mergers. In addition, with the sign of the downward movement of cumulative average residuals from +158 to +200 days, it appears that there are no net gains from investing in the targets. On the other hand, analysing figure 2, the period from -107 to 200 days appear to have higher cumulative average residuals than the period from -200 to -108. Thus, there is an implication that takeovers in Malaysia are creating quite a large benefit for shareholders and appear to facilitate resource allocation within the Malaysian economy. The cumulative average residual as shown in Figure 2 also shows a clear picture with an obvious definite pattern. The unusual share price performance in the form of average residuals arose during the period starting from 101 days before the announcement. Statistical tests indicate that the average residuals on this day suggest that it is significant with $t=2.07$. However, the unusual share price performance in the form of cumulative average residuals began as early as 107 days before the announcement and continued to increase dramatically until the announcement date itself. During the last 107 days prior to the announcement date price performance also shows a dramatic rise of about 10.89 percent ($t_{sub 2}=3.50$), or an average of 0.10 percent per day. It implies that the net gains to shareholders who maintained their holding throughout these 107 days until the announcement date are about 11 percent which is positively significant. This result reflects that merger announcements are poorly kept secrets and that there is an information leakage to the market.

The cumulative average residuals also show that there is a random walk pattern indicating that bidding firms experience normal cumulative average residuals before the leakage of information.

The anomalous decline after the announcement might indicate that it was inconsistent with the positive impact hypothesis which states that managers act to maximise the shareholders' wealth. This may also suggest that the bidder has overestimated the value of the target which may result in paying too much for the target's assets. However, if there is an overreaction to the acquisition announcement, it could be due to the bid-ask errors in transaction prices using the daily returns computed, based on the 'closing price' provided by SCAN of the Kuala Lumpur Stock Exchange. This closing price can deviate from the true price and will result in a bid-ask effect or bid-ask errors. As also noted by Kaul and Nimalendran (1990) a more detailed investigation is necessary to test the validity of this conjecture and such an investigation is the topic of future research.

Nonetheless, the random walk pattern around 60 days after the announcement date indicates that no new information is released, and the stock's return has reverted to its normal relationship with market returns. But, the tail anomaly around 160 days after the announcement might again indicate the bid-ask errors in transaction prices rather than market overreaction due to measurement problems with the daily returns computed based on the 'closing price' provided by SCAN of the Kuala Lumpur Stock Exchange.

CONCLUSION

With more signs of significant negative average residuals for targets before the announcement date than after it, there is an implication that takeovers in Malaysia lead to an economically beneficial transfer of productive resources or possibly that the target's management which performed poorly previously, has been replaced by the more efficient management of bidders.

The average residuals for day -42, -41, -40, -12, -8, -6, -5 and -1 for targets and for day -128, -123, -101, -59, -20, -18, -7, -6, -2 and on the announcement date for bidders show a strong upward movement which are significant at 5 or 10 percent level or both. The unusual price performance in the form of cumulative average residuals for all models comes in the period starting from -16 days for targets and -107 days for bidders and continues to increase until the announcement date itself. This result is consistent with the positive impact hypothesis. Thus, it may indicate that for some acquisitions, positive information concerning a forthcoming corporate takeover is considered 'good' news for the shareholders of target firms. This increase in share prices prior to the announcement may also be due to information leakage to the market or to buying support by the bidder which forces the prices up before the announcement. In the short term however, the evidence on the significant negative changes after the announcement, may suggest that the bidders has overestimated the future efficiency of the gains from the merger. Nevertheless, returns initially rise before the announcement and then decline after the announcement, leaving bidder shareholders no better off as a result of the mergers.

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DETAILS

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