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Takeover Effects and Shareholder Wealth: Evidence from Thai Firms

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This paper features a study of the market impact of Thai listed company control-related events involving successful and unsuccessful tender offers undertaken from 1992-2002. A comprehensive set of measurement techniques are applied to assess the effects of these events on target firm's shareholder wealth. These methods include two models and three parametric test statistics. Long-window cumulative and buy-and-hold abnormal returns are examined or the target firm's performance during a period of twelve months before and after the takeover are investigated. The results show consistent average abnormal returns of approximately 30.80% as estimated from the market model and 31.10% as estimated from the zero-one model. The returns are sustained post the announcement month. The market seems to anticipate a potentially positive event occurring at least two months prior to the announcement month. Thus, the market impact of Thai takeovers is positive in each time period, resulting in substantial and positive abnormal returns for the target firm's shareholders.

Field of Research: Takeovers, Abnormal Returns, Target Firms, Event Studies, Emerging Market, Thailand

1. Introduction

Firms can choose to expand either internally or externally through mergers, but the success of a merger depends critically on whether the two event firms achieve economies of scale. Prior studies show evidence that takeovers create shareholder wealth, some other studies suggests that takeovers have negative effects. However, more recent studies in 1990s tend to share positive views. Morellec and Zhdanov (2004) predict that takeovers result in larger returns to target firm's shareholders than those to bidding firm's shareholders. Jensen (2006) suggests that the market for corporate control has generated large benefits of around US535 billion to event firms' shareholders in approximately the 50 largest US takeovers in the prior four years. Therefore, the conclusions are ambivalent, though they suggest that anticipated wealth creation can be viewed as the likely rationale behind merger and acquisition decisions.

2. Review of Prior Studies

Datta, Pinches, and Narayanan (1992) compare their results with the conclusions provided in two previous reviews by Jarrell, Brickley, and Netter (1988) and Jensen

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and Ruback (1983). The evidence shows the consistency amongst the three reviews that target firm shareholders earn significant gains and achieve larger gains in tender offers rather than in mergers. However, their results are more consistent with Jarrell et al. (1988) in terms of the gains to target shareholders which are higher in the 1970s and 1980s compared to the 1960s. Work on non-USA stock markets gives further support; see, for example, Da Silva Rosa, Izan, Steinbeck, and Walter (2000), in an Australian study, Dumontier and Petitt (2002), in a French study, King and Padalko (2005), in a Canadian study, all report that the target firm shareholders benefit significantly from takeover announcements. Goergen and Renneboog (2004) examine large European takeovers, suggesting that short-term wealth effects are remarkably similar to those reported in the U.S. and U.K. studies.

Bruner (2002) summarises the findings of 21 studies and reveals that the target firm's shareholders receive significantly and materially positive abnormal returns, despite variations in the time period, type of acquisition (mergers vs. tender offers) and observation period. Campa and Hernando (2004) also summarise the findings of 13 studies and report that the target firm's shareholders obtain significantly positive returns in most cases. This is also consistent with a survey by Burkart and Panunzi (2006).

Recent studies provide additional evidence; see, for example, Ascioglu, Mclnish and Wood (2002), Jabbour, Jalilvand and Switzer (2000) and Meulbroek (1992), amongst others. Schwert (2000) and Andrade, Mitchell and Stafford (2001) report target firm's shareholders gain positive abnormal returns around the takeover announcement date. Santos, Errunza, and Miller (2003) find significant wealth gains accrue to foreign target firm shareholders regardless of the type of acquisition. Campa and Hernando (2004) also suggest that target firm shareholders receive on average a statistically significant cumulative abnormal return of 9% for mergers.

Conversely, Agrawal and Jaffe (2002) summarise prior studies of the pre-acquisition performance of target firms, in which eight from twelve studies show negative abnormal returns, but only two studies record significantly negative abnormal returns, and the remaining four studies report insignificantly positive abnormal returns. Their results are consistent with two other studies; Danbolt (2002) and Karceski, Ongena, and Smith (2000), cited in Campa and Hernando's (2004) survey. These studies report negative abnormal returns of -2.39%, -7.60% and -9.44%, and -1.52% respectively. Mitchell and Stafford (2000) also find smaller abnormal returns and less variation across sub-samples of acquisitions. Thus, the findings are mixed between positive and negative results.

Whilst most of the previous studies have focussed on US and European events, only a small number of merger studies have examined developing or emerging stock markets. Lins and Servaes (2001) assess the value of corporate diversification in seven emerging markets, including the Thai stock market, and find that diversified firms experience a discount of approximately 7% when compared with single-segment firms. Claessens, Djankov, Fan, and Lang (1998) suggest that whilst firms in more developed stock markets are successful in vertical diversification, in less

developed stock markets, firms in Indonesia, Korea, Taiwan and Thailand appear to suffer significantly negative effects from vertical integration, but gain significantly benefits from complementary expansion. Fauver, Houston, and Naranjo (2002) report that in high-income countries, there is a significant diversification discount, but in lower-income and segmented countries, there is either no diversification discount or diversification premium. Khanna and Palepu (2000) suggest that diversification is more valuable in emerging markets than in more developed economies. The evidence is therefore inconclusive.

There have been a very small number of studies focusing on Thai mergers. These provide some evidence of the availability of positive returns to target firm's shareholders, but are limited by their data type, sample size and chosen research methods.

I considered that the time was ripe for a comprehensive study of takeover effects on the Thai stock market given that some features of the SET are fairly unique when compared with developed markets. These unique characteristics are discussed below:

(1) The SET is dominated by local individual investors participating in the market with an approximate share of 70-80%. The remainder is taken up by institutions and foreign investors.
(2) The market for corporate control on the SET is likely to be less active than in other developed stock markets. Since an emerging market generally has weaker corporate governance institutions, controlling shareholders will in general value the benefits of control more than controlling shareholders in developed markets.
(3) Individual investors have a significant role in merger and acquisition activities on the SET with an estimated portion of more than 10%.
(4) The major bidding firms are non-listed companies that constitute more than 40% of holdings.
(5) After a tender offer, most target firms are still listed companies and operate separately from the bidding firms. Only a few become merged firms.
(6) There are not many cases of competitive bids and unsuccessful bids on the SET.
(7) Most mergers and acquisitions are friendly takeovers. Hostile takeovers are never successful on the SET. This is because groups, which bring together several affiliated companies, are the predominant form of organisation in Thailand.

The above singular characteristics of the SET mean that it is an emerging market worthy of close scrutiny. The prior Thai studies used daily stock price data, examined short-window abnormal returns and applied only the market model plus a limited range of statistical tests. We know that event study results are sensitive to the metrics used. Thus, this study provides a comprehensive examination using monthly stock price data, a longer sample period from year 1992 to 2002 and a long event-window from plus 12 to minus 12 months. The examination covered all time-periods, including (-12,-1), (-12,0), (+1,+12) and (-12,+12)months. These result in understanding more about the market impact of takeovers around the announcement months on Thai firms compared with the past studies on both developed and emerging markets. The comprehensive set of tests included two models and three different types of "*t*-statistic" tests. These include: the market model and the market-

adjusted (zero-one) model; a standardised-residual test, standardised cross-sectional test and conventional *t*-tests, respectively.

3. Methodology

3.1 Data

There are three major sources for the stock price data used in this study which were governed by the following considerations:
(1) To alleviate issues relating to survivor bias, I am careful to include delisted companies and companies in "REHABCO"[1]. Thus, I scrutinised the list of delisted companies, the list of companies traded under the rehabilitation sector or "REHABCO", plus the list of total companies listed on the SET, the list of listed companies that have their names changed, supplementary information about listed companies (in Form 56-1) and the SET's rules and guidelines regarding takeovers and delisting were collected from the SET.

(2) All tender offer statistics between August 1992 and October 2002, and other specific information such as the rules, conditions and procedures to be followed in tender offers, other additional information associated with tender offers, offerors (bidding firms) and offerees (target firms) was gathered from the Securities and Exchange Commission, Thailand (SEC).

(3) The Datastream database was used to provide the information about the stock prices of the sample firms.

3.2 Research method

The analysis in this study is based on the tender offer statistics obtained from the SEC between 1992 and 2002. The sample firms were classified according to whether they were involved as a target. Moreover, when there were any tender offers that involved repeated targets, any of the same target and the same bidder or the same target and a different bidder, the latest tender offer was first selected, then, the second, and then the third latest one, in this sequence. This was to optimise the data utilised from the limited available sources of data. However, I imposed a requirement of an interval of no less than one year's length between each tender offer.

During the time selected, the number of takeovers on the SET amounted to 151 tender offers. However, the initial sample finally was reduced to 52 tender offers. The event firms were selected according to the selection criteria set out below:

(1) A tender offer was classified as being "successful" if the bidder increased its holding of the target shares or purchased at least some[2] of the outstanding target shares that were tendered for. Thai security legislation also defines a proportion from 25% of the target shares' holdings as a strategic shareholder and the bidder is required to tender an offer for the total remaining outstanding shares of the target.

(2) Any tender offer was excluded from the sample when it occurred with the purpose of a de-listing[3]. Those cases were also deleted when the tender offer was cancelled later or the target firm was in the process of listing.

(3) The 'survivorship' period of time required in the study is a period of months over (-48,+16) around the event, due to the limitation of available stock price data.

This research is largely based on a sample of successful tender offers; however, very few cases of unsuccessful tender offers that occurred on the SET were also studied. The analysis emphasises abnormal performance measurement using monthly stock price data. The firm's stock price reaction to the takeover announcement was estimated as the rate of abnormal returns for the target firm's shareholders. The abnormal returns were derived from a particular stock that responded to the event study. The raw returns for one month were simply the change in stock price and any dividends paid, divided by the closing stock price the month before. The abnormal return was defined as the difference between the realised return observed from the market and the benchmark return over the period around the takeover announcements. Also, it was defined "at the announcement of takeovers" or "around the takeover announcements" as the event-window of the examination. The event period is the bid period or (-12,0,+12) months, month '0' was defined as the event month, and the event date (month) was defined as the submission date (month) of the tender offer by the bidder to the SEC or the date (month) that the proposal was filed at the SEC.

To examine the effect of the event on each stock, i, control is made for the normal relation between the return on stock i during month t, and the return on the market index R_m.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

where R_{it} is the return of stocks, R_{mt} is the return of market index, α_i is the intercept term, β_i is the systematic risk of stocks and ε_{it} is the error term.

The market model was selected as an expected return model and the OLS (Ordinary Least Squares) regression was used in regression of the stock return over 3 years of the estimation period against the return on the valued weighted SET index for the corresponding calendar months. The SET index is calculated from all stocks listed on the SET and is a market capitalisation weighted index that was used as the market index. The regression yielded the intercept term and a measure of systematic risk that is used to calculate an abnormal return, or a residual. In each event related month for each sample stock. Month 13 (or 0) was determined as the event month and we calculated 25 abnormal returns on each stock over the period around the takeover announcements, from month 1 (-12) through to month 25 (+12). This interval is the event window for the bid period investigation of this study. The impact of the event on stock returns was examined through a number of stocks that were affected by the takeover announcements at the event time. The abnormal returns (ARs) were averaged as;

$$AAR_t = 1/n \sum_{i=1}^{n} \varepsilon_{it}$$

where *n* is the number of stocks (firms).

The accumulated effect of the event was examined using the cumulative average abnormal return (CAAR) measure. The values of the average abnormal returns were continuously cumulated for every month from T1 (month1 or -12) to T2 (month 25 or +12) as

$$CAAR = \sum_{t=T1}^{T2} AAR_t$$

In addition to using the CAR approach, the BHAR approach was also used. To obtain a holding-period buy-and-hold abnormal return ($BHAR_{iT}$), the abnormal returns were calculated as

$$AR_{it} = R_{it} - \alpha_i - \beta_i R_{mt}$$

$$BHAR_{iT} = \prod_{t=0}^{T-1} [1+AR_{it}]-1$$

where t=0 is the event month or the beginning period and T-1 is the period of investment (in months).

Abnormal performance ($BHAR_{pT}$) was defined as the cross-sectional average of the buy-and-hold abnormal return of the number of stocks (n). That is the abnormal return ($BHAR_{iT}$) was averaged as

$$BHAR_{pT} = 1/n \sum_{i=1}^{n} BHAR_{iT}$$

The market-adjusted model was another expected return model used in this study.

$$R_{it} = \beta_i R_{mt} + \varepsilon_{it}$$

where R_{it} is the return of stocks, R_{mt} is the return of market index, β_i is the systematic risk of stocks and ε_{it} is the error term.

All the calculation procedures are the same as those applied with the market model as previously described. Also, the CAR and BHAR methods were used with the market-adjusted model respectively.

3.3 Statistical tests of abnormal returns

To test the null hypothesis that the mean cumulative or buy-and-hold abnormal return is equal to zero for a sample of n firms, I employed three parametric test statistics.

3.3.1 Standardised-residual test

The standardised residual is the event-period residual scaled by the standard deviation of the estimation-period residuals.
The test statistic is the sum of the standardised residuals divided by (approximately) the square root of the number of sample firms (The actual denominator is $\sqrt{\sum_{i=1}^{N}(T_i\text{-}2) / (T_i\text{-}4)}$, where T_i is the number of days (months) in security *i*'s estimation period and N is the number of firms in the sample. If for most firms there are a large number of days (months) in the estimation period, $\sum_{i=1}^{N}(T_i\text{-}2) / (T_i\text{-}4) \approx N$).

$$t = \sum_{i=1}^{N} SR_{iE} \Big/ \sqrt{\sum_{i=1}^{N} (T_i\text{-}2) / (T_i\text{-}4)}$$

$$\text{or} \qquad t = \sum_{i=1}^{N} SR_{iE} \Big/ \sqrt{N}$$

where SR_{iE} is the standardised residual, T_i is the number of days (months) in security *i*'s estimation period and N is the number of firms in the sample.

3.3.2 Standardised cross-sectional test

The test statistic is the average event-period standardised residual divided by its contemporaneous cross-sectional standard error.

$$t = 1/N \sum_{i=1}^{N} SR_{iE} \Big/ \sqrt{1/N(N\text{-}1) \sum_{i=1}^{N} (SR_{iE} - \sum_{i=1}^{N} SR_{iE}/N)^2}$$

3.3.3 Conventional t-tests

The test statistic is the average abnormal return divided by its cross-sectional standard error.

$$t_{CAR} = \overline{CAR}_{iT} \; / \; (\sigma (CAR_{iT}) \; / \; \sqrt{n})$$

$$t_{BHAR} = \overline{BHAR}_{iT} \;/\; (\sigma\,(BHAR_{iT}) \;/\; \sqrt{n}\,)$$

where $\overline{CAR}_{iT}$ and $\overline{BHAR}_{iT}$ are the sample averages and $\sigma\,(CAR_{iT})$ and $\sigma\,(BHAR_{iT})$ are the cross-sectional sample standard deviations of abnormal returns for the sample of *n* firms.

4. Results

The following sections present the results of the market and market-adjusted (zero-one) model analyses for the bid period or (-12,+12) for the target firms. The results are shown and explained in terms of the performances of the monthly average abnormal returns (AARs), due to their correlations with the significance tests for the total standardised abnormal returns (TSRs) and the average event-period standardised abnormal returns (ASRs), cumulative average abnormal returns (CAARs) and average buy-and-hold abnormal returns (ABHARs). The main issues are the size and signs of these abnormal returns and whether or not they are significantly different from zero.

Tables 1 and 2 show that in month 0, the monthly AARs estimated from the zero-one model are significantly positive at 12.80% which are close to the 13.70% when estimated from the market model. The CAARs over the period (-12,0) are positive at 30.80% as estimated from the market model, which are similar to those of 31.10% as estimated from the zero-one model. Table 3 shows additional evidence that the percentage of stocks with positive monthly AARs estimated from the both models are 65.38%, which are higher than the average percentages of 49% and 50.23% as estimated from the market and zero-one models respectively. The percentage of stocks with positive CAARs is 67.31% as estimated from the market model and 71.15% as estimated from the zero-one model, which are also higher than the average of 58.46 % and 58.77% respectively. In addition, the evidence from the both models indicates that there are significantly positive monthly AARs immediately around the takeover announcement month, or during the period (-1,+1). Table 3 reveals a consistently high percentage of stocks with positive AARs during the period (-1+1), or an average of 62.82% and 63.46% as estimated from the market and zero-one models respectively. Moreover, the CAARs over the period (-1,+1) are positive up to 27.50% and 30.50%, compared with the CAARs over the period (-12,+12) of 47% and 40.70%, as estimated from the zero-one and market models consecutively. Likewise, Table 3 presents the high percentage of stocks with positive CAARs during the period (-1+1), or an average of 67.31% and 67.95% as estimated from the zero-one and market models consecutively. This robustly indicates that the target firm's shareholders gain substantial and positive abnormal returns instantly around the takeover announcement month.

Table 1

Abnormal Returns Estimated from the Market and Market-Adjusted Models

This table presents the monthly average abnormal returns (AARs) and the cumulative average abnormal returns (CAARs) to target firms for tender offers occurring from 1992-2002. The measurement of the takeover announcement effects on the firms, the realised returns for the target firm's shareholders for the bid period (-12,+12) were measured by the market and market-adjusted (zero-one) models. The AARs are monthly abnormal returns for the target firm's shareholders from 12 months before the event month until 12 months after the event month. These were estimated then; cross-sectional averages in each month were calculated over the number of the firms. The CAARs are the AARs which are accumulated from the first month of the investigation period until the last month of the period. For comparison, this table demonstrates the performances estimated from both the market and market-adjusted (zero-one) models of total target firms. The sample sizes (N) for the target firms are presented in the parentheses.

	Target Firms (52)			
	Market Model		Market-Adjusted Model	
Event Month	AARs	CAARs	AARs	CAARs
-12	0.021	0.021	0.027	0.027
-11	0.013	0.034	0.021	0.048
-10	0.003	0.037	0.007	0.055
-9	-0.019	0.019	-0.010	0.045
-8	-0.031	-0.013	-0.023	0.022
-7	0.011	-0.002	-0.006	0.016
-6	0.003	0.001	-0.007	0.009
-5	0.028	0.028	0.011	0.020
-4	0.013	0.041	0.021	0.040
-3	-0.002	0.039	-0.001	0.039
-2	0.026	0.065	0.045	0.084
-1	0.105	0.170	0.099	0.183
0	0.137	0.308	0.128	0.311
+1	0.063	0.371	0.048	0.359
+2	-0.008	0.363	0.012	0.371
+3	0.030	0.394	0.026	0.397
+4	-0.013	0.381	0.010	0.407
+5	-0.005	0.375	0.001	0.408
+6	0.025	0.401	0.048	0.457
+7	-0.038	0.362	-0.052	0.405
+8	0.010	0.373	0.023	0.428
+9	0.048	0.420	0.045	0.473
+10	0.017	0.438	0.021	0.493
+11	-0.026	0.412	-0.017	0.476
+12	-0.004	0.407	-0.006	0.470

Table 2

The Sum of Standardised Residuals (TSRs) and Average Event-period Standardised Residuals (ASRs) Estimated from the Market and Market-Adjusted Models

This table presents the cross-sectional total and average monthly standardised abnormal returns (residuals) for the bid period (-12,+12) for tender offers occurring from 1992-2002. Specifically, to analyse target firm's performances, the realised

returns for the firms' shareholders for the bid period (-12,+12) were estimated from the market and market-adjusted (zero-one) models. The monthly abnormal returns for the target firm's shareholders from 12 months before the event month until 12 months after the event month were calculated. Then, the monthly abnormal returns were standardised and cross-sectionally summed and averaged to form the monthly total or the sum of the standardised residuals (TSRs) and the average event-period standardised residuals (ASRs) respectively. The results show the monthly TSRs and ASRs for the target firm's shareholders. For comparison, this table demonstrates the performances estimated from both the market and market-adjusted (zero-one) models of total target firms. To test the significance of the monthly abnormal returns, the standardised-residual and standardised cross-sectional tests were applied and the t-statistics were calculated. The t-statistics are the sum of the standardised residuals divided by (approximately) the square root of the number of sample firms, and the average event-period standardised residual divided by its contemporaneous cross-sectional standard error respectively. The standardised residual equals the event-period residual divided by the standard deviation of the estimation-period residuals, adjusted to reflect the forecast error. The formulas are as follows: $t = \sum_{i=1}^{N} SR_{iE} \Big/ \sqrt{N}$; $t = 1/N \sum_{i=1}^{N} SR_{iE} \Big/ \sqrt{1/N(N-1) \sum_{i=1}^{N} (SR_{iE} - \sum_{i=1}^{N} SR_{iE} /N)^2}$. The sample sizes (N) for the target firms are presented in the parentheses, 36 and 25 months were selected for the estimation-period and event-window consecutively.

	Target Firms (52)							
	Market Model				Market-Adjusted Model			
Event Month	TSRs	(t)	ASRs	(t)	TSRs	(t)	ASRs	(t)
-12	16.086	(2.16)*	0.309	(0.75)	15.601	(2.10)*	0.300	(0.86)
-11	5.575	(0.75)	0.107	(0.48)	2.535	(0.34)	0.049	(0.25)
-10	7.498	(1.01)	0.144	(0.59)	-5.436	(-0.73)	-0.105	(-0.87)
-9	3.973	(0.53)	0.076	(0.38)	1.038	(0.14)	0.020	(0.09)
-8	-9.085	(-1.22)	-0.174	(-1.16)	-10.096	(-1.36)	-0.194	(-1.36)
-7	4.710	(0.63)	0.091	(0.39)	-12.261	(-1.65)	-0.236	(-1.10)
-6	-2.641	(-0.36)	-0.051	(-0.24)	-12.537	(-1.69)	-0.241	(-0.95)
-5	12.451	(1.68)	0.239	(0.91)	4.269	(0.57)	0.082	(0.31)
-4	4.797	(0.65)	0.092	(0.59)	4.768	(0.64)	0.092	(0.59)
-3	2.521	(0.34)	0.048	(0.21)	2.583	(0.35)	0.050	(0.23)
-2	20.696	(2.78)**	0.398	(1.43)	27.060	(3.64)**	0.520	(1.97)
-1	51.065	(6.87)**	0.982	(3.05)**	40.571	(5.46)**	0.780	(2.65)*
0	79.632	(10.71)**	1.531	(3.02)**	67.876	(9.13)**	1..305	(2.68)**
+1	42.933	(5.78)**	0.826	(2.62)*	29.633	(3.99)**	0.570	(2.02)*
+2	-37.139	(-5.00)**	-0.714	(-0.99)	-8.606	(-1.16)	-0.165	(-0.41)
+3	14.973	(2.01)*	0.288	(0.93)	0.969	(0.13)	0.019	(0.06)
+4	8.109	(1.09)	0.156	(0.41)	15.689	(2.11)*	0.302	(0.68)
+5	-14.960	(-2.01)*	-0.288	(-1.09)	-8.941	(-1.20)	-0.172	(-0.70)
+6	18.561	(2.50)*	0.357	(1.58)	21.214	(2.85)**	0.408	(1.99)
+7	-15.738	(-2.12)*	-0.303	(-1.12)	-25.847	(-3.48)**	-0.497	(-1.60)
+8	10.262	(1.38)	0.197	(1.00)	0.339	(0.05)	0.007	(0.01)
+9	34.208	(4.60)**	0.658	(1.61)	31.006	(4.17)**	0.596	(1.36)
+10	1.432	(0.19)	0.028	(0.07)	0.748	(0.10)	0.014	(0.03)
+11	0.329	(0.04)	0.006	(0.03)	-2.448	(-0.33)	-0.047	(-0.19)
+12	3.696	(0.50)	0.071	(0.43)	3.171	(0.43)	0.061	(0.29)

*significant at 5% level **significant at 1% level

Table 3

Abnormal Returns and Percentages of Stocks with Positive Abnormal Returns Estimated from the Market and Market-Adjusted Models

This table shows the monthly average abnormal returns (AARs), the percentages of stocks with positive AARs, the cumulative average abnormal returns (CAARs) and the percentages of stocks with positive CAARs to target firms for tender offers occurring from 1992-2002. The measurement of the takeover announcement effects on the firms, the realised returns for the target firm's shareholders for the bid period (-12,+12) were measured by the market and market-adjusted (zero-one) models. The monthly abnormal returns for the target firm's shareholders from 12 months before the event month until 12 months after the event month were estimated then, cross-sectional averages in each month were calculated over the number of the firms. The CAARs are the AARs which were accumulated from the first month of the investigation period until the last month of the period. The positive AARs and CAARs for the target firm's shareholders in each month were counted and calculated to form the percentages for each month respectively. Thus, the percentages of stocks with positive or negative abnormal returns indicate the proportion of the stocks or firms experienced positive or negative abnormal returns to total stocks or firms. The sample sizes (N) are 52 target firms.

	Target Firms (52)							
	Market Model				Market-Adjusted Model			
Event Month	AARs	Percentage of positive AARs	CAARs	Percentage of positive CAARs	AARs	Percentage of positive AARs	CAARs	Percentage of positive CAARs
-12	0.021	28.85	0.021	28.85	0.027	32.69	0.027	32.69
-11	0.013	46.15	0.034	42.31	0.021	51.92	0.048	46.15
-10	0.003	44.23	0.037	44.23	0.007	51.92	0.055	44.23
-9	-0.019	51.92	0.019	46.15	-0.010	46.15	0.045	48.08
-8	-0.031	38.46	-0.013	40.38	-0.023	40.38	0.022	46.15
-7	0.011	51.92	-0.002	44.23	-0.006	46.15	0.016	40.38
-6	0.003	48.08	0.001	42.31	-0.007	46.15	0.009	38.46
-5	0.028	44.23	0.028	42.31	0.011	36.54	0.020	44.23
-4	0.013	48.08	0.041	53.85	0.021	51.92	0.040	48.08
-3	-0.002	46.15	0.039	48.08	-0.001	46.15	0.039	50.00
-2	0.026	55.77	0.065	50.00	0.045	65.38	0.084	46.15
-1	0.105	57.69	0.170	61.54	0.099	63.46	0.183	59.62
0	0.137	65.38	0.308	67.31	0.128	65.38	0.311	71.15
+1	0.063	65.38	0.371	75.00	0.048	61.54	0.359	71.15
+2	-0.008	44.23	0.363	73.08	0.012	55.77	0.371	73.08
+3	0.030	48.08	0.394	73.08	0.026	42.31	0.397	73.08
+4	-0.013	42.31	0.381	71.15	0.010	48.08	0.407	71.15
+5	-0.005	50.00	0.375	67.31	0.001	53.85	0.408	69.23
+6	0.025	55.77	0.401	69.23	0.048	61.54	0.457	71.15
+7	-0.038	30.77	0.362	69.23	-0.052	26.92	0.405	67.31
+8	0.010	46.15	0.373	71.15	0.023	53.85	0.428	69.23
+9	0.048	57.69	0.420	71.15	0.045	51.92	0.473	71.15
+10	0.017	50.00	0.438	69.23	0.021	48.08	0.493	69.23
+11	-0.028	51.92	0.412	69.23	-0.017	55.77	0.476	76.92
+12	-0.004	55.77	0.407	71.15	-0.006	51.92	0.470	71.15

Before month 0, the market responds to the takeover news in month -2, at least. The monthly AARs in month -2 are significantly positive at 2.60% and 4.50%, resulting in the positive abnormal returns for the target firm's shareholders of 13.10% and 14.40% when estimated from the market and zero-one models respectively. The largest positive monthly AARs occur in month -1, which are 9.90% and 10.50% when estimated from the zero-one and market models respectively. The returns account for 54.10% and 61.76% of the CAARs over the period (-12,-1) which are positive at 18.30% and 17%, when estimated from the zero-one and market models respectively. Accordingly, these CAARs over the period (-12,-1) account for 58.84% and 55.19% of the positive CAARs over the period (-12,0). The results are similar to past studies, for example, Keown and Pinkerton (1981), Jarrell and Poulsen (1989), Meulbroek (1992) and Ascioglu, Mclnish and Wood (2002) report positive abnormal returns of about 11-14.20%. They are also consistent with prior research, and can be explained by Firth's (1980) suggestion that the returns reflect the leakage of takeover news which is similar to King and Padalko's (2005) otherwise; this represents the building up of a pre-takeover share holding by the bidding firms; and by Goergen & Renneboog's (2004) suggestion that the takeover announcement is anticipated, probably as a result of rumours or insider trading. Thus, it can be concluded that the market responds to the takeover news as being potentially good news prior to the takeover announcement month. However, the results are inconsistent with some other studies; see, for example, Danbolt (2002) reports negative abnormal returns over the period (-8, -3) months, but they are insignificant.

Table 4

Summary of Results for Target Firms (Bid Period) Investigation

Sample	Market Model (-12,+12) CAARs	CAARs (-12,-1)	CAARs (-12,0)	CAARs (+1,+12)	ABHARs	ATSRs	AASRs	Market-Adjusted Model (-12,+12) CAARs	CAARs (-12,-1)	CAARs (-12,0)	CAARs (+1,+12)	ABHARs	ATSRs	AASRs
Target firms (52)	0.170	0.308	0.099	0.407	1.466[1]	10.558	0.203	0.180	0.311	0.16	0.470	0.382	7.316	0.141
	(NA)	(NA)	(NA)	(2.14)*	(1.43)	(1.42)	(0.64)	(NA)	(NA)	(NA)	(3.69)**	(1.94)	(0.98)	(0.36)
	AARs							AARs						
	0	-1	-2					0	-1	-2				
	0.137	0.105	0.026					0.128	0.099	0.045				
	CAARs							CAARs						
	(-2,-1)	(-1,+1)						(-2,-1)	(-1,+1)					
	0.131	0.305						0.144	0.275					
	CAARs							CAARs						
	(-20,-1)days							(-20,-1)days						
Keown & Pinkerton (1981)[2]	0.122			Jabbour, Jalilvand, & Switzer (2000)[3]				0.055						
Jarrell & Poulsen (1989)[2]	0.110			King & Padalko (2005)[3]				0.070						
Meulbroek (1992)[2]	0.130													
Sanders & Zdanowicz (1992)[2]	0.081													
Ascioglu, Mclnish, & Wood (2002)[2]	0.142													

Note: CAARs=cumulative average abnormal returns; ABHARs=average buy-and-hold abnormal returns; ATSRs=the means of total or the sum of standardised residuals; AASRs=the means of the average event-period standardised residuals. The test statistics are provided in the parentheses below the values of the abnormal returns. According to the conventional t tests, the results of the significance tests are the tests for the CAARs and ABHARs over the period (-12,+12) for the bid period investigation.

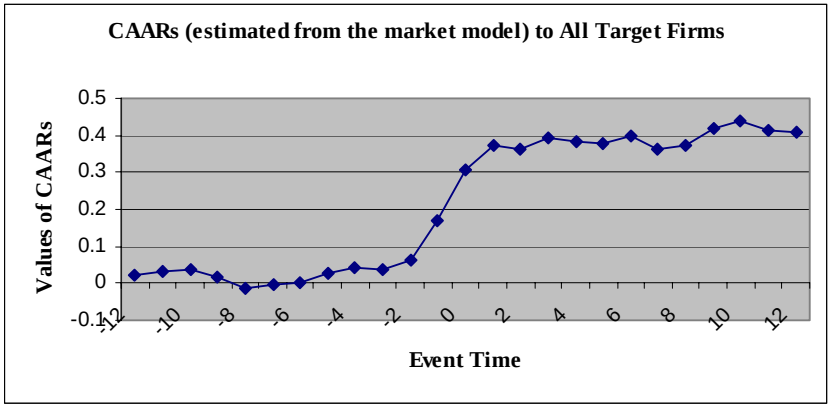
[1] When excluded Q: UOXT which has the remarkable substantial stock price returns in the sample, the ABHARs are significantly positive at 47.13% (t=2.12).
[2] The U.S. studies.
[3] The Canadian studies.
*significant at 5% level **significant at 1% level

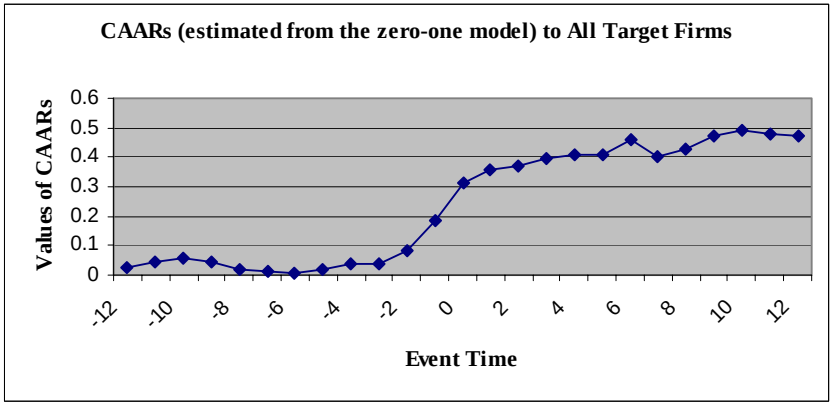
Subsequent to month 0, the CAARs over (+1,+12) are positive at 9.90% and 16% when estimated from the market and zero-one models respectively. One explanation offered by Akbulut and Matsusaka (2003) is that takeover announcements convey primarily bad news about the bidding firms and little news about the target firms, meaning that the announcement returns are if anything downward-biased estimates of the value created by takeovers. The CAARs over the period (-12,+12) are significantly substantial positive at 40.70% when estimated from the market model (see Table 4), which are in line with the significant and positive CAARs of 47% when estimated from the zero-one model. Between the period (-12,-1) and (-12,+12), the CAARs for the target firm's shareholders increase 23.70% from 17% to 40.70% as estimated from the market model, which parallels the increases of 28.70% from 18.30% to 47% as estimated from the zero-one model. Meanwhile, the ABHARs over the period (-12,+12) are positive approximately at 38.20% as estimated from the zero-one model compared with 146.60% as estimated from the market model. All the ATSRs and AASRs are also positive. These results corroborate those of the positive CAARs over the same time period (-12,+12) (see Table 4), and suggest a positive impact of takeovers on the wealth of the target firm's shareholders after the announcement month.

Thus, the results are consistent with prior studies, if of a different magnitude, and suggest the positive market impact of takeovers on the wealth of target firm's shareholders month.

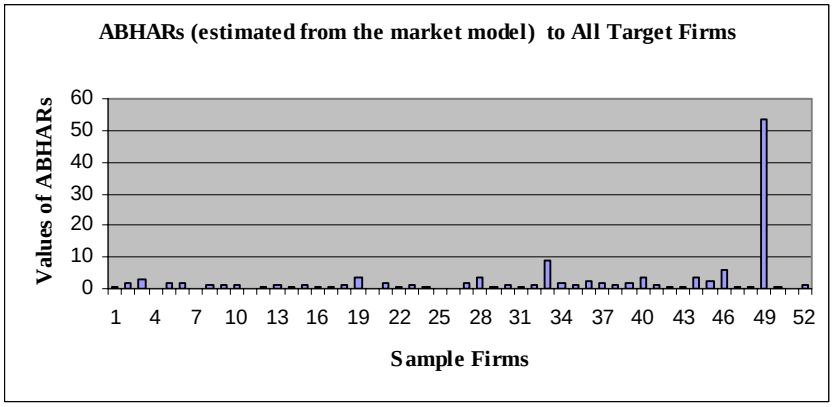
Figure 1. CAARs and ABHARs Estimated from the Market and Market-Adjusted Models Applied to All Target Firms (Bid Period).

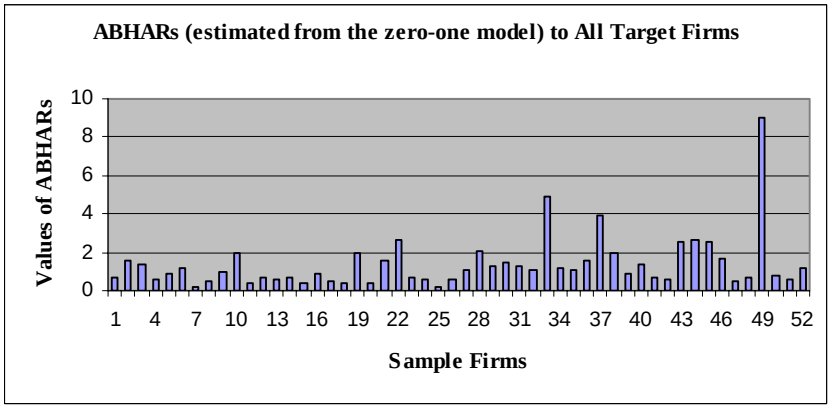
Cumulative Average Abnormal Returns Estimated from the Market and Market-Adjusted Models





Average Buy-and-Hold Abnormal Returns Estimated from the Market and Market-Adjusted Models





5. Conclusion

The findings for the bid period suggest that in the takeover announcement month, the takeover results in positive monthly abnormal returns, or AARs, of 12.80% when estimated from the zero-one model and 13.70% when estimated from the market model for the target firm's shareholders. Also, the event leads to substantially positive cumulative average abnormal returns, or CAARs, approximately 30.80% as estimated from the market model and 31.10% as estimated from the zero-one model. The evidence also indicates that the market reacts to the event news as being likely good news prior to the announcement month.

Subsequent to month 0, the results from the two approaches are robust. The CAARs over the period (+1,+12) and (-12,+12) are positive at 9.90% and 16 %; and significantly positive at 40.70% and 47%, when estimated from the market and zero-one models respectively. The BHAR approach was also used to strengthen the results for the post-takeover announcement month, suggesting that the takeovers increase positive ABHARs to about 38.20% as estimated from the zero-one model, and 146.60% as estimated from the market model, for the target firm's shareholders.

Finally, the results are consistent with prior studies, as a whole, in spite of variations in the time period, type of acquisition, observation period and methodology. I conclude that on balance, Thai takeovers create significant and substantial positive values in each time period, before the announcement, at the announcement, and after the announcement month, for the target firm's shareholders. This study applies a broader and more comprehensive range of methods and metrics than used in prior Thai takeover studies, and contributes to the understanding of the market impact of takeover announcements on Thai target firms.

Endnotes

[1] "Companies under Rehabilitation Sector" or "REHABCO" is a sector established by the SET in March 1998 to clearly separate listed companies requiring major restructuring due to substantial losses over time. Initially, 33 companies were classified under REHABCO.

[2] The purchased target shares vary from 25.60% to 28.99%, after shares are purchased; the holding of target shares is 62.83%, on average, whilst the biggest target share holding is 99.91%.

[3] There are about 22.52% of the total tender offers are engaged with delisted purposes and approximately 60.78 % of the total delisted companies are caused by mandatory delisting.

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