EFFECTS OF PROPERTY ACQUISITION AND DISPOSAL ON PROPERTY STOCK VALUE

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Abstract

The study utilizes the event study methodology to evaluate the effect(s) of acquisition and/or disposal announcement(s) on the value of property stocks of 22 companies listed on the Singapore Exchange (SGX). The study focuses on the period from 1994 to 1999. It was found that the impact of both acquisition and disposal announcements on shareholder wealth during the period, albeit positive, is not significant at the 0.05 level. However, a company's announcement of intent to dispose of its asset(s) had a significantly positive cumulative excess return during the period. This implies that, apart from announcement of intent to dispose of asset(s), investors generally cannot significantly profit from a prior knowledge of acquisition and/or disposal announcements. Furthermore, it was found that "size effect" is of no significance to Singapore property stock market.

Key Words: Property, Acquisition, Disposal, Announcement, and Abnormal Profit.

Introduction

Event study has become an important part of finance since the seminal study of stock splits by Fama *et al.* (1969). However, research in event study has principally focused on major international stock markets. Smaller stock markets of emerging and newly developed economies have received little attention. The paper, by specifically focusing on the acquisition/disposal of property asset/business in Singapore, adds a newly developed market perspective to the extant literature that is centred on the major international markets.

The paper provides an event analysis of property companies that are listed on the stock exchange of Singapore (SGX). Two specific events are examined: announcement of "intent to acquire and/or dispose", and announcement of "completed acquisitions and/or disposals" of property asset and/or business. The literature on earnings announcements suggests that equity size, measured by the market capitalization, plays a significant role in detecting the existence of an event. Therefore, the paper also considers the impact of company size, vis-à-vis each of the events that are being assessed, on the performance of securitized real estate in Singapore. The analytical study further offers a test of the market efficiency hypothesis for Singapore property stock market. The paper therefore begins with a review of the relevant literature, and research strategy/design. This is followed by the methodology and a brief discussion of the appropriate statistical methods of testing for abnormal returns. The empirical results are thereafter presented, analysed, interpreted and discussed to draw conclusions for Singapore property stock market.

Literature Review

Although the acquisition and/or disposal of corporate property assets affect(s) shareholders' wealth, the nature and extent of such effect(s) have been a polemical issue among researchers. Hite and Owers(1983), Schipper and Smith (1983), Hite *et al.* (1984) and Owers and Rogers (1986) find that positive abnormal returns result from acquisitions and divestiture of real estate assets. This is attributed to the supposedly uniqueness of real estate and the attendant tax benefits. Allen and Sirmans (1987) have examined the wealth effects of REIT merger on the acquiring trust's shareholders to find a significant positive two-day abnormal return of 5.78%. Allen and Sirmans (1987) further demonstrate that the value gains from the merger exercise are mainly attributable to improved management efficiency rather than offsetting tax losses. McIntosh *et al.* replicate the earlier findings of significant wealth effects accruing to the target REITs on the announcement of the merger proposal. However, there were insignificant abnormal returns for the target REITs in the pre-merger announcement period. Glascock *et al*. (1989) show that buyers (firms engaged in acquisition) do not experience abnormal returns and that only sellers (firms engaged in disposals) enjoy weak positive returns (see also Wong *et al*., 1993; McIntosh *et al*., 1995;). The difference in the results of Glascock *et al*. (1989) and that of Allen and Sirmans (1987), Hite *et al*. (1984) is most likely attributable to different sample composition. The former group of researchers basically focused on non-property companies buying and selling property assets, while the latter group focused on property firms.

In addition, Glascock *et al*. (1991) find that market structure is important in determining the apportionment of gains to buyers and sellers. Furthermore the gain is found to be higher for both buyers in single-purchase groups, and sellers, when the transaction involves a property, such as land and buildings, than when it involves a division or subsidiary of a business because of the tax gain attributable to property assets. Owners of property assets can enjoy a net gain in depreciation benefits over cost of asset management. Furthermore, the company may find it advantageous to keep the fully depreciated property asset as long as the operating advantages offset the tax benefits. It must be noted, however, that companies in Singapore normally cannot depreciate their properties against profits.

There is some evidence to suggest that the value of property assets belonging to non-property firms may be realized by engaging in strategies such as acquisitions and disposals [Owers and Rogers (1986)] and sales-leasebacks [Rutherford (1990)]. However, Owers and Rogers (1986) state, inter alia, that their findings on sell-off transactions cannot be interpreted as supporting the notion that property assets are undervalued to a greater extent than other types of assets. They contrasted their findings with the conclusions of studies based on the examination of property asset realignment by spin-off to discover that the two types of restructuring have different tax implications. It was also found that the smaller stock price changes in the case of sell-offs might result from differences in tax effects, information disclosure or relative sizes of transactions.

Liow (1997) concludes that corporate real estate disposals and sale-leasebacks are value-enhancing activities. One reason for this is that, the stock market sometimes fails to recognize the value of retail firm's real estate holdings when the holdings are held as part of a conglomerate and carried at low balance sheet values. Furthermore, Liow (1997) finds that disposal decisions are more profitable than acquisition decisions in the market's evaluation.

Another aspect of the event study literature is the impact of the size of the firm on stock price (i.e. size effect). Banz (1981), Keim (1983), Roll (1983), and Blume and Stambaugh (1983) conclude that prices of small capitalization stocks increase significantly relative to large capitalization stocks. This has been replicated by Bernard and Thomas (1990) who find that a "small firm" effect exists for the earnings announcement events while Ball and Kothari (1991) find that positive abnormal returns decrease as firm size increases. It is therefore hypothesized that ***the announcement of property acquisitions and disposals has a significant impact on share returns. Furthermore, the return behaviour around an announcement date is a function of the asset as well as the completion of, or the intent to complete an event, and the size of the firm.***

To test the hypotheses, buyers and sellers are grouped according to the type of event (i.e. completion or intent to complete) and the type of property asset (i.e. property or division/subsidiary). A normal return for the sample companies' shares based on the general market conditions will be identified. By comparing actual returns around an event announcement to the normal or expected returns, the impact of announcement effect can be operationalised by measuring the excess or unexpected returns that cannot be explained by the general market influences. The significance of the announcement effect will be examined through statistical testing of the above hypotheses.

Research Strategy

The event parameter model [see Equation (1)] will be adopted for this research. For each observation in the forecast interval, there is one dummy variable that has a value of one on that observation only and is zero elsewhere. Thus, in the forecast interval of *N* observations, *N* dummy variables are required:

$$R_j = \alpha_j + \beta_j R_{mt} + \sum_{n=T+1}^{T+N} \tau_{jn} D_{nt} + e_{jt} \,,$$

$$t = 1, \ldots T \,, \; T + 1, \ldots \; T + N \qquad (1)$$

where R_{jt} = return on security *j* on day *t*;

α_j = OLS estimate of the intercept;

β_j = OLS estimate of the slope or measure of systematic risk;

R_{mt} = return on the market on day *t*;

τ_{jn} = estimated coefficient on dummy variable D_{nt}, this is equivalent to PE_{jt};

D_{nt} = a dummy variable that is equal to one on observation n and is zero elsewhere;

e_{jt} = residual for security *j* on day *t*. (Note that with the dummy variable technique, the residual will be zero for observation *T*+1 through *T*+*N*);

T = observations in estimation window;

N = observations in event window.

Since the *N* observations in the forecast interval are "dummied out", these observations will not affect the estimated slope or intercept which is a function of the *T* observations.

On the actual day of announcement, t = 0. The event window includes 14 days each before and after (i.e. t = -14 to t = +14) the announcement or event date. A 100-day pre-event estimation window (i.e. t = -114 to t = -15, inclusive) is selected for the study. Most of the precedent event studies that utilise daily returns do not elucidate on how the length of the estimation and event window is determined [see Asquith *et al*. (1983), Rutherford (1990), Owers and Rogers(1986), Glascock *et al.*(1991), Glascock *et al.* (1987), Zaima and Hearth (1985)]. However, appropriate disclaimers are stated to assure the reader that the window is wide enough to avoid contaminating the regression.

Berry *et al.* (1990) calculated residuals on the first 90 observations of the 100 observations for the estimation period. Abnormal performance was injected into day 91 and residuals were calculated for days 91 through 100 to conform to the Brown and Warner (1985). Klein and Rosenfeld (1987) selected a 220-day estimation period ending 31 days before the event date (i.e. day t = -250 through day t = -31) mainly because it accords with the period used in Brown and Warner (1985). Liow (1997) chose a five-week interval around the announcement week but he states that the choice of the length of the event window was essentially arbitrary. Thompson (1988) used six event days per firm as this is claimed to be an efficient method of expanding the sample size [see Dyckman *et al.*, (1984)]. Thus, a total of 6 x 465 (firms), i.e. 2,790 individual firm t-tests were conducted and this is claimed to be sufficient to distinguish any important differences in Type I errors and power. Thus, the estimation and event periods of 100 and 29 days respectively that are used for this study are wide enough to avoid contaminating the regression.

Since this research is employing firm-specific events, the following procedures will be adopted, whilst assuming cross-sectional independence (Karafiath and Spencer, 1991):

1. Estimate Equation (1) via OLS for each firm j.
2. For each firm j, program the statistical package to calculate a t-test for the specified daily or cumulative prediction error. It must be noted that with sufficient degrees of freedom (not a problem with daily return data) the t-distribution is asymptotically standard normal.
3. Denote this firm-specific event test statistic as $Z = (1/\sqrt{J}) \sum Z_j$. This test will be asymptotically normal.

Research Design

The parameters (α_j and β_j) of the event parameter model are estimated during the estimation window, i.e. (-114, -15). Prediction errors or abnormal returns are calculated for each trading day in the event window i.e. (-14, +14) [equivalent to τ_{jn} or estimated coefficient of dummy variable D_{nt} in Equation (1)].

The individual prediction errors or residuals for a sample of J securities (PE_{jt}) are averaged to produce a series of mean prediction errors for each day t (MPE_t) in the event period. Mathematically, this is expressed as:

$$MPE_t = 1/J \times \left(\sum_{j=1}^{j=J} PE_{jt} \right) \qquad (2)$$

The cumulative prediction error from day T_{1j} to day T_{2j} for a sample of J securities (CPE_j) is defined as:

$$CPE_j = \sum_{T=T_{1j}}^{T=T_{2j}} MPE_t \qquad (3)$$

The accumulation is performed over various intervals. The selection of periods over which to accumulate the prediction errors (or abnormal returns) is left to the researcher. However it is desirable to provide information on when abnormal returns begin, and end, a nonrandom pattern [Peterson (1989:48)]. In other words, the interval from day T_{1j} to day T_{2j} is to be defined by the researcher. For the purpose of this study, CPE_j is calculated for four intervals (see Exhibits 5 and 7). For a sample of J securities, the mean cumulative prediction error ($MCPE$) is defined as:

$$MCPE = 1/J \times \left(\sum_{j=1}^{j=J} CPE_j \right) \qquad (4)$$

The expected value of CPE_j *is* zero in the absence of an abnormal performance. Following recent event studies, prediction errors (PE_{jt}) are standardised before they are aggregated, and the standardised aggregates form the basis of the test statistics. Assuming cross-sectional independence, standardised prediction errors are calculated as follows [see Brown and Warner (1985:28)]:

$$SPE_{jt} = PE_{jt} / \sigma(PE_j), \qquad (5)$$

where SPE_{jt} = standardised prediction errors for security j on day t;

PE_{jt} = prediction errors or abnormal returns on security *j* on day *t*;

σPE_j = estimated standard deviation for prediction error of security *j* (see Equation 6 and 7) ;

$$\sigma(PE_j) = \left(\sum_{t=-114}^{t=-15} (PE\,jt - PE^*j)^2 \,/\, k \right)^{-½} \qquad (6)$$

and

$$PE^*j = 1/k \times \left(\sum_{t=-114}^{t=-15} PEjt \right) \qquad (7)$$

where PE^*j = mean prediction error on security *j* during the 100-day pre-event estimation window (-114, -15) inclusive;

k = length of estimation window, in this study, *k* = 100;

The calculation for σ (PE_{jt}) in this paper assumes that any variation in the market during the event period is the same as it was during the estimation period. To adjust for any market variation in the event period and the number of observations during the estimation period, the standard error proposed by Patell (1976) has to be used. Each SPE_{jt} is assumed to be distributed unit normal in the absence of abnormal performance. Under this assumption, *Z (CPE)* is also unit normal.

To test the null hypothesis of zero prediction error (or abnormal return) on any event day *t*, the following test statistics is calculated:

$$Z\,(PE)_t = \sum_{j=1}^{j=J} SPE_{jt} \times (n)^{-½} \qquad (8)$$

where SPE_{jt} = standardised prediction error for security *j* on day *t*;

J = the number of sample securities at day *t*.

The mean standardised cumulative prediction error ($MSCPE_j$) over the interval from day T_{1j} to day T_{2j} for *J* firms is:

$$MSCPE_j = \sum_{t = T_{1j}}^{t = T_{2j}} SPE_{jt} \times (m)^{-½} \qquad (9)$$

where $MSCPE_j$ = mean standardised cumulative prediction error for J securities for the cumulative interval starting from day T_{1j} to day T_{2j};

m = adjustment factor which adjusts for the number of days for the cumulative interval starting from day T_{1j} to day T_{2j}.

To test the null hypothesis of zero prediction error accumulated over specified interval relative to the event, the test statistic for J securities is the sum of the $MSCPE_j$ divided by the square root of J (assuming serial independence) is:

$$Z(CPE) = \sum_{j = 1}^{j = J} MSCPE_j \times (J)^{-½} \qquad (10)$$

where $MSCPE_j$ = mean standardised cumulative prediction error for the sample of j securities for the cumulative interval starting from day T_{1j} to day T_{2j};

J = number of securities in the sample for the particular interval.

The parametric test is used for this study because Brown and Warner (1980, 1985) and Berry *et al* (1990) demonstrate that a nonparametric sign test assuming an excess return median of zero is mis-specified. This appears to be controverted by Corrado and Zivney (1992) and Barber and Lyon (1996) who have found that nonparametric test statistics are more powerful than parametric *t*-statistics. It must be noted, however, that Corrado and Zivney (1992) use a sample excess return median (instead of assuming a median of zero) while the study of Barber and Lyons (1996) relates to accounting-based measures of operating performance.

Methodology

The sample for this study consists of 22 public-listed companies (Exhibit 1) while the study covers the period from 1994 to 1999. Out of the 26 companies that were listed as property stocks during the period, only 22 of them made public announcements on property acquisitions and disposals. There were about 163 acquisitions and 40 disposals (see Exhibits 1 and 2) during the study period.

Exhibits 1 and 2 here

The companies have been classified as “small” (S) or “big” (B) according to their market capitalization as at 5 April of each year. Companies with market capitalization of less than S$800 million are categorized as “small” while those with a market capitalization of at least S$800 million are classified as “big” (see Cotter, 1997).

In view of Glascock *et al*. (1991) classification of property assets into two categories – Real Property, and Real Estate divisions and subsidiaries – the acquisition and disposal completions have been accordingly segregated and presented in Exhibit 3. The figures in Exhibit 3 suggest that property companies deal in property assets (111 completions) more than property divisions and/or subsidiaries (55 completions)

Exhibit 3 here

Since the study is based on daily returns, it is imperative that the first public disclosure of the transaction is “accurately” identified (Owers and Rogers, 1986:31) Therefore the announcement data for the study were extracted from the Straits Times (ST), Business Times (BT), and Dow Jones Interactive (DJI) on the following bases:

(i) When the Straits Times and Business Times report different event dates, the earlier date was selected [Owers and Rogers (1986:31)].

(ii) If firm *j* had more than one announcement of a different nature (i.e. an acquisition and disposal, or a property and a business-related event) on the same day, both events were excluded since it was difficult to distinguish how much each event had contributed to the abnormal returns.

(iii) When a firm experienced multiple-day events, only the first announcement was included in the sample to reduce event clustering. For example, when DBS took a stake in Sea View hotel and subsequently increased its stake in the hotel, the news was reported on several days consecutively, but only the first date of public announcement was included in the sample. This helps to reduce correlation between residuals of the announcements on consecutive days and hence, reduce bias results.

(iv) An event that involved more than one firm in the sample was removed from the sample, as it was no longer firm specific.

Furthermore, daily returns were extracted from DATASTREAM and adjusted for any capitalization change. The Stock Exchange of Singapore (SES), now called the Singapore Exchange (SGX) ALL-Singapore Index was used as a proxy for market return (R_{mt}). The daily return used in this study is calculated on the same basis as Henderson (1989:287):

$$R_{jt} = ln\ (1 + Return) \tag{11}$$

where R_{jt} = continuously compounded return on security j on day t.

The normality of the return distribution can be improved by using log-transformed returns. In addition, the transformation eliminates negative values and makes it easier to convert daily returns to weekly or monthly returns by taking a compound product. Returns will include only price changes and hence:

$$Return = (P_t - P_{t-1})/ P_{t-1} \tag{12}$$

or

$$Rjt = ln\ \{1 + (P_t - P_{t-1})/ P_{t-1}\} \tag{13}$$

where P_t and P_{t-1} are the closing prices of the index at day t and t_{-1} respectively.
The Durbin-Watson statistics (to be obtained from authors if required) indicate the existence of autocorrelation of residuals for some of the models. However, Reinganum (1982), Theobald (1983), Brown and Warner (1985) , and Dyckman et al (1984) have shown that the complicated procedures advocated by Scholes and Williams (1977) and Dimson (1979) to resolve the autocorrelation problem do not produce betas, which are significantly better than betas from OLS estimates. Brown and Warner (1985) further states that these complicated procedures do not improve the power of event studies. Henderson (1989) has accordingly concluded that corrections for the autocorrelation of residuals appear unwarranted. In view of this, autoreg models are not run for this study.

Hypotheses Testing

The first null hypothesis is that the value of prediction error (abnormal return) on any event day t = 0 is zero (i.e. MPE_t equals zero).

$$H_0: \mu = 0$$

$$H_1: \mu \neq 0$$

The second hypothesis is that the value of prediction error for a specified accumulated interval is zero (i.e. CPE_j equals zero).

H_0: μ = 0

H_1: μ ≠ 0

At the 5% significance level, the critical value of Z (0.95) = < - 1.96 or >+ 1.96. Thus the acceptance region at the 5% level is –1.96 < Z < +1.96. This implies that the null hypothesis is rejected when the test statistic is < - 1.96 or >+ 1.96. The impact of firm size is tested by abnormal returns for "small" and "big" companies.

Test for Announcement Effect – Completed Acquisitions and Disposals

The mean prediction errors (MPE_t) and cumulative prediction errors (CPE_j) in Exhibits 4 and 5 are each derived from Equations (2) and (3) while the test statistics are derived from Equations (8) and (10) respectively.

Exhibits 4 & 5 here

It is evident from the cumulative prediction errors (CPE_j) for the interval (-1, 0) that both acquisition and disposal activities were profitable. Real estate firms, which announced the *completion* of their acquisition and disposal activities, enjoyed a positive 0.56% and 0.27% cumulative excess return respectively (see Exhibit 5). On the event date itself (t = 0), shareholders in sub-sample COMP_ACQ and COMP_DISP enjoyed positive excess return of 0.27% and 0.47% respectively (see Exhibit 4). These results are similar to the findings of Allen and Sirmans (1987) and Hite *et al*. (1984). Although both returns are not statistically significant, the evidence of abnormal returns shows that the stock market does react to acquisition and disposal announcements.

Immediately after the announcements of completed property acquisitions and disposals [i.e. interval (+1, +14)], buying and selling firms suffered from declining market values (-1.44% and -0.99% respectively – Exhibit 4) despite positive returns of +0.27% and +0.47% respectively on the event day itself (Exhibit 5). For example, on day t = +1, all the firms in sub-sample COMP_ACQ experienced an average negative abnormal return of 0.41%. This trend of negative abnormal return continued to day t = +10. This implies that the stock market was not optimistic about the companies' real estate asset strategies albeit reacting favourably on the announcement date itself. This could be an indication of irrational market behaviour. Shareholders overreacted to the companies' announcements on the belief that the announcements were "good" news, when in reality, the supposedly piece of "good" news was an empty, speculative bubble. Thus share investors were forced to sell their shares almost immediately after purchasing them. Instead of holding on to the depreciating shares and incurring a higher loss in the long run, it was better to sell on day t = +1 to minimize their losses.

Furthermore, the statistics suggest that there was little opportunity for investors to profit from the knowledge of the announcement effect in Singapore. It is observed from Exhibit 4 that the mean prediction error for firms in sub-sample COMP_DISP were 0.56% on day t = +1 and 0.2% on day t = +2. If an investor bought a particular company's share in the mentioned sub-sample on day t = 0 and sold the shares at day t = +2, his/her gain would have been about 0.76%. This would have been just enough to cover the then existing commission rate of 0.75% for investors who traded stocks on the Internet (The Straits Times dated January 15, 2000). This implies that speculators could not thrive on announcement effects on the market as profits were negated by dealing cost.

Test for Announcement Effect – Completed Acquisitions and Disposals versus the Intent to Acquire and Dispose

The abnormal return attendant to a firm's announcement of its ***intent*** to acquire or dispose of its assets was relatively higher than the resultant abnormal profit from ***completion announcement***. Firms, which announced their intent to acquire or dispose of their assets, experienced an average abnormal return of 0.54% and 0.04% respectively on the announcement date (t = 0) (see Exhibit 4). However, both abnormal returns are not statistically significant at the 5% level. These findings contrast with earlier research by Asquith *et al*. (1983). However, companies, which announced their intent to dispose of their assets, enjoyed a 6.86% cumulative excess return [throughout the event window (-14, +14)], which is statistically significant at the 5% level (see Exhibit 5). The average residual or daily prediction error (MPE_{jt}) generally fluctuated from positive to negative and vice versa during the two weeks preceding the announcement date (see Exhibit 4). This may be attributed to "noises" or speculation among potential investors.

The values of companies that announced completed disposals or pending disposal activities fell, while the values of companies that announced completed acquisitions or pending acquisition activities increased, on day t = -1. The average abnormal negative return was greater for companies that announced their intent to dispose of their assets (-0.38%) than for companies that announced completion of disposal activities (-0.2%). Conversely, the average abnormal positive return was greater for companies that announced their intent to acquire new assets (0.52%) than for companies that announced completion of acquisition activities (0.29%). These returns are, however, not statistically significant (see Exhibit 4). Thus it may be concluded that the intent to embark upon property acquisition and/or disposal announcement had greater announcement effect than the corresponding completion announcement. This implies that the former type of announcement is a more profitable strategy for property companies. A similar trend is also observed on event day t = 0 for companies announcing acquisition activities. On day t = 0, companies in sub-sample COMP_ACQ enjoyed positive abnormal returns of 0.27% while companies in sub-sample INT_ACQ enjoyed a higher return of 0.54% (Exhibit 4). Once again, the abnormal returns are not statistically significant. Therefore the research hypothesis that the announcement of property acquisitions and disposals has a significant impact on share returns is rejected.

In addition, the findings of this study contradict past studies [e.g. Ong (1994), Liow (1998) and Wong et al (1990)] which conclude that SGX is a weak-form efficient market. The figures in Exhibit 5 indicate that investors could profit from companies' announcements of both their intent to acquire/dispose of new/ existing, assets and the expected completion date. This is evidenced by the fact that the values of these companies increased by 1.22% and 4.97% respectively in the (+1, +14) interval (see Exhibit 5). It was advisable to sell these shares immediately the completion of the event was finally announced as abnormal returns fell to -1.44% and –0.99% for sub-samples COMP_ACQ and COMP_DISP) respectively in the cumulative period (+1, +14) – see Exhibit 5.

Test for Announcement Effect – Property Assets versus Property Divisions/Subsidiary.

The mean prediction errors (MPE_t) and cumulative prediction errors (CPE_j) in Exhibits 6 and 7 are derived from Equations (2) and (3) while the test statistics are derived from Equations (8) and (10) respectively. It would appear from Exhibit 6 that acquisition of property business division/subsidiary by a property company is more profitable than acquisition of property assets. This is attested by the average abnormal return on event day t = 0 for sub-sample ACQ_B (0.38%) which is higher than the return for sub-sample ACQ_P (0.22%). In addition, the CER_j for interval (-1, 0) is positive for both sub-samples albeit relatively higher for sub-sample ACQ_B (0.83%) than for sub-sample ACQ_P (0.44%)(see Exhibit 7). Investors may feel that Singapore's property market is relatively small, volatile and risky. Thus, investors more favourably respond to property companies' decisions to venture into different forms of property business divisions or subsidiaries such as acquiring a hotel chain, buying into foreign real estate companies and joining in overseas real estate development projects, than to acquisition of a single hotel or investment in Singapore.

Exhibits 6 & 7 here

As far as disposal strategies are concerned, the statistics show that SGX values "disposal of property business division/subsidiaries" more favourably than "disposal of a property asset". Although the abnormal return (PE_{jt}) on event day t = 0 for firms in DISP_P (0.78%) is greater than for firms in DISP_B (0.12%) [Exhibit 6], the abnormal return statistics for interval (-14, -2) and (+1, +14) suggest that a strategy to liquidate a property division is more profitable than a strategy to divest a property asset (Exhibit 7).

These findings differ from Glascock *et al*. (1991) and Liow (1997) who conclude that buyers and sellers are likely to have a more positive reaction to an announcement relating to property transaction than to a property business division or subsidiary. This disparity may be attributable to the fact that this study focuses on property companies while Glascock *et al* (1991) and Liow (1997) deal with non-property companies. The decision of property companies to dispose of their property assets is often construed as signaling that the companies are not performing well in their core business – the real estate business. This invariably leads to a fall in the market value of the property companies.

It would appear paradoxical that property companies enjoyed positive abnormal returns for announcements both to acquire and dispose of a property division/subsidiary. It could be that investors view property companies' "acquisition of property business divisions/subsidiaries" as a form of repositioning strategy. Hence this piece of good news justifies the comparatively higher abnormal returns enjoyed by companies in sub-sample ACQ_B. Similarly, when these companies subsequently disposed of their property divisions, the stock market reacted positively to the disposal on the pretext that the companies were restructuring their operations to concentrate on their core business – Property!

If this study is reflective of future market behaviour, it is important for potential investors to note the consecutive negative abnormal returns for companies in sub-sample ACQ_P [See Exhibit 6, interval (+1, +9)]. Thus, when property companies announce the completion of their property division/subsidiary acquisition, investors should immediately sell their shares. Since firms in sub-sample ACQ_B experience positive abnormal returns in interval (-5, +4) and a dip on day t = +1 (see Exhibit 6), investors may buy and hold shares within this interval to make profit as CPE_j for (-5, +14) is 1.81%. Furthermore, it is advisable for investors who hold shares of companies in DISP_P and DISP_B to sell the shares one or two day(s) after the announcement date as abnormal returns become negative thereafter.

Size Effect

"Big" real estate firms which announced completion of an acquisition(s) enjoyed an insignificant cumulative excess return of +0.53% whereas "small" real estate firms enjoyed a significant negative 0.42% cumulative excess return in the interval (-1, 0) – see Exhibit 8.. On the event day itself (t = 0), shareholders in sub-sample (ACQ_BIG) enjoyed positive excess returns of 0.10%, as compared to negative excess returns of 0.10% for those in the sub-sample ACQ_SML. However, on day t = +1, both big and small real estate firms suffered fallen market values. Comparatively, the fall in market value is greater for small real estate firms (-0.57%) than for big real estate firms (-0.04%). Notwithstanding fallen market value on day t = +1, big firms enjoyed a 0.01% increase in market value in the interval (+1, +14). Small firms, on the other hand, suffered a -1.91% decline in market value during the same interval (see Exhibit 9). It must be noted, however, that the size effect is noticeable in the (-14, +14) interval where the CPE_J for ACQ_SML and ACQ_BIG are +4.08% and -0.45% although both are statistically insignificant. These results imply that shareholders of "small" firms could make profit by selling their shares in the (-14, -2) interval especially on days t = -14, -11, -10, -4 (Exhibits 9 and 8 respectively). Anyone who purchased such shares could not profitably dispose of them in the intervals (-1, 0) and (+1, +14) because of continuously depreciating market values. Conversely, investors could buy shares of sub-sample ACQ_BIG in the (-14, -2) interval and sold them for a statistically insignificant profit in the (-1, 0) and (+1, +14) intervals.

Exhibits 8 & 9 here

Turning to the divestiture of assets/business, one could see from Exhibit 9 that "big" firms performed better (CPE_J of 3.4%) than "small" firms (CPE_J of -8.14%) in the (-14, +14) interval. The mean prediction errors on day t = 0 show that disposal activities are profitable for both "small" and "big" firms (Exhibit 8). When "big" real estate firms announced the completion of the disposal of their property assets, their abnormal returns were slightly more pronounced (0.30%), as compared to those of the "small" real estate firms (0.26%). However, both abnormal returns are not statistically significant at the 0.05 level. Furthermore, big companies enjoyed a statistically significant positive abnormal returns of 1.04% on day t = +1 while their cumulative abnormal returns remained positive during the interval (+1, +14) [see Exhibit 9].

Similarly, small companies enjoyed positive abnormal returns of 0.31% on day t = +1. However, they suffered cumulative returns of – 4.84% and –8.14% during the time interval (+1, +14) and whole event window (-14, +14) respectively. This could be attributed to the stock market's irrational behaviour as the market players reacted favourably on the announcement date itself in spite of being pessimistic about "small" real estate companies' disposal strategies.

It would appear from the above analyses that company size does affect the market's reaction to the real estate companies' disposal decisions. Whenever a company in the sub-sample DISP_SML decides to dispose of their property assets, the stock market viewed it as high risk – i.e. the company could be having some cash flow problems and needed to liquidate its property assets. On the other hand, the stock market viewed the big companies' similar moves as liquidating assets for other forms of investment or diversification into other forms of business. It must be noted, however, that while acquisition strategies favoured "small" firms, disposal strategies favoured "big" firms. However, the abnormal cumulative returns in either case were statistically insignificant. This implies that size effect may not apply to Singapore property stock market, It may be cautioned, however, that the small sample size for ACQ_SML, DISP_SML and DISP_BIG could invalidate the results of the size effect. Further research is therefore required to verify the size effect.

CONCLUSION

The above discourse shows that property acquisition and disposal announcement(s) affect returns of property stocks on the SGX. Although acquisition announcements are found to be more profitable than disposal announcements, the abnormal return associated with either strategy is not statistically significant at the 0.05 level. This may imply that news about property companies' acquisition and/or disposal activities is often leaked to the market to dilute the announcement effect on the event day (Bowman, 1983). Thus, investors cannot significantly profit from a prior knowledge of the announcement date. Furthermore, the size effect does not apply to the Singapore property stock market. This finding is consistent with Cotter (1997).

It may be warned that the accuracy of the findings of this study may be affected by calendar anomalies such as holiday effect, the January effect and the day of the week effect (Wong et al., 1999). Furthermore, other material events might have occurred around the event date to bias the impact of the event (Owers and Rogers, 1986). For example, the anti-speculation curbs of 15th May 1996, and the "Off Budget Measures" of 29th June 1998 might have affected the result(s) of acquisition(s) and/or disposal(s) that occurred on, and/or immediately after, these dates.

Notwithstanding these caveats, it is hoped that the paper sheds some light on the acquisition and/or disposal announcement effect(s) on property stocks on the SGX.

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Exhibit 1: Frequency of Property Events by Companies**

COMPANY	ACQ	DISP	P	B	FIRM SIZE
Bonvests	3	0	1	2	SML
Bukit Sembawang	1	0	1	0	SML
Centrepoint Properties#	5	0	5	0	SML
Chemical Industries	1	0	1	0	SML
City Developments	23	0	18	5	BIG
DBS Land+	32	4	22	14	BIG
Dragon Land	3	0	3	0	SML
First Capital	19	9	15	13	BIG
Hong Fok	3	5	4	4	SML
Jack Chia MPH#	2	3	0	5	SML
Keppel Land##	19	4	20	3	BIG
LC Development	3	3	2	4	SML
Somerset Holdings++	10	2	10	2	NA
MCL Land Ltd	10	1	11	0	BIG
Marco Polo	4	0	3	1	BIG
Orchard Parade	4	1	3	2	SML
Parkway Holdings*	8	4	3	9	BIG
Scotts Holdings	3	2	3	2	SML
Singapore Land	3	0	2	1	BIG
TLB Land#	1	0	1	0	SML
United Overseas Land	2	1	3	0	BIG
Wing Tai	4	1	5	0	BIG
Total	163	40	136	67	

Source: Authors' compilation

Note

#: *No longer listed on SGX*

: *Previously known as Straits Steamship Land.*
+: *DBS Land and Pidemco Land merged to form CapitaLand on 21/11/00.*

++ : *Previously known as Liang Court Holdings.Merged with The Ascott Ltd to form Ascott on 25/11/00*
* : *Listed as property stock until November,1998.*
** : *Figures include both completed and uncompleted acquisition and disposal announcements.*
ACQ: Acquisition announcement.
DISP: Disposal announcement.
P: Propert.y
B: Business division/subsidiary.
SML: Small.
NA: Market value is not available on DataStream. Furthermore, there are no data in SES Journal to compute market capitalization to determine firm size.

Exhibit 2: Property Events by Type and Year

YEAR	COMP_ACQ	COMP_DISP	INT_ACQ	INT_DISP	TOTAL
1994	18	2	1	1	22
1995	29	7	3	0	39
1996	31	7	4	6	48
1997	27	6	4	3	40
1998	3	3	4	4	14
1999	32	1	7	0	40
Total	140	26	23	14	203

Source: Authors' compilation

Note: COMP_ACQ: Completed property acquisitions i.e. acquisitions were already completed on the event dates
COMP_DISP: Completed property disposals i.e. disposals were already completed on the event dates
INT_ACQ: Uncompleted property acquisitions i.e. only the intention of an acquisition was announced on the event dates
INT_DISP: Uncompleted property disposal i.e. only the intention of a disposal was announced on the event dates

Exhibit 3: Property Events by Type and Year*

YEAR	ACQ_P	DISP_P	ACQ_B	DISP_B	TOTAL
1994	12	2	6	0	20
1995	15	4	14	3	36
1996	20	3	11	4	38
1997	22	2	5	4	33
1998	2	2	1	1	6
1999	26	1	6	0	33
Total	97	14	43	12	166

Source : Authors' compilation

Note: ACQ_P: Property acquisitions.
DISP_P: Property disposals.
ACQ_B: Business (property) division/subsidiary acquisitions.
DISP_B: Business (property) division/subsidiary disposals.
**: Figures relate to announcements that were successfully completed.*

Exhibit 4: Excess Returns for Acquisitions (ACQ) and Disposals (DISP) by Completion (COMP_) and Intention (INT_).

Day	COMP_ACQ J = 140 *MPE_t*	COMP_DISP J = 26 *MPE_t*	INT_ACQ J = 23 *MPE_t*	INT_DISP J = 14 *MPE_t*
-14	-0.0019 (-1.0397)	-0.0065 (-0.9107)	0.0012 (0.3704)	0.0091 (1.7982)
-13	-0.0007 (-0.5719)	-0.0073 (-1.0307)	-0.0033 (-0.4756)	0.0138 (2.3723*)
-12	-0.0007 (-0.8867)	0.0027 (1.2548)	-0.0028 (-1.1536)	0.0012 (-0.1165)
-11	0.0049 (2.8836*)	0.0014 (0.2964)	-0.0074 (-1.1504)	0.0039 (0.1258)
-10	0.0050 (3.0165*)	-0.0016 (0.1857)	0.0040 (0.7866)	0.0139 (2.3744*)
-9	-0.0042 (-2.5955*)	-0.0001 (-0.1723)	-0.0014 (-0.9212)	-0.0086 (-1.8231)
-8	0.0009 (0.1370)	-0.0025 (-0.5262)	-0.0044 (-0.8081)	0.0118 (1.5611)
-7	-0.0017 (-1.4596)	0.0014 (-0.2851)	0.0086 (1.9072)	-0.0139 (-1.3829)
-6	-0.0011 (-0.2291)	0.0019 (0.2209)	-0.0005 (-0.4518)	0.0103 (2.8222 *)
-5	0.0002 (1.2519)	0.0023 (0.3201)	0.0050 (1.2827)	-0.0159 (-1.3254)
-4	-0.0008 (0.6246)	-0.0052 (-1.1055)	-0.0069 (-1.3150)	-0.0207 (-2.7516*)
-3	0.0008 (0.9101)	0.0068 (1.6835)	-0.0154 (-3.4605*)	0.0049 (0.6977)
-2	0.0011 (1.4004)	0.0073 (1.7098)	0.0012 (0.8872)	0.0127 (2.5805*)
-1	0.0029 (1.3487)	-0.0020 (-0.7226)	0.0052 (0.9098)	-0.0038 (-0.8293)
0	0.0027 (0.6259)	0.0047 (1.1733)	0.0054 (1.0312)	0.0004 (0.2853)
+1	-0.0041 (-0.6985)	0.0056 (1.5636)	0.0093 (1.8637)	-0.0085 (-0.5245)
+2	-0.0019 (-0.1621)	0.0020 (0.3262)	-0.0072 (-1.9200)	0.0173 (1.6306)
+3	-0.0005 (0.5297)	-0.0008 (0.1311)	0.0036 (0.3498)	-0.0012 (-0.4484)
+4	-0.0013 (-1.2641)	-0.0067 (-0.7047)	-0.0009 (0.2882)	0.0110 (1.5212)
+5	-0.0009 (0.6808)	0.0038 (0.6902)	0.0026 (0.6573)	0.0033 (1.3120)
+6	-0.0005 (1.8478)	0.0021 (0.4260)	0.0090 (1.5931)	0.0059 (0.7980)
+7	-0.0037 (-2.2250*)	-0.0015 (-0.0699)	-0.0018 (0.0512)	-0.0032 (-0.6408)
+8	-0.0022 (-0.8050)	-0.0095 (-1.7556)	0.0060 (0.9125)	0.0125 (1.8419)
+9	-0.0032 (-1.3380)	0.0036 (0.3264)	0.0045 (1.1572)	0.0116 (2.1164*)
+10	-0.0007 (0.2397)	-0.0024 (-0.4791)	-0.0049 (-0.8726)	-0.0001 (-0.3225)
+11	0.0015 (1.4069)	-0.0052 (-1.0461)	-0.0127 (-2.0800*)	-0.0030 (-1.1857)
+12	0.0039 (2.0647*)	-0.0049 (-1.0814)	0.0026 (0.4768)	0.0108 (1.7824)
+13	-0.0006 (-0.8626)	0.0086 (1.8792)	0.0064 (1.1959)	0.0079 (0.8163)
+14	-0.0001 (0.8117)	-0.0048 (0.2922)	-0.0044 (-0.5241)	-0.0145 (-2.3450*)

Source: Authors' calculation

Note: Test statistics are in parenthesis. J is the size of each sub-sample.
** : Statistically significant at 0.05 level, two-tailed.*

Exhibit 5: Cumulative returns for acquisitions (ACQ) and disposals (DISP) by completion (COMP_) and intention (INT_)].

Interval	COMP_ACQ J = 140 CPE_j	COMP_DISP J = 26 CPE_j	INT_ACQ J = 23 CPE_j	INT_DISP J = 14 CPE_j
-14 +14	-0.0070 (1.1328)	-0.0066 (0.3723)	0.0007 (0.1092)	0.0686 (2.3659*)
-14 -2	0.0018 (1.0816)	0.0005 (0.4550)	-0.0221 (-1.2487)	0.0223 (1.9228)
-1 0	0.0056 (1.3963)	0.0027 (0.3187)	0.0106 (1.3726)	-0.0034 (-0.3847)
+1 +14	-0.0144 (0.0604)	-0.0099 (-0.0230)	0.0122 (0.8416)	0.0497 (1.6977)

Source: Authors' calculation

Note: Test statistics are in parenthesis. J is the size of each sub-sample.
** : Statistically significant at 0.05 level, two-tailed.*

Exhibit 6: Excess Returns by Realty Assets (P) and Property Business Division (B)#.

Day	ACQ_P J = 97 *MPE*$_t$	ACQ_B J = 43 *MPE*$_t$	DISP_P J = 14 *MPE*$_t$	DISP_B J = 12 *MPE*$_t$
-14	-0.0005 (-1.6210)	-0.0051 (-3.7113*)	0.0003 (-3.4507*)	-0.0144 (-5.6962*)
-13	-0.0013 (-2.2098*)	0.0007 (-1.6779)	-0.0079 (-4.6976*)	-0.0066 (-3.9487*)
-12	-0.0015 (-2.6323*)	0.0010 (-1.3064)	0.0050 (-2.0190*)	-0.0001 (-2.9004*)
-11	0.0053 (1.0954)	0.0042 (0.2029)	0.0005 (-3.0011*)	0.0023 (-2.6729*)
-10	0.0063 (2.0269*)	0.0020 (-0.6513)	-0.0028 (-2.5046*)	-0.0002 (-2.7949*)
-9	-0.0052 (-3.7478*)	-0.0020 (-1.7994)	-0.0009 (-2.7288*)	0.0008 (-2.5024*)
-8	0.0015 (-0.6599)	-0.0006 (-1.2016)	-0.0006 (-2.0602*)	-0.0048 (-3.1680*)
-7	-0.0010 (-1.3179)	-0.0032 (-2.7893*)	-0.0017 (-2.8596*)	0.0050 (-1.3724)
-6	-0.0010 (0.4049)	-0.0014(-2.0248*)	-0.0021(-2.1617*)	0.0065 (-0.8041)
-5	-0.0001 (0.4297)	0.0007 (0.0885)	0.0065 (-0.8548)	-0.0027 (-1.4923)
-4	-0.0016 (0.1925)	0.0011 (-0.3821)	-0.0039 (-1.8172)	-0.0067 (-1.9738*)
-3	0.0011 (0.2343)	0.0002 (0.3752)	0.0041 (0.5430)	0.0099 (0.1595)
-2	-0.0006 (0.5500)	0.0048 (1.0908)	0.0023 (0.8004)	0.0133 (0.4975)
-1	0.0022 (0.3014)	0.0045 (1.6759)	-0.0046 (-1.6970)	0.0011 (0.1920)
0	0.0022 (0.2818)	0.0038 (0.7061)	0.0078 (1.5806)	0.0012 (0.0198)
+1	-0.0050 (-0.1661)	-0.0020 (-0.7058)	0.0049 (1.4697)	0.0065 (1.2914)
+2	-0.0040 (-0.3547)	0.0027 (0.8503)	0.0057 (1.1702)	-0.0024 (0.3709)
+3	-0.0015 (0.2834)	0.0019 (1.4451)	-0.0010 (0.9154)	-0.0005 (0.9363)
+4	-0.0020 (-0.6575)	0.0004 (-0.0735)	-0.0104 (0.3840)	-0.0023 (0.8574)
+5	-0.0008 (1.5251)	-0.0013 (0.4628)	0.0062 (2.1236*)	0.0010 (1.6090)
+6	-0.0007 (2.3439*)	0.0001 (1.6437)	0.0010 (1.5075)	0.0034 (2.4629*)
+7	-0.0034 (-0.9232)	-0.0043 (-0.4931)	-0.0033 (1.6421)	0.0007 (2.1648*)
+8	-0.0019 (0.1222)	-0.0030 (0.8039)	-0.0116 (0.3384)	-0.0069 (1.6691)
+9	-0.0028 (-0.2773)	-0.0042 (0.7472)	0.0019 (2.0469*)	0.0057 (3.4657*)
+10	0.0000 (1.8312)	-0.0022 (0.7321)	-0.0010 (2.8481*)	-0.00409 (1.9920*)
+11	0.0006 (1.8919)	0.0034 (3.0520*)	-0.0030 (2.8552*)	-0.0078 (1.7271)
+12	0.0046 (3.0864*)	0.0023 (2.7500*)	-0.0026 (2.7131*)	-0.0076 (2.4060*)
+13	-0.0017 (-0.2373)	0.0019 (2.7649*)	0.0117 (5.3303*)	0.0050 (4.5143*)
+14	-0.0013 (1.7984)	0.0025 (3.0334*)	-0.0106 (2.4434*)	0.0020 (5.0135*)

Source: Authors, calculation

Note: Test statistics are in parenthesis.
 # : Exhibit deals with completed events only.
J : The size of each sub-sample.
** : Statistically significant at 0.05 level, two-tailed.*

Exhibit 7: Cumulative Excess Return By Property Assets (P) and Property Business Division (B). – Completions Only

Interval		ACQ_P J = 97 CPE_j	ACQ_B J = 43 CPE_j	DISP_P J = 14 CPE_j	DISP_B J = 12 CPE_j
-14	+14	0.0088 (0.6675)	-0.0100 (1.0414)	-0.0027 (0.1596)	-0.0027 (0.3756)
-14	-2	0.0015 (0.9165)	0.0024 (0.5750)	-0.0011 (0.2727)	0.0024 (0.3752)
-1	0	0.0044 (0.4842)	0.0083 (1.7922)	0.0031 (0.1067)	0.0023 (0.3538)
+1	+14	-0.0200 (-0.1055)	-0.0018 (0.2674)	-0.0121 (-0.0734)	-0.0074 (0.0453)

Source: Authors' calculation

Note:

Test statistics are in parenthesis.

J is the size of each sub-sample.

Exhibit 8: Excess Returns for Acquisitions (ACQ_) and Disposals (DISP_) for Small (SML) and Big (BIG) Companies.

Day	ACQ_SML J = 16 *MPE$_t$*	ACQ_BIG J = 76 *MPE$_t$*	DISP_SML J = 7 *MPE$_t$*	DISP_BIG J = 12 *MPE$_t$*
-14	0.0043 (2.1583 *)	-0.0030 (-1.5021)	-0.0209 (-1.7554 *)	-0.0015 (-0.0242)
-13	-0.0070 (-0.3529)	-0.0003 (-0.0487)	-0.0088 (-0.6293)	-0.0106 (-0.7657)
-12	0.0055 (0.6614)	0.0014 (0.1691)	-0.0114 (-0.7326)	0.0176 (3.1160 *)
-11	0.0217 (4.7051 *)	-0.0007 (0.3705)	-0.0059 (-0.2129)	0.0065 (0.5144)
-10	0.0159 (2.5504 *)	0.0014 (0.7645)	-0.0072 (-0.4241)	-0.0027 (-0.5891)
-9	-0.0027 (-0.6433)	-0.0031 (-1.1894)	0.0017 (0.0920)	-0.0010 (-0.1429)
-8	-0.0003 (-0.0612)	-0.0017 (-0.4631)	0.0016 (0.4794)	-0.0016 (-0.1464)
-7	0.0033 (-0.6859)	-0.0004 (-0.0605)	0.0027 (0.1810)	0.0007 (-0.6121)
-6	0.0014 (0.4941)	-0.0001 (0.7256)	0.0089 (0.8300)	-0.0039 (-0.6214)
-5	-0.0035 (-1.9353)	-0.0015 (0.3694)	-0.0160 (-0.8012)	0.0066 (0.2074)
-4	0.0196 (3.3327 *)	-0.0022 (0.0294)	-0.0141 (-1.3693)	-0.0056 (-1.0614)
-3	0.0045 (1.2767)	-0.0013 (0.1696)	0.0154 (0.9760)	0.0075 (2.0180 *)
-2	0.0011 (1.2402)	0.0013 (1.3869)	0.0069 (0.2455)	0.0144 (2.6839 *)
-1	-0.0032 (-0.3666)	0.0043 (1.6893)	0.0115 (1.0569)	-0.0097 (-1.5426)
0	-0.0010 (-1.0727)	0.0010 (0.3637)	0.0026 (0.2104)	0.0030 (0.7144)
+1	-0.0057 (-2.2886*)	-0.0004 (0.9850)	0.0031 (0.1756)	0.0104 (1.9909 *)
+2	-0.0039 (-1.0668)	-0.0012 (-0.0291)	-0.0019 (-0.1522)	0.0029 (0.2683)
+3	0.0008 (0.6600)	0.0013 (1.1735)	-0.0027 (-0.0835)	-0.0002 (0.1426)
+4	-0.0141 (-3.5103 *)	-0.0021 (-1.0076)	-0.0037 (-0.2911)	-0.0089 (-0.4146)
+5	-0.0002 (0.1329)	0.0020 (2.0740)	-0.0031 (-0.1629)	0.0108 (1.5208)
+6	-0.0014 (0.9786)	0.0034 (2.6375 *)	0.0114 (2.0023 *)	0.0002 (-0.4619)
+7	-0.0049 (-1.5297)	-0.0023 (-0.4251)	0.0008 (0.1210)	0.0013 (0.4300)
+8	0.0011 (0.1756)	-0.0024 (-0.7654)	-0.0232 (-2.1722 *)	-0.0048 (-0.6521)
+9	-0.0009 (0.8241)	-0.0041 (-1.0347)	-0.0007 (-0.1122)	0.0018 (-0.5919)
+10	0.0052 (0.7858)	0.0007 (0.6005)	-0.0062 (-0.4430)	0.0005 (0.1601)
+11	-0.0007 (0.2132)	0.0017 (0.7848)	0.0003 (0.4246)	-0.0086 (-1.3309)
+12	0.0058 (1.2751)	0.0025 (1.3490)	-0.0173 (-2.1774 *)	0.0020 (0.4149)
+13	-0.0048 (-1.0009)	0.0010 (-0.2215)	0.0024 (-0.0980)	0.0122 (1.7405)
+14	0.0045 (2.1532 *)	-0.0003 (0.3891)	-0.0079 (-0.3506)	-0.0053 (-0.0822)

Source: Author's calculation

Note: Test statistics are in parenthesis.

J is the size of each sub-sample.

** : Statistically significant at 0.05 level, two-tailed.*

Exhibit 9: Cumulative Returns for Acquisitions (ACQ) and Disposals (DISP_) for Small (SML) and Big (BIG) Companies.

Interval	ACQ_SML J = 16 CPE_j	ACQ_BIG J = 76 CPE_j	DISP_SML J = 7 CPE_j	DISP_BIG J = 12 CPE_j
-14 +14	0.0408 (1.6904)	-0.0045 (1.7240)	-0.0814 (-0.9606)	0.0340 (1.2781)
-14 -2	0.0640 (3.5336 *)	-0.0099 (0.2000)	-0.0471 (-0.8655)	0.0264 (1.2693)
-1 0	-0.0042 (-2.8787 *)	0.0053 (1.4517)	0.0141 (0.8961)	-0.0067 (-0.5857)
+1 +14	-0.0191 (-0.5874)	0.0001 (1.7399)	-0.0484 (-0.8872)	0.0143 (0.8377)

Source: Author's calculation

Note: Test statistics are in parenthesis. J is the size of each sub-sample.

** : Statistically significant at 0.05 level, two-tailed.*