

The Impact of Corporate Real Estate Unit Formation on the Parent Firm's Value

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Abstract. This research investigates the valuation impact of the formation of a Corporate Real Estate Unit (CREU) on the stock price of the parent organization. Using standard event study methodology, the empirical tests show that the formation of a CREU, in general, is associated with positive gains to shareholders. The largest gains are associated with the publicly traded subsidiaries. The next largest gains are associated with the Master Limited Partnerships and the wholly owned subsidiaries.

Background

Many corporations have created a separate real estate unit by restructuring a current unit or by creating a separate real estate unit outside the corporation. Reasons given for this decision are: 1) cost control; 2) income generation; 3) suspected undervaluation of real estate assets, resulting in mispricing of the common stock; 4) special characteristics of real estate which suggest that restructuring may result in improved efficiency of future corporate real estate asset management; 5) risk reduction; and 6) tax benefits associated with specific types of real estate operations [18], [11], [22].

These reasons all relate to firm value and the impact of Real Estate Unit formation on the risk and/or cash flow of the parent firm. To cause an increase in firm value, real estate unit formation should decrease the risk or increase the cash flows of the parent firm. Given an efficient market, such a cash flow increase or risk decrease should result in higher market value for the parent corporation.

Purpose of the Study

The purpose of this research is to determine empirically the impact of the formation or restructuring of a Corporate Real Estate Unit (CREU) on shareholder value. Following from this primary purpose is the goal of comparing the effects of different types of CREUs formed on shareholder wealth. By looking at the market reaction to the formation or restructuring of CREUs, the results should suggest answers to the following research questions:

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- Does the formation or restructuring of a CREU (in general) increase the equity value (stock price) of the parent firm?
- Does the type of CREU formed make a difference?
- And if so, what type of CREU results in the maximum increase to shareholder value at the time of formation?
- Is there a material difference in the impact on shareholder value between corporations forming CREUs for investment in real estate vs. the formation of CREUs to manage or control the real estate holdings of the parent firm?
- And, is there a substantial difference in the abnormal returns of the company forming a CREU that is not in the real estate business vs. the corporation forming a CREU that is in the real estate business?

To the extent that CREU formation delineates an unexpected effect on corporate earnings, then changes in equity values around the time of the formation provide insight into the market's assessment of the present value of the benefits of CREU formation. This study does not aim to identify the specific reasons for the stockholder wealth impact. The focus of the research is on the valuation impact of the organizational form a corporation utilizes to manage its real estate.

Organization of the Paper

Following this introductory section, the relevant literature is reviewed. Section three describes the sample and data. In section four, the research method is delineated and the results are presented in section five. Conclusions and implications are discussed in the sixth section.

Literature Review

The impact of corporate mergers, takeovers, corporate capital expenditures, divestitures, voluntary sell-offs, captive insurer formation, equity carve-outs, and voluntary spin-offs on stock prices have all been analyzed since the pathbreaking papers by Ball and Brown [2] and Fama, Fisher, Jensen and Roll [8]. Only two, however, have addressed the problem of this study: the impact of restructuring real estate management on share prices.

Hite, Owers and Rogers (HOR) [11] used the standard event methodology to assess the impact of restructuring via the spin-off of real estate operations by non-real estate firms (20 events) and the spin-off of real estate operations by real estate firms (6 events). Spin-offs are defined to be a transaction where the "parent" corporation forms a subsidiary to which real estate assets are transferred. The shares of the new subsidiary are distributed, pro rata, to the stockholders of the parent corporation. This distribution of shares is normally tax-free. Eventually the shares of the parent and the shares of the newly formed subsidiary are traded separately with each company responsible for its own management. Included in their sample were 7 events in which real estate firms were divesting non-real estate assets. Their sample consisted of 33 firms and examined one type of restructuring. The results indicated significant two-day abnormal returns which were comparatively larger than abnormal returns reported in broader spin-off studies. While limited in scope, the results of the study indicate a positive reaction to the announcement of restructuring via the spin-off of real estate operations.

Owers and Rogers (OR) [17] studied the restructuring of real estate assets via sell-offs. A sell-off results when one firm transfers ownership and control of the assets being divested to the acquiring firm. For the 55 sell-off transactions, positive abnormal returns over the interval -1 to 0 were found to be significant at the 5% level. This study also compared the results for real estate spin-offs and sell-offs. With spin-offs, the cumulative abnormal return's (CARs) over the two-day event interval were found to be 5.7% (t -test statistic of 10.27). The sell-off sample resulted in CARs of 0.7% (significant at the 5% level) over the two-day event interval. It was suggested that spin-offs may result in more disclosure and have tax advantages over sell-offs, thus accounting for the higher valuation revisions. The sell-off results for companies divesting real estate assets were consistent with general studies of sell-off announcements.

Thus the hypothesis that real estate assets are undervalued in comparison to other assets lacks support based on this study. If, in fact, real estate assets were undervalued in comparison with other assets, the expectation would be that with the sell-off of real estate one would find higher abnormal returns than in the case of general studies of sell-offs. As stated, this does not occur.

The studies by (HOR) and (OR) provide new information regarding the implications of spin-offs and sell-offs of real estate by a corporation. This is significant, and tends to support the hypothesis that management attention to corporate real estate via divestiture results in a positive wealth impact for shareholders.

What remains to be examined is the hypothesis that the restructuring of corporate real estate via the formation of a CREU, in general, results in wealth increases for shareholders. And to investigate the wealth impact associated with the organizational form used to accomplish this restructuring. This study should add to the existing literature by extending the time period of the previous studies and by investigating the impact of the organizational form used to hold and manage a corporation's real estate.

It differs from the previous studies in that they examined specific types of divestiture, spin-offs and sell-offs, without regard to the organizational structure resulting from that divestiture. This study investigates the wealth impact associated with restructuring without regard to the specific type of divestiture, but with regard to the overall effect of restructuring a corporation's real estate holdings and the wealth effects associated with the specific type of organizational form used to hold or manage the real estate. HOR and OR studies are attempts to determine the impact of the specific form of divestiture, i.e., spin-offs and sell-offs. This study is an attempt to assess the impact of the organizational form of holding real estate on stock prices.

Data and Sample

Data

The data for this study were the daily returns for each firm, the daily equally weighted market returns and the event date data. The returns data for each event in the sample were obtained from the Daily Returns File tape constructed by the Center for Research in Security Prices (CRSP) at the University of Chicago. The CRSP Daily Returns File contains daily returns for each common stock listed on the New York Stock Exchange (NYSE) and on the American Stock Exchange (AMEX), and a daily equally weighted market return series.¹

The CREU event information was obtained from several sources. The primary sources were the *Wall Street Journal (WSJ)* and its *Index (WSJI)*, *Moody's Manuals*, S & P's Corporation Record and a survey of the members of the National Association of Corporate Real Estate Executives (NACORE). Other sources employed were *The Stanger Register*, a survey of IDRC members and various books on REITs.

The dates of the announcement, of the formation and the date of initial public offering, when applicable, were sought. The date on which the first reference to an event appeared in the written media, usually the *WSJ*, is referred to as the announcement date, even though the normal ambiguity regarding the date of announcement is present. The ambiguity resides in whether the announcement was made on the date of publication, day 0, or after the deadline' for the previous day, day -1. In light of this ambiguity, the abnormal returns associated with the two-day event window (-1,0) are of special interest.²

Sample

The sample of CREUs formed was constrained by:

- The availability of daily return data for the period July 02, 1963 - December 31, 1986;
- a definitive announcement or formation date;
- a definitive association between the "parent" firm and the CREU formed;
- an absence of any confounding events that might significantly impact the share price;
- and a listing of the parent firm on the NYSE or the AMEX.

Given that there is not a public listing of firms forming Corporate Real Estate Units, the sample of firms forming CREUs was obtained from several sources.³ The resulting sample contains 20 Centralized Real Estate Departments (CRED), 14 Wholly Owned Subsidiaries (WOS), 8 Publicly Traded Subsidiaries (PTS), 10 Master Limited Partnerships (MLP), and 19 Real Estate Investment Trusts (REIT). Thus the complete sample consists of 71 events where a CREU was formed by a corporation for one of two purposes, to invest in Real Estate (18 firms) or to form a unit to manage aspects of its real estate (53 firms). In the investment subsample, a firm would form a CREU as a means of speculating in real estate, usually either through development, or by purchasing property, or property and mortgages. In the management subsample, the firms were forming CREUs to manage or own real estate currently held by the firm. In this case the CREU could be responsible for purchasing, developing, managing, and divesting real estate for the corporation.

The sample is also separated according to the business of the parent firm. Eight firms in the real estate business and 63 firms in businesses other than real estate formed CREUs. This division was investigated due to the results obtained by HOR.

Research Method

The findings of Hite, Owers & Rogers and of Owers & Rogers indicate that the impact for the stockholders of a firm divesting real estate via the formation of a real estate unit or of a

firm forming a real estate unit for management or for investment presumably will be positive. The rationale is based on the empirical results obtained in the studies delineated in section two and on the assumption that if management undertakes such a restructuring, they would do so only if they expect it to increase the wealth of stockholders. There have been claims that active management of real estate, which one would suppose to be one of the reasons for formation of a real estate unit, would have a positive impact for stockholders of the parent firm. This has much support in the professional literature, but has very limited empirical support.

The null hypothesis being tested is that there is no impact, that the average abnormal return is equal to zero. The alternative hypothesis in each case is that there are positive average abnormal returns.

Empirical Methodology

The model employed is the standard event study methodology first introduced by Ball and Brown [2] and by Fama, et al. [8]. The technical details are available from the authors. The reaction of a firm's stock price to various firm-specific events has been the subject of a number of studies. A central issue in such 'event' studies has been the assessment of the degree of security price adjustment that is abnormal around the time of the event. That is, the extent to which security prices are different from the expected price, given a model of equilibrium prices. If the event is unanticipated, then the magnitude of abnormal performance at the time of the event is a measure of the effect that type of event has on the wealth of the firm's stockholders. Abnormal returns in this case are consistent with market efficiency, since only an investor who could predict the event with certainty could have attained the abnormal returns [3], [4], [14], [20].

The first step is to select an "event window" centered around the date of the formation or the date of public announcement of the formation of the CREU. Day 0 is defined as the day the announcement was first made or the day of the actual formation of the CREU. The event window includes the time period from 30 days before the announcement (day -30) through 30 days after the formation or announcement.

Abnormal returns are computed for the sample for a period of 61 trading days (30 before and 30 after) about each CREU's formation or announcement date. The calculation of abnormal returns suggests that a model can be specified that yields the normal return. Normal returns in this study are determined by the market model where the parameters of the model are estimated over the interval -191 to -31, a period of 160 days.

The procedure is summarized as follows. Time zero is defined to be the date of a CREU's formation or announcement. The parameters of the market model are measured for each firm in the sample by regressing the security returns of company j on the return for the market as proxied by a value-weighted index. The return for the market is the equally weighted index of the CRSP tapes. This regression uses stock returns from $t = -191$ to $t = -31$, a period of 160 trading days. The parameter estimates obtained from the regression are applied to the actual market return for days $t = -30$ to $t = 30$, and the expected or "normal" returns for security j , over the event window, are predicted. These expected returns are compared to the actual returns during the event window. The difference between actual daily returns for security j and the expected daily returns for security j are identified as abnormal returns (AR_{jt}). The average abnormal return (AAR_t) is calculated by summing the AR_{jt} across all firms at each relative event time and dividing by the number of firms.

Interpretation of AARs

If the average abnormal return is significantly different from zero, the market has reacted to the *announcement* of the event. Otherwise, the AAR, are random, and the implication is that the event had no effect on the firm's value.

The average abnormal returns (on day 0 or day -1) are of particular interest. They provide an estimate of the impact of the *announcement* relating to CREU formation. In the absence of abnormal performance, the average abnormal return should be zero. Thus, if the AARs are positive and significantly different than zero at the 5% level on day 0 or day -1, then the market has reacted positively to the announcement or formation. And the AAR on that day is a measure of the gain, i.e., increase in shareholder wealth, associated with the announcement or formation. If the AARs are not significantly different than zero, then there is no market reaction to the announcement or formation and hence no gain to shareholders.

Interpretation of CARs

The cumulative abnormal return (CAR) technique was first introduced by FFJR [8] and has been used to investigate abnormal performance when there is incomplete prior information about when the event occurs. It is also used when the announcement or formation date is defined, and there is an interest in testing for information leaks prior to an announcement [8], [3], [20]. That is, when there is uncertainty about the *information* release date as opposed to the announcement date, the CAR is the appropriate means to test for market reaction [14].

Brown and Warner [3] state that "the assumption that the time at which abnormal security price performance occurs is known with complete certainty is problematic. It typically is only known when the WSJ announced that the 'event' had taken place, and thus the calendar date of the event cannot be pinpointed exactly and the date itself is a random variable; in that case, abnormal returns for a number of periods before the 'announcement date' will typically be scrutinized for evidence of 'abnormal' performance".⁴

Brown and Warner also state that the CAR "technique focuses on the average model residuals of the sample securities for a number of periods around the event. Examining the CAR as of any event date is equivalent to examining the significance of the mean average residual over the cumulation period. Examining the CAR of a set of sample securities as of any given event-related day, t , is a way of looking at whether or not the values of the average residuals, starting from the day of accumulation and up to that point, are systematically different than 0".⁵

Thus, cumulative abnormal returns are computed over intervals to determine the reaction of the market to an event. The CAR, should show positive drift for favorable news and negative drift for unfavorable news. If the news does not affect the firm's economic value, the CAR, should exhibit random movement [3], [8], [11].

Consistent with the above analysis, CARs are presented and analyzed over intervals surrounding the event announcement. Thus, if CARs are significantly different than zero over any interval, including day 0, then the interpretation is that the market has reacted to the event and the measure of the gain over the interval is the CAR over that interval. If no intervals are significant, the assessment is that the market did not react to the event over that interval.

Exhibit 1

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1. All Firms ($N=71$),
Subsamples Relating to Organizational Form
 2. Centralized Real Estate Departments (CREDEs, $N=20$),
 3. Master Limited Partnerships (MLPs, $N=10$),
 4. Publicly Traded Subsidiaries (PTSS, $N=8$),
 5. Real Estate Investment Trusts (REITs, $N=19$),
 6. Wholly Owned Subsidiaries (WOSSs, $N=14$),
Subsamples Across Organizational Form
 7. Formation of CREUs for Investment ($N=18$),
 8. Formation of CREUs for Management ($N=53$),
 9. Real Estate Firms ($N=8$),
 10. Non-Real Estate Firms ($N=63$),
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Overall Impact on Shareholder Value

In light of the above analysis, any attempt to make a decision about the *overall impact* on shareholders wealth must consider both the announcement gains and any gains over intervals. Thus, if the AAR for day 0 or day -1 is significant or if one of the interval CARs is significant, then the assessment is that the market has reacted to the event. If neither the AAR on day 0, the AAR on day -1 nor any of the CAR intervals are significant, then the market has not reacted to the event. Hence, the *overall gain* is the gain associated with the CAR if significant, otherwise the overall gain is the AAR on day 0 or day -1 , whichever is significant.

Results
Summary and Interpretation of Findings

This section compares and contrasts the results obtained across the overall sample and the subsamples and interprets the findings. Exhibit 1 provides a summary of the subsamples and Exhibit 2 provides a summary of the results.

The overall profile of findings indicate that there is a significant wealth impact associated with the restructuring of corporate real estate into different organizational forms. For all firms forming a CREU, there was a CAR of $+2.14\%$ over the interval $(-10,0)$, significant at the 5% level. The pattern of the wealth impact was not the same for different organizational forms. As a result of the small subsample sizes the results are at best preliminary and are to be interpreted with caution.

Summary of Findings Pertaining to Organizational Form

In an attempt to identify which organizational form is most appropriate for holding and managing corporate real estate, one must look at the significance of the AARs and CARs as well as the size of the gain. The reaction to the announcement of the formation of a CREU meet with a significant response on either day 0 or day -1 for three of the organizational forms. The MLP has the largest AAR on day 0, a gain of $+1.57\%$, significant at the 5% level.

Exhibit 2
Summary Of Abnormal Returns And T-Statistics

TYPE CREU	(N = #)	INTERVALS OVER THE PRE-EVENT PERIOD										DAY -1	DAY 0	POST-EVENT (1,10)
		(-20,0)	(-10,0)	(-5,0)	(-3,0)	(-1,0)								
ALL FIRMS	71	2.18%	2.14%**	1.15%	1.08%	0.44%						0.48%**	-0.04%	0.55%
T-test	=	1.095	2.083	1.188	1.505	0.597						1.877	-0.141	0.698
CRED	20	-1.46%*	-0.09%	-1.16%	-0.96%*	-0.75%						0.48%	-1.24%**	0.33%
		-1.354	-0.227	-1.095	-1.515	-1.458						1.114	-2.852	0.373
MLP	10	5.47%**	2.59%	3.45%**	3.69%**	1.58%						0.01%	1.57%**	-1.61%
		1.840	1.181	1.903	2.997	1.693						0.011	2.368	-0.335
PTS	8	1.49%	5.72%*	2.71%	4.06%*	1.77%						0.52%	1.25%	5.62%**
		0.316	1.791	0.591	1.496	1.013						0.561	1.359	2.085
REIT	19	3.05%	1.17%	0.02%	0.25%	1.13%						1.00%**	0.13%	0.57%
		1.286	0.593	-0.215	0.176	1.061						2.297	0.288	0.561
WOS	14	4.26%	4.28%**	3.44%**	1.57%	-0.35%						0.07%	-0.42%	-0.53%
		0.793	1.918	2.179	1.330	-0.344						0.114	-0.693	-0.841
INVESTMENT	18	5.43%	2.48%	2.27%	0.85%	1.18%						1.08%**	0.11%	0.24%
		1.242	0.768	0.970	0.281	0.916						1.832	0.180	-0.267
MANAGEMENT	53	1.08%	2.03%**	0.77%	1.16%*	0.19%						0.27%	-0.08%	0.65%
		0.543	1.963	0.809	1.578	0.158						0.984	-0.303	0.953
REAL ESTATE	8	12.31%**	8.61%**	3.45%	1.94%	-0.59%						-0.20%	-0.38%	6.10%**
		2.277	2.536	0.895	0.646	-0.478						-0.196	-0.365	2.163
NON-RE	63	0.90%	1.32%*	0.86%	0.97%*	0.57%						0.56%**	0.01%	-0.16%
		0.351	1.307	0.942	1.367	0.805						2.205	0.031	-0.039

* Statistically significant at the 10% level (one-tailed tests).

**Statistically significant at the 5% level.

The next largest response occurred on day -1 and is associated with the announcement of the formation of a REIT. The AAR is a $+1.00\%$, significant at the 5% level. The only other significant AAR is on day 0 for the CREds. The announcement of the formation of a CREd resulted in a loss of 1.24% on day 0. Neither the PTS nor the WOS had a significant AAR on day 0 or -1 . This lack of significance may be caused by leakage of information prior to the event and as a result, poor identification of the actual date the information became available to the market as opposed to the announcement date. This line of reasoning is consistent with the significant CARs for both the PTS and the WOS.

Assuming market efficiency and the logical consequence that the market would react immediately and incorporate any new information into the stock price, the appropriate time frame to be used in determining which organizational form maximizes shareholder value is the pre-announcement period. Comparing the CARs over the pre-event intervals should provide additional insight. The largest gain, significant at the 5% level, occurs over the interval $(-20,0)$ for the MLP. The CAR is 5.47% and the t -value is 1.840. The second largest gain is a CAR of 4.28%, $t=1.918$, over the interval $(-10,0)$ for the WOS sample. The remaining CREU subsamples, CREd, PTS and REIT have no significant CARs, at the 5% level, over the pre-event period. But, the PTSs do have a gain of 5.72% over the interval $(-10,0)$ which is significant at the 10% level. With regard to the *post-announcement* intervals, the CARs for the CREd, the MLP, the REIT and the WOS were not significant at the 5% level. In these cases the post-event abnormal returns can be viewed as random and not significantly different from 0.

For the PTSs, significant gains to shareholders occur over the interval $(+1, +10)$. This substantial gain of 5.62%, significant at the 5% level, after the event appears to be inconsistent with the efficient market hypothesis. It may be that information pertaining to the announcement was followed by additional information clarifying the details of the formation of the new subsidiary, resulting in the gains from day $+1$ to day $+10$. This is consistent with the finding that approximately 33 days, on average, after the announcement the new subsidiary started publicly trading.

While far from conclusive, the results indicate that formation of a PTS with a $+5.72\%$ gain over the interval $(-10,0)$ and a $+5.62\%$ gain over the interval $(1,10)$ results in the largest significant overall gain to shareholders. The next largest gain, $+5.47\%$, is associated with the MLP. The WOS is third with a significant gain of $+4.28\%$. And, the formation of a REIT is fourth, with a gain of 1.00% . The formation of a CREd is not associated with any gains, but instead shows a significant overall loss of 1.46% .⁶

Summary of Findings for Subsamples Across Organizational Forms

Two major subdivisions are investigated. In the first subdivision, the sample is partitioned into two groups: 1. firms that indicated that a major reason for forming a CREU was to invest in real estate ($n=18$), and 2. firms that indicated they formed a CREU primarily for management of their real estate ($n=53$).

The results indicate a significant AAR of $+1.08\%$ on day -1 and hence a positive gain to shareholders associated with the formation of CREUs for investment. No CARs are statistically significant over the event window. With regard to the formation of a CREU for management, no significant AARs occur on day 0 or day -1 . But, there is a significant CAR of $+2.03\%$ over the interval $(-10,0)$. Thus, shareholders do benefit from CREU formation for investment and from CREU formation for management of a corporation's real estate, with the results

indicating larger gains for shareholders of firms who form CREUs for management of company real estate.

The second subdivision resulted in 8 firms, whose primary line of business is real estate, forming CREUs, and 63 companies forming CREUs whose primary line of business is not real estate. This division was prompted by the results obtained by HOR for 6 real estate companies spinning off real estate operations. The subsample of CREUs formed by real estate firms is composed of 4 WOSs, 2 PTSs, and 2 REITs. Two are spin-offs, 3 were formed for investment and 3 are management related.

For these 8 real estate firms forming CREUs, the accumulated gain over the interval $(-20,0)$ of +12.31%, significant at the 5% level, is the largest gain for any subsample. One interesting fact is that the results are in direct contrast to the results obtained by Hite, Owers and Rogers [16]. In their sample of 6 real estate firms spinning off real estate operations, the parent firms gained only +0.3% at the announcement. The reasons for this difference are unclear.

For the remaining 63 firms whose primary line of business is not real estate, the gain to shareholders from forming a CREU is meager. There is a significant, at the 10% level, positive gain of 1.32% over the interval $(-10,0)$. This includes the positive gain of 0.56% found on day -1.

Summary and Conclusions

Prior to this analysis there had been only scant research attention to the issue of CREU formation. And, the perspective of previous work was limited to a relatively descriptive role. The purpose of this analysis was to investigate the association between formation of a CREU and stockholder wealth.

The results indicate that the formation of a CREU results in an increase in shareholder wealth for the parent firm's stockholders. The largest gain is made by firms whose primary line of business is real estate. The organizational form associated with the largest shareholder gain is the PTS, with gains occurring before and after the announcement of the event. The formation of WOSs, MLPs and REITs also resulted in wealth increase. But, the formation of a CREU resulted in a decrease in equity value for the parent firm. These findings suggest that the market makes a distinction in terms of type of CREU formed. The implication is that the type of CREU with the largest gains is the one most likely to improve the market value of the parent firm. It was also found that there is a positive gain associated with the formation of CREUs for investment and for management.

Thus, formation of a CREU is seen to be a transaction with potentially significant valuation implications and the analysis has provided specific insight into the nature of the overall impact, as well as the valuation implications of the various organizational forms for holding and managing corporate real estate.

These findings are consistent with the claim that real estate assets have been underutilized, and that the active management of real estate is the responsibility of the firm if it intends to maximize shareholder wealth. But, the analysis of announcement abnormal returns associated with the formation of CREUs leaves unanswered the question of what causes the abnormal return pattern for each sample. The results do indicate a need for further research on formation of CREUs and the wealth impact associated with organizational forms in general.

Notes

¹"The CRSP Daily Returns File includes completely adjusted daily returns on investment for each common stock listed on the NYSE and AMEX. The data start on July 2, 1962. A header section identifies the security, giving the company name as of the first date it was included in the file and as of the latest date it was in the file. In addition, a permanent identification number, CUSIP number, starting and ending dates of the record, exchange listing codes, and industry codes are included. A subscriber to the CRSP Daily Returns File also receives an index file which includes for each trading day: the calendar date, the level of the S&P 500 Composite Index, a value weighted return series including all NYSE and AMEX securities, a similar equally weighted return series...." *CRSP General Information Brochure*, University of Chicago, 1986.

²"The press date is when a report on a transaction first appears in the *Wall Street Journal*. Thus the immediate event related impact on security prices can occur on day -1 or day 0, depending on the time of day when the press release was made. If before 4 pm on the day before date (i.e., day -1), the immediate price reaction will be reflected in changes in stock price on day -1. If the press release is after 4 pm on day -1, the market will be closed, and the immediate impact will be reflected in trading on the day after the release—i.e., day 0." Owers and Rogers, p. 33 [17].

³One attempt at identifying the aforementioned sample was to survey companies with at least one executive in the National Association of Corporate Real Estate Executives. The purpose of the survey was to obtain information in regard to the formation or restructuring of the firm's real estate unit. The following information was requested:

- the current form or type of CREU(s);
- the date of formation of the current CREU(s);
- the date of public announcement of the formation of the current CREU(s);
- reasons for the restructuring or formation of CREU(s).

Eight hundred and fifty-two surveys were mailed out with a response by 71 firms. Of those 71 responses only 34 were usable given the sample constraints. The two major constraints were the lack of an announcement or formation date and the parent firm not trading on the NYSE or the AMEX. The 34 usable events consisted of the formation of 20 Centralized Real Estate Departments (CRED) and 14 Wholly Owned Subsidiaries (WOS).

The Master Limited Partnership (MLP) subsample was obtained from *The Stanger Register* [21]. Of the 50 real estate MLPs listed on the Secondary Markets, only 10 meet the sample constraints. The failure to identify a "parent" firm and the parent firm not trading on the NYSE or the AMEX were the two predominant reasons for exclusion.

The Real Estate Investment Trust (REIT) subsample was identified from various sources, e.g., *Moody's Bank & Finance Manuals* [15], Haight & Ford [10], Campbell [5], and Lopez & Smith [13]. Of 103 REITS currently trading and 115 REITS listed in Campbell's *The Real Estate Trusts* (1971), some of which are currently trading, 19 meet the sample constraints. For this subsample, the most common reason for exclusion was that the "parent" firm did not trade on the NYSE or the AMEX. One other reason, not listed above, was that a significant number of the REITS formed were mortgage REITS and did not have any relationship to the management of a corporation's real estate.

The Publicly Traded Subsidiary (PTS) subsample was identified primarily through *Moody's Bank & Finance Manual* (1986). Of 156 real estate companies listed 8 were found that meet the sample constraints. The failure to obtain a larger subsample is mainly a result of the 156 real estate companies being "parent" firms themselves. The next most common reason was that the "parent" firm did not trade on the NYSE or the AMEX.

The timing of the 71 events was as follows: 36 events occurred during the years 1982-1986, 16 during the interval 1977-1981, 8 in 1972-1976, 9 during the interval 1968-1971, and 2 in 1963-1967.

The sample of parent firms grouped by SIC consisted of 30 companies in Finance, Insurance & Real Estate; 21 companies in Manufacturing; 9 corporations in Services; 4 in Construction; 2 in Transportation & Public Utilities; and 1 in Mining.

⁴This rationale provided by Brown and Warner, p. 224 [3] for looking at CARs over the pre-event window is consistent with Fama, Fisher, Jensen, and Roll [8].

⁵Brown and Warner, pages 227-28, [3].

*As indicated in footnote 3, the announcement date of firms forming CREs was obtained from the firm and thus may be suspect; most were not verifiable via the WSJI.

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