Journal of Real Estate Literature, 4:13–33 (1996)
© 1996 American Real Estate Society

Managing Corporate Real Estate: Evidence from the Capital Markets

MAURICIO RODRIGUEZ
Texas Christian University, M.J. Neeley School of Business, P.O. Box 32868, Fort Worth, Texas 76129

C.F. SIRMANS
University of Connecticut, School of Business Adminstration, Department of Finance, 368 Fairfield Road, Storrs, Connecticut 06269-2041

Abstract

Real estate accounts for 25 to 40 percent of the total assets of major U.S. corporations. Given the large investment, it is important to understand how decisions related to real estate assets affect firm value. This paper provides a review of the literature on the impact of real estate management decisions using evidence from the capital markets. The implications for corporate real estate decision makers are identified as are some of the unresolved issues.

Firms require the use of real estate assets, and the acquisition, disposition, and control of real property in a corporate environment have received increased attention in recent years. Corporations have invested approximately $1.7 trillion of the estimated $8.8 trillion total of the U.S. real estate stock as of 1990 (Miles et al., 1991). The approximate value of U.S. commercial real estate in 1990 was $2.7 trillion, and corporations control over 60 percent of this amount.[1] Zeckhauser and Silverman (1983) indicate that real estate accounts for 25 percent to 40 percent of the total assets of major U.S. corporations. Operating costs associated with maintaining corporate real estate are second only to payroll costs in most organizations (Veale, 1989).[2] Obviously, individual companies commit substantial resources to real estate assets.

Given the large investments, corporate real estate management is likely to continue to be of interest.[3] If maximization of the value of the firm is assumed to be the goal, it is important to understand how decisions related to real estate assets affect firm value. The purpose of this paper is to review the literature on the impact of real estate management decisions using evidence from the capital markets.[4] Specifically, this paper explores the following questions: What is the consensus of the impact of various decisions related to real estate assets on the value of the firm? What are the unresolved issues concerning corporate real estate management? What are the implications for corporate real estate decision makers?

The remainder of this paper proceeds as follows. The next section examines the degree to which corporate real estate is managed efficiently. The three sections thereafter survey recent literature that examines the effects of various real estate decisions on the value of the firm. Specifically, the second section discusses the evidence on how real estate acquisitions affect firm value. In the third section, the effects of real estate dispositions are reviewed. The fourth section reviews evidence regarding the valuation effects of real estate corporate restructuring. A conclusion and some unresolved issues regarding corporate real estate decisions are provided in the fifth section.

1. Is corporate real estate managed efficiently?

Many authors agree that regardless of whether corporate real estate accommodates productive activities or is investment property, it should be evaluated within the framework of

a company's strategic plan.[5] The manner in which real estate is held (owned through a subsidiary, leased through a department, and so on) and utilized should follow directly from overall corporate objectives. For example, a high-growth company with rapidly changing production demands may want to maintain flexibility in its operations and may benefit from short-term leasing.

Although significant resources are invested in corporate real estate, evidence suggests that corporate real estate is not managed very efficiently. A survey conducted in 1981 by Harvard Real Estate, Inc. documents the problem of U.S. corporations mismanaging their real estate assets (Veale, 1988). The survey reports that only 40 percent of U.S. firms evaluate the performance of their real estate on a regular basis and that only about 20 percent manage their real estate for a profit. Veale (1989) reviews a similar survey from 1987 that shows management of corporate real estate had undergone little change since the 1981 study. Approximately two-thirds of the firms surveyed do not provide for continuing management and control of their real estate assets by a separate management information system. Additionally, one of every four firms surveyed did not maintain an inventory of its corporate real estate. Veale notes that the lack of adequate information on the individual real estate assets makes appropriate decision making difficult.[6] Pittman and Parker (1989) also support the notion that access to information regarding corporate real estate is an essential factor in corporate real estate performance. Farragher (1984) reports that almost one-half of the firms responding to his survey do not assess the risk associated with their real estate assets. Although Gale and Case (1989) find that real estate units are attaining a more important role within their organizations, most corporations responding to the authors' survey made little effort to maximize the financial benefits available through better management of their corporate real estate.

In a survey of more than seven hundred executives, Arthur Anderson & Company (1993) reports that senior managers do not view corporate real estate "as making a significant contribution to competitive advantage." The senior managers are reported to believe that there is no need to link strategic real estate planning and business planning. Although information is key to management's understanding of real estate, the corporate real estate executives surveyed indicate that they do not produce regular reports on real estate performance. Nourse (1994) suggests that real property operations are often not linked to the overall corporate strategy. These results indicate that real estate is still not managed efficiently in the 1990s.

If real estate is not managed properly, what is the likely result? Ambrose (1990) sheds some light on this question in his examination regarding the role of real estate assets in the takeover market. If firms were managing their corporate real estate in a manner that maximizes shareholder value, the amount of real estate holdings should not be related to the likelihood of becoming a takeover target. Ambrose estimates a logit regression for a sample of firms from the years 1981 through 1986 in order to predict which firms become takeover targets.[7] Ambrose's results suggest that corporate real estate plays a significant part in determining the likelihood of a firm becoming a takeover target. The greater the real estate holdings, the greater the likelihood of a firm becoming a takeover target. This result is consistent with the notion that real estate assets are managed in a suboptimal manner.

1.1. Real estate decisions and agency costs

Along with the management of corporate real estate, decisions concerning these assets may have associated agency costs. Jensen and Meckling (1976) propose that separation of ownership and control gives managers the opportunity to spend corporate resources and free cash flow (Jensen, 1986) on excess perquisites and negative net present value projects at the expense of shareholders.[8] For example, if the market perceives the decision to move a firm to a certain location is motivated by managers' self-interests to be in a luxurious

office or a personally convenient location, then negative shareholder wealth effects should be expected. Alli, Ramirez, and Yung (1991) find that, on average, announcements of headquarters relocation experience a positive abnormal return.[9] However, the reaction varies across firms and these authors acknowledge that agency problems may exist. Chan, Gau, and Wang (1995) examine the relative level of cash flow of relocating firms and fail to detect a significant relationship between the market reaction to relocations and a company's relative level of cash flow.[10] Ghosh, Rodriguez, and Sirmans (1995) examine headquarters relocation announcements that appear to be motivated by managerial self-interest. A sample of firms whose moves appear to be motivated by managerial preferences experiences a negative market reaction to the relocation announcement. Relocations motivated by cost savings considerations, however, elicit a positive market reaction. The latter results agree with the findings reported by Alli, Ramirez, and Yung. The evidence indicates that shareholder wealth effects of headquarters relocations (and perhaps other decisions regarding real estate) depend on the market's perception of the underlying motive behind the decision. If managers' self interests can be aligned with the interest of stockholders, then excessive perquisite taking and agency costs will be minimized.

1.2. Real estate management and the value of the firm

If real estate can be managed more efficiently, then securitized real estate prices should be sensitive to improvements in management. There is evidence that market prices reflect top management changes by real estate investment trusts (REITs). McIntosh, Rogers, Sirmans, and Liang (1994) examine the relationship between a REIT's stock returns and top management changes. The authors provide evidence of an inverse relationship between the probability of a management change and a REIT's recent stock price performance. If management turnover occurs, the market reaction should be attributed not to who the new managers are, but to expectations regarding how effectively real estate assets will be managed.[11] Rodriguez and Sirmans (1994) study shareholder wealth effects of top real estate management changes.[12] Contradicting the notion that corporate real estate is managed inefficiently, they find that, on average, firms that announce the turnover of real estate managers experience a significantly negative market reaction. The negative market reaction is attributed to losses of firm-specific human capital. Consistent with previous evidence suggesting that corporate real estate can be managed more efficiently, subsample results show the market reaction varies across different types of real estate management turnover announcements. Overall, these results indicate that the management of corporate real estate is important. Significant shareholder wealth changes appear to depend on the anticipated effectiveness of real estate managers.

In order to maximize shareholder value, coporate real estate cannot be ignored by top management. Asset managers with the expertise and desire to evaluate and control corporate real estate within the overall corporate strategic plan should be favorably positioned to maximize the benefits from this substantial corporate asset. There is a need to further study the decision-making process of corporate real estate managers. It would also be beneficial to study how agency costs can be minimized. It is unclear if performance-based compensation reduces agency costs or encourages excessive risk taking.[13]

2. Empirical evidence on corporate real estate acquisitions

There are several ways a corporation can acquire real estate.[14] This section examines the empirical research related to buying or leasing real estate, mergers involving real estate companies, and real estate joint ventures. Table 1 summarizes the empirical findings regarding the acquisition of corporate real estate.

Table 1. Empirical evidence on corporate real estate acquisitions.

Author(s)	Journal (Year)	Abnormal Return (Interval)	Sample Period and Size	Summary
	Journal of Real Estate Research (1993)	.85% (0, 0)	1979–1991 67	Lessee firms experience significant positive abnormal returns.
Allen and Sirmans	*Journal of Financial Economics* (1987)	5.78% (−1, 0)	1977–1983 38	Increase in shareholder wealth of acquiring firms is detected.
McIntosh, Officer, and Born	*Journal of Real Estate Research* (1989)	3.07% (−1, −1)	1962–1986 27	Target firms experience an increase in shareholder wealth.
Glascock, Davidson, and Sirmans	*Journal of Real Estate Research* (1989)	Insignificant (0, 0)	1981–1986 70	No abnormal performance associated with the buyers of real estate assets.
Owers and Rogers	*Real Estate Issues* (1986)	1.2% (−1, 0)	1968–1981 16	On average, the subsample of buyers experienced positive abnormal returns.
Glascock, Davidson, and Sirmans	*AREUEA Journal* (1991)	.76% (0, 0)	1971–1986 30	For the total sample of buyers, there are no significant abnormal returns. For a subsample of single purchasers, significant returns are found.
Elayan and Young	*Journal of Real Estate Finance and Economics* (1994)	1.2% −1, 0)	1972–1987 70	Overall bidder firms experience excess returns of .6 percent. When the sample is broken down further, non-real estate bidder firms have insignificant excess returns while real estate firms experience positive abnormal returns.
McIntosh, Ott, and Liang	*Journal of Real Estate Finance and Economics* (1994)	Insignificant (0, 0)	1968–1990 54	A sample of REIT acquisitions experiences insignificant wealth gains, supporting the hypothesis that tax implications may be driving previous findings.

2.1. *Leasing*

Many authors have examined issues that focus on the lease versus buy decision (Nourse, 1990; Jaffe and Sirmans 1995). Manning (1991) reviews much of the work related to the lease versus buy decision and suggests that there is a trend toward corporate leases with equity residual interests. Ebert (1987) suggests that leasing is more costly than ownership for major companies due to large corporations' ability to borrow at low rates. However, Ebert concedes that leasing may be beneficial since it can offer time and size flexibility.

Theory suggests that leasing and debt financing should be considered to be substitutes. Several studies have investigated the effect of corporate debt offerings and found that firms generally experience no excess returns when announcing a new debt issue (Smith, 1986). Therefore, one may expect real estate leasing announcements to have similar results. On average, however, corporate decisions to lease have been well received by the capital markets.

Howe and Shilling (1988) examine the stock price reactions to announcements of new security offerings by real estate investment trusts. A sample of forty-three REITs that announced such offerings between January 1970 and December 1985 is examined. Given that REITs do not pay taxes at the firm level, theory suggests that the net tax gain of REIT borrowing is unambiguously negative.[15] Contrary to previous studies in the finance literature, a positive stock price reaction was found for firms that announced debt offerings, while the negative equity-issuance effect was preserved.[16] The findings point to signaling as an explanation for the positive significant debt-issuance effect. The market appears to regard REIT announcements of short-term debt as a positive signal. Cross-sectional analysis revealed no differential reaction by the type of REIT (mortgage versus equity), the time period examined (1970 to 1974 and 1975 to 1985), and the level of ROI. Maris and Elayan (1990) attribute REITs high use of leverage, although there exists a lack of tax incentives, to the leverage clientele effect. Redman and Manakyan (1993) report a significant relation between business risk and leverage for taxable real estate companies and suggest other variables exist that could explain REIT borrowing.

Recently, Allen, Rutherford, and Springer (1993) have examined sixty-seven corporate lease announcements. Consistent with Howe and Shilling, statistically significant positive abnormal returns accruing to the lessee firm are found. Their sample consists of mostly office space leases during the years 1979 through 1991. These authors conclude that the observed positive abnormal returns may be attributed to increases in expected net operating cash flows or a signal of profitable growth opportunities. It is interesting to note that these findings are also consistent with Nourse (1994), who concludes that "firms that lease rather than own tend to link their property decisions more closely to strategic needs." The results may be partially attributed to a signal regarding how closely property decisions are tied to strategic needs.

The capital markets, on average, have reacted positively to real estate lease announcements and also to debt offerings by real estate firms. Leasing may or may not be the optimal strategy depending on the specific circumstances. Future research needs to examine under what conditions, beyond tax considerations, it is best to lease corporate real estate.

2.2. *Mergers and purchases*

Instead of leasing space, corporate real estate may be acquired through merger activities. A value-maximizing firm should voluntarily acquire another firm only if the acquisition increases the value of the acquiring firm. Firm value may be increased by the formation of synergies, tax benefits, or monopoly power.

Empirical evidence concerning mergers in the finance literature has generally not found increases in the value of the acquiring firm. For example, Dodd (1980) finds positive abnormal returns associated with merger announcements for target firms but no significant abnormal returns for acquiring firms. Contradicting the findings found in the general finance literature, Allen and Sirmans (1987) find an increase in the shareholder wealth of the acquiring firms. Allen and Sirmans investigate the effects of REIT mergers on the wealth of the acquiring trust's shareholders for the period 1977 to 1983. Using a sample of thirty-eight successful mergers, they find an increase in the shareholder wealth of the acquiring firms. Two motivations for REIT acquisitions are offered: the utilization of tax losses and improved asset management. A significant relationship was found between the wealth gain and whether the parties in the acquisition were similar types of trusts. No association was found between shareholder returns and utilization of tax losses. The main source of the value gain is therefore attributed to improved management of the acquired trust's assets.

McIntosh, Officer, and Born (1989) extended the research by Allen and Sirmans by examining the effect of merger announcements on target firms. Their sample consists of twenty-seven merger or acquisition announcements targeting REITs. Target firms are further classified on the basis of whether or not the merger was successfully completed. Success is defined to be completion of the merger within one year from the announcement. Similar to findings for non-real estate targets, the authors find these targets experienced a statistically significant increase in shareholder wealth. Both future successes and future failures experience significant abnormal returns, but future failures are followed by negative unexpected returns. Successes experienced a positive return around the event date and thereafter. These results did not reveal any statistical difference between non-REITs and REITs.

Elayan and Young (1994) find that real estate bidders earn positive and statistically significant abnormal returns while non-real estate and REIT bidders experience positive but insignificant abnormal returns.[17] These findings are attributed to the unique characteristics of real estate markets such as special tax considerations, market locality, and market segmentation. Recently, McIntosh, Ott, and Liang (1995) find that a sample restricted to acquisitions by REITs experiences insignificant returns. REITs operate under special tax provisions and are not subject to the same tax benefits that real estate transactions bring other firms. The lack of market response may be due to the lack of tax incentives and the markets' expectations regarding REITs real estate acquisition activities.

The findings discussed above indicate that real estate targets experience similar benefits to those experienced by non-real estate targets. More research is needed to explain the source of potential gains to companies that acquire firms with substantial real estate holdings.

The direct purchase of real estate is often the first alternative considered to meet corporate needs for space. Glascock, Davidson, and Sirmans (1989) find no abnormal performance for non-real estate firms that purchase real estate assets. This conflicts with prior findings presented by Owers and Rogers (1986) of positive abnormal performance for both buyers and sellers in sell-off transactions. Glascock, Davidson, and Sirmans (1991) help reconcile these conflicting results. This latter study considers how wealth gains are affected by market structure (see Bradley, Desai, and Kim, 1988). Glascock, Davidson, and Sirmans demonstrate that both buyers and sellers gain if the transactions occur within a bilateral monopoly framework. The gains to buyers are also associated with direct purchases of real property rather than a division or subsidiary. Furthermore, buyers gain only if few purchases are consummated. In cases where the acquiring firm pursues an acquisition strategy, the announcement of an acquisition is insignificant because this is already anticipated by the market due to the acknowledged acquisition strategy of the firm.[18]

Overall, the findings support the hypothesis that non-REIT firms acquiring real estate may benefit from tax considerations. The implication for corporate real estate decision makers is analysis that carefully considers all tax effects should be performed when evaluating real estate acquisitions. Furthermore, it appears that corporate real estate acquisitions may benefit from direct purchases of real property rather than acquiring real estate through the purchase of a division or subsidiary.

2.3. Joint ventures

Unlike mergers in which all resources are joined together, joint ventures involve only the combination of subsets of resources of two or more companies. Often, real estate development joint ventures are undertaken to acquire necessary skills and technical knowledge. Joint venture agreements may take many forms and specific venture participants negotiate these agreements.[19] Table 2 provides a summary of the empirical evidence regarding real estate joint ventures.

Table 2. Empirical evidence on real estate joint ventures.

Author(s)	Journal (Year)	Abnormal Return (Interval)	Sample Period and Size	Summary
Corgel and Rogers		Insignificant (−1, 0)	1979–1985 24	The announcement of real estate development joint ventures is not linked to significant positive or negative price reactions, but there are substantial variations across firms.
Ravichandran and Sa-Aadu	*AREUEA Journal* (1988)	.76% (−1, 0)	1972–1983 72	The evidence indicates that significant increases in the value of the participating firms occur within a two-day interval. The changes in value vary and appear to be due principally to the amount of information about the local real estate market possessed by the participating firms, and an information signal about the potential financial viability of the proposed project conveyed by the presence of anchor tenants.
Elayan	*Journal of Real Estate Research* (1993)	1.48% (0, 0)	1972–1989 57	Real estate firms experience positive significant excess returns upon the announcement of a joint venture. Real estate firms earn relatively higher abnormal returns when they joint venture with non-real estate firms.
He, Myer, and Webb	Working paper, Cleveland State University (1993)	1.11% (−1, 0)	1975–1990 53	Domestic real estate joint ventures significantly increase shareholder wealth. International joint ventures experience less positive, insignificant wealth effects.

Real estate and non-real estate companies are often faced with the decision of whether or not to pursue a real estate project on their own. To determine if a joint venture to develop real estate is associated with abnormal returns, Corgel and Rogers (1987) used a sample of twenty-four joint ventures occurring from 1979 through 1985. While the announcement of real estate development joint ventures did not result in a significant price reaction, there was substantial variation across firms. These differences were attributed to variations in the project's economic efficiency and differences in the contracting abilities of the venture partners.

Ravichandran and Sa-Aadu (1988) examine security price reactions around domestic U.S. real estate joint venture announcements over the years 1972 through 1983. Their evidence indicates significant increases in the values of the participating firms. The changes in values appear to be due principally to the amount of information about the local real estate market possessed by the participating firms and an information signal about the potential financial viability of the proposed project.[20]

Recently, Elayan (1993) compares shareholder wealth changes related to the announcement of real estate joint ventures for real estate and non-real estate companies. Real estate and non-real estate participants experience different positive wealth effects.[21] This study reports that real estate firms earn higher excess returns when they participate with non-real estate firms than when they participate with real estate firms. The opposite is reported for non-real estate firms. Consistent with Ravichandran and Sa-Aadu (1988), companies with real estate market knowledge appear to be best positioned to benefit from the gains to be made from joint ventures.

He, Myer, and Webb (1993) examine the wealth effect of domestic versus international real estate joint ventures on the United States participating firm's shareholders. Fifty-three domestic joint ventures experience significant positive wealth effects.[22] International joint ventures experience small positive but insignificant wealth effects over the same interval. The significant difference between the wealth effects of international and domestic joint ventures is attributed to increased political and economic risk present in international joint ventures. It may also be a function of the perceived knowledge level held by U.S. firms regarding international real estate markets.

The findings that real estate joint ventures, on average, elicit a positive market reaction are in agreement with the findings in the general finance literature (see McConnell and Nantell, 1985). Additionally, the research on real estate joint ventures suggests that benefits from resulting synergies are largely captured by the participant with specialized real estate knowledge.

A corporate real estate manager should make acquisition decisions in light of the evidence regarding capital markets reaction to different real estate acquisition possibilities. If more real property is needed, but little real estate knowledge is possessed by management, it may be optimal to lease or purchase real property instead of entering into a joint venture to develop the needed property. However, if management possesses extensive knowledge of the subject real estate market, a joint venture may be the best vehicle to obtain more real property.

3. Empirical evidence on real estate dispositions

What is the market's reaction to the disposition of real estate assets? Bender (1991) states that when a corporation finds itself in the position of having to dispose of a surplus or underutilized property, the typical response from management is, "we are not in the real estate business, so let's dump it." This type of response to corporate real estate management will not likely maximize shareholder value. Bender points out that knowing what you are selling (knowing the highest and best use of a property) is extremely important from a negotiating standpoint. Furthermore, Redman and Tanner (1989) report that a relatively higher level of analysis is undertaken in the acquisition of real estate than during the disposition of real estate.

Nourse and Kingery (1987a) study whether firms ignore profitable opportunities in disposing of surplus real estate. Half of those surveyed appear to ignore profitable opportunities in disposing of their surplus real estate. The other half responded in a manner consistent with efforts that should maximize shareholder value such as undertaking or contracting for a study of the highest and best use of the site. Nourse and Kingery (1987b, 1987c) provide guidance on how to dispose of surplus real estate.[23]

The research above suggests that the market may react negatively to real estate sales since there may be a lack of knowledge regarding the asset being sold. On the other hand, if real estate is poorly managed, it may be in the best interest of shareholders to dispose of real property and return money to shareholders or invest the resulting monies into positive NPV projects. Therefore, an interesting issue is whether selling real estate (potentially with a limited knowledge about the asset being sold) is outweighed by shifting resources to other investment opportunities. Table 3 summarizes the empirical evidence regarding the disposition of real estate assets.

3.1. Sell-offs

Owers and Rogers (1986) examine divestiture of real estate assets by sell-offs for the period of 1968 to 1981. On average, sell-offs were associated with statistically significant positive

Table 3. Empirical evidence on the disposition of real estate assets.

Author(s)	Journal (Year)	Abnormal Return (Interval)	Sample Period and Size	Summary
Owers and Rogers		.70% (−1, 0)	1968–1981 55	On average sell-offs are associated with statistically significant positive abnormal returns.
Glascock, Davidson, and Sirmans	*Journal of Real Estate Research* (1989)	3.41% (−5, −1)	1985–1986 9	Weak evidence of a positive market reaction is found. The results appear to be driven by one firm in the small sample.
Glascock, Davidson, and Sirmans	*AREUEA Journal* (1991)	1.23% (−1, −1)	1971–1986 51	The authors find statistically significant positive returns to sellers of realty assets, particularly on the announcement of the sale of real properties.
Myer, He, and Webb	*AREUEA Journal* (1992)	1.46% (−1, 0)	1964–1990 48	Sellers of real estate receive increases in wealth. The wealth gains to sellers were not statistically different for firms selling to U.S. buyers and firms selling to non-U.S. buyers.
McIntosh, Ott, and Liang	*Journal of Real Estate Finance and Economics* (1994)	2.89% (0, 0)	1968–1990 38	A sample restricted to REIT sales experiences significant wealth effects. These are attributed to potential changes in dividend policy, not to tax benefits.
Elayan and Maris	*AREUEA Journal* (1991)	8.10% (−1, 0)	1973–1987 11	The stock market response to the announcement of voluntary liquidation (Chapter 7) is positive and significant, while reorganizations are viewed negatively with mean abnormal returns = −7.45 percent on day 0 for (n = 5).

abnormal returns.[24] The value increases associated with real estate sell-offs are consistent with the hypothesis that firm values increase when real estate asset ownership is realigned and information is provided about book and market values. Glascock, Davidson, and Sirmans (1989) report weak evidence of positive wealth effects for divesting firms. Their sample includes only nine divestitures.

Glascock, Davidson, and Sirmans (1991) conduct further research regarding the acquisition and disposition of real estate assets. They test hypotheses that variations in market structure influence the distribution of gains between buyers and sellers from real estate sell-offs. They find significant positive returns to sellers, particularly on the announcement of the sale of real properties.[25]

Myer, He, and Webb (1992) provide further support that sellers of real estate experience increases in wealth. Interestingly, these authors find that the wealth gains to sellers were not statistically different for firms selling to U.S. buyers and firms selling to non-U.S. buyers. Recently, McIntosh, Ott, and Liang (1995) report significant positive wealth effects for REITs that announce the sale of real estate. Given the REIT sample, the positive market reaction is attributed to potential changes in dividend policy resulting from the sale instead of any tax benefits.

The evidence indicates that corporate real estate decision makers may increase firm value by selling real property. The wealth gains may be attributed to perceived increases in available cash flows for stockholders or other investment opportunities. Wealth gains may also be a function of the information provided by updating book values to market values. This provides an important implication for corporate real estate managers—that is, real estate market value information could be released to the market place resulting in increased firm value. Improved information systems for real estate holdings could facilitate managers' ability to provide information regarding the market value of real estate holdings.

3.2. Liquidations

Another way a company can divest its real estate is to liquidate its assets. If a firm is facing bankruptcy, liquidation may benefit stockholders more so than reorganizing under the same management. Elayan and Maris (1991) examine the announcement effects of voluntary liquidations and reorganizations by real estate corporations over the years 1973 through 1987. This time interval captures the impact of the 1978 Bankruptcy Reform Act, which made it more attractive to reorganize but harder to get creditor approval to do so. Liquidation (Chapter 7) is typically favored by secured creditors, while employees, shareholders, and unsecured creditors typically favor reorganization (Chapter 11). These authors' sample included thirty-six publicly traded real estate firms that announced either voluntary liquidation or reorganization during the sample period.[26] Both before and after the 1978 Bankrupty Act, there was a strong negative response to Chapter 11 announcements.[27] The stock market response to the announcement of voluntary liquidations before and after the 1978 Act took effect is significantly positive.[28] Therefore, investors apparently view the liquidation of real estate corporations to be in their best interest, while reorganizations are viewed negatively. Another difference between liquidation and reorganization is that stock market response to liquidation is quite rapid, occurring entirely within a two-day interval surrounding the announcement, while the response to reorganizations is significant over a twenty-one day interval.[29] Elayan and Maris's results show that real estate ccrporations experienced a less negative stock price response to announcements of reorganization and a less positive reaction to voluntary liquidations relative to non-real estate corporations.[30]

These results are consistent with the findings reported above for real estate dispositions. The capital markets appear to react in a positive manner when there is a shift in corporate resources from apparently inefficiently managed real estate assets to monies potentially available to shareholders.

3.3. Sale-leasebacks

A company may wish to acquire funds from selling its corporate real estate but continue utilizing the same real estate. This may be accomplished by selling corporate real estate and leasing back the space from the buyer.[31] Similar to leasing, sale-leasebacks are often interpreted as a form of external financing and a substitute for securing offerings. Therefore, considering studies showing insignificant negative effects of corporate debt offerings, one may expect sale-leaseback announcements to induce slightly negative or no market reaction. However, if tax shields can be created by participating in a sales-leaseback transaction, wealth increases may be obtained by shareholders. Table 4 summarizes the empirical evidence on sale-leaseback transactions of real estate assets.

The announcement effects of corporate sale-leasebacks of real estate assets are examined by Slovin, Sushka, and Polonchek (1990). These authors examine a sample of fifty-nine

Table 4. Empirical evidence on sale-leasebacks of real estate.

Author(s)	Journal (Year)	Abnormal Return (Interval)	Sample Period and Size	Summary
Slovin, Sushka, and Polonchek	*Journal of Finance* (1990)	.85% (−1, 0)	1975–1986 59	The impact of the announcement of a sale-leaseback of a building is positive. This positive market reaction appears to result from an overall reduction in the present value of expected taxes induced by the transactions.
Rutherford	*AREUEA Journal* (1990)	1.59% (−1, 0)	1980–1987 41	The evidence suggests that the sale-leaseback of corporate real estate has substantial benefits for seller-lessee common stockholders. Additionally, the SLBs produce an insignificant loss for the corporate purchaser-lessor.
Alvayay, Rutherford, and Smith	*Real Estate Economics* (1995)	Insignificant for intervals post 1986	1987–1989 20	The authors report positve abnormal returns for the seller-lessee prior to the Tax Reform Act of 1986. After the Tax Return Act of 1986, they find that no significant abnormal returns accrue to firms involved in a sale and leaseback of their corporate real estate.

sale-leaseback transactions by industrial firms. Lessors are found to be unaffected, while lessees have positive abnormal returns. The significant value enhancement of the lessee is attributed to the expected decline in the present value of future taxes. It appears that firms may enhance their value if the differential between the deductibility of rental payments versus those possible through historical cost depreciation is sufficiently large. Slovin, Sushka, and Polonchek find the impact of the announcement of a sale-leaseback of a building is positive, even though the relevant figures for debt financing reported in the literature are consistently nonpositive. As previously mentioned, this positive market reaction may result from an overall reduction in the present value of expected taxes induced by the transactions.[32]

Rutherford (1990) also examines the valuation effect of the sale-leaseback of corporate real estate on the stock prices of selling and purchasing firms. Consistent with Slovin, Sushka, and Polonchek, the evidence suggests that sale-leasebacks of corporate real estate have substantial benefits for the seller-lessee common stockholders. Additionally, the transactions produce an insignificant loss for the corporate purchaser-lessor.

Can we expect sale-leasebacks to provide similar results today? The 1986 Tax Reform Act may have reduced the benefits available to firms participating in sale-leasebacks.[33] Alvayay, Rutherford, and Smith (1995) examine the effect of sale-leasebacks of corporate real estate on the stock price of the selling firms. Consistent with the previous literature, they find a significant positive market reaction for the seller-lessee prior to the Tax Reform Act of 1986. However, after the Tax Reform Act of 1986, they find no significant abnormal returns accrue to firms involved in the sale-leaseback of corporate real estate. These authors provide results showing a significant relationship between cumulative abnormal returns and the change in the tax law, changes in income, and changes in the relative size of the sale.[34] Overall, the study provides empirical evidence that, as a result of the Tax Reform Act of 1986, the sale and leaseback of corporate real estate, on average, no longer generates significant wealth gains for shareholders.[35]

Corporate real estate managers should examine a potential sales-leaseback transaction in light of the current tax law. It is possible that a sale-leaseback arrangement may maximize shareholder wealth under one tax regime and hinder shareholder wealth under alternative tax legislation. Further research regarding the current motivations for undertaking sale-leasebacks would be helpful.

4. Empirical evidence on corporate restructuring of real estate

Generally, corporate real estate can be controlled within a company in a centralized or decentralized real estate department or through a wholly owned subsidiary.[36] This section examines the valuation effects of real estate spin-offs and the formation of other types of corporate real estate units. Unless the market believes real estate assets will be managed more efficiently under a new corporate structure, there is little reason to believe shareholder wealth will be increased as a result of corporate restructuring announcements. Table 5 summarizes the empirical evidence on the markets reaction to the restructuring of corporate real estate assets.

4.1. Spin-offs

One alternative to forming an internal centralized or decentralized real estate department is to "spin-off" corporate real estate to a separate entity. Spin-offs typically involve the formation of a subsidiary to own and control the parent company's real estate. The newly created shares of the subsidiary are then distributed to the original stockholders and the subsidiary operates independently.

Hite, Owers, and Rogers (1984) examine spin-offs as a vehicle to separate real estate operations from other operations. Their sample consists of thirty-three firms that announced and completed separation of real estate operations by spin-off during 1962 through 1982. In all cases, either the parent or the divested subsidiary was classified as a real estate company.

Table 5. Empirical evidence on restructuring of corporate real estate assets.

Author(s)	Journal (Year)	Abnormal Return (Interval)	Sample Period and Size	Summary
	AREUEA Journal (1984)	5.70% (−1, 0)	1962–1983 33	The results show that spin-off announcements are associated with wealth increases for stockholders. These gains are consistent with tax savings or contracting efficiencies being capitalized into stock prices at the date of the spin-off announcement.
Ball, Rutherford, and Shaw	*Journal of Real Estate Research* (1993)	2.70% (−1, 0)	1968–1990 40	Spin-offs produce significant abnormal returns. Postevent tracking of spun-off firms and parent firms show no significantly different returns from the market portfolio.
Rutherford and Nourse	*Journal of Real Estate Research* (1988)	2.14% (−10, 0)	1963–1986 71	Overall, there is a significant impact from the formation of a corporate real estate unit on the stock price of the parent organization. Wealth created varied among the type of units formed.

Their results show that spin-off announcements are associated with wealth increases for stockholders.[37] These gains are consistent with tax savings or contracting efficiencies being capitalized into stock prices at the date of the spin-off announcement. While there are positive price reactions associated with spin-off announcements, on average, differences exist across firms. The largest gains were achieved by non-real estate firms spinning-off real estate assets.[38] Cumulative abnormal returns regressed on the fraction of equity value divested reveal that, on average, for every 10 percent of equity distributed, the abnormal returns increased by 3 percent.

Further support that spin-offs produce positive abnormal returns is provided by Ball, Rutherford, and Shaw (1993). A sample of forty spin-offs from 1968 through 1990 produced significant cumulative abnormal returns over a two day interval around the event date. Tracking the returns of spun-off firms and parent firms after the event revealed no significantly different returns from the market portfolio.[39]

The empirical evidence indicates that spin-offs are value enhancing, but little has been said regarding the theoretical aspects of spin-off gains. Where do these gains come from? The shareholder wealth gains do not appear to be at the expense of bondholders.[40] John (1993) presents a theoretical explanation showing that a spin-off, in which the parent company debt is optimally allocated between the post-spin-off entities, increases shareholder wealth by reducing agency costs and increasing the value of tax shields. Similar to sell-offs, the value increases associated with real estate spin-offs are consistent with the hypothesis that firm values increase when information regarding real estate asset values is provided to the market.

4.2. Corporate real estate unit formation

A corporate real estate unit (CREU) may be formed in a variety of ways. For example, a centralized real estate department may be created, a wholly owned subsidiary can be formed (spun-off), or a publicly traded subsidiary could be created. The newly formed entity can be organized in different ways. For example, it can be a master limited partnership or a REIT. Rutherford and Stone (1989) study the motivations to form a CREU and do not find a significant relationship between the type of industry and the type of CREU formed. Their results indicate that the type of CREU formed reflects the extent that companies view real estate as important to firm performance. Overall, the results suggest that firms forming a CREU are attempting to efficiently use their corporate real estate in a manner consistent with the goals of their business.

Rutherford and Nourse (1988) examine the valuation impact of the formation of seventy-one CREUs. Rutherford and Nourse consider specific types of organizational forms such as REITs or master limited partnerships.[41] The reasons reported for creating a separate CREU include cost control, income generation, suspected undervaluation of real estate assets resulting in underpricing of common stock, efficiency gain in the management of real estate, risk reduction, and tax benefits. Overall, there is a significant positive market reaction to the formation of a corporate real estate unit on the stock price of the parent organization, and the level of wealth created varies among the organizational forms.[42] This is consistent with Teoh (1993), who suggests a separate corporate real estate unit is part of successful proactive corporate real estate management. The results of Rutherford and Nourse (1988) show larger gains for firms that formed CREUs for management purposes.[43] The largest gain was for publicly traded subsidiaries.[44]

The evidence shows that corporate restructuring of real estate operations can increase the value of the firm. Wealth gains may be attributed to tax savings or expected operating efficiencies being capitalized into stock prices. The results for CREU formation for management purposes indicate that shareholder wealth can be increased by more efficient management

of real estate assets. The idea of increasing shareholder wealth by improved management of corporate real estate assets is consistent with the evidence that the largest gains associated with spin-off announcements are experienced by non-real estate firms. This has important implications for corporate real estate managers. The relatively large wealth gains experienced by non-real estate firms may be due to a signal contained within the spin-off announcement. These announcements may signal that the corporation has recognized real estate operations should be a part of the overall strategic plan to maximize shareholder wealth.

5. Conclusion

The purpose of this paper was to review the literature on the impact of managerial decisions regarding real estate assets using evidence from the capital markets. Overall, the evidence shows that decisions concerning corporate real estate assets have significant effects on firm value. Decisions related to corporate real estate should be made with knowledge of the empirical evidence indicating the potential market reaction to these decisions. Regardless of whether real properties house productive activities of a traditional corporation or real property is held primarily for investment purposes, real estate-related decisions should be consistent with the overall strategic plan of the firm. How real estate is managed as a part of a firm's overall portfolio is an important issue. There is a growing body of literature that discusses real estate diversification alternatives.[45] Managers should also monitor real estate assets more carefully.[46]

There are some decisions related to corporate real estate that have not been empirically examined. For example, little is known about how the market perceives equity sharing agreements or various partnerships. It would be beneficial if research could identify which corporate real estate management strategies maximize the benefits to stockholders under various corporate settings. Furthermore, we do not know under what circumstances outsourcing real estate management tasks might provide wealth increases for stockholders, or how the market evaluates certain types of strategic planning initiatives such as total quality management.[47] What management compensation schemes miminize agency costs? The answer to these questions will increase our understanding of how corporate real estate decisions affect firm value and how to best manage real estate assets. Additional analysis of the effects of real estate decisions on the value of non-real estate corporations would be beneficial.[48] Besides the need for more research examining management decisions related to real estate, business schools need to better prepare students to make future real estate decisions.[49] Shareholder wealth maximization can be achieved only if corporate real estate assets are managed efficiently.

Acknowledgments

We gratefully acknowledge valuable comments from Keith Johnson, Austin Jaffe, Chinmoy Ghosh, and two anonymous referees. Research support was provided by the Real Estate Center at the University of Connecticut and the Charles Tandy American Enterprise Center of the M.J. Neeley School of Business at Texas Christian University.

Notes

1. DiLuia, Shlaes, and Tapajna (1991) provide further breakdowns of this estimate by property type, geographic area, and type of owner. Johnson and Keasler (1993) provide an analysis of real estate holdings by industry and by asset type for the years 1984 through 1991.

2. Bell (1987) indicates that total occupancy costs for companies can range from 5 percent to 8 percent of gross sales, which can translate from 40 percent to 50 percent of net income.
3. Unless stated otherwise, no difference or distinction is made in this paper between corporate real estate (defined as real properties that house productive activities of a traditional corporation) and investment real estate (defined as real property held primarily for investment purposes).
4. Much of the empirical work reviewed herein applies standard "event study" methodology commonly found in finance literature. For a review of the variations of standard methodology see Brown and Warner (1985), Patell (1976), and Peterson (1989). Standard "event study" methodology assumes the returns being analyzed come from a normal distribution. This may be a satisfactory assumption for firms traded in the New York Stock Exchange or the American Stock Exchange. However, several researchers have shown that NASDAQ firms' returns exhibit departures from normality. Specifically, return distributions often show leptokurtosis (fat tails) and right skewness. Therefore, researchers should not blindly make normality assumptions when analyzing real estate returns. Simple diagnostic tools such as Q-Q plots (Chambers et al., 1983) can be used to establish if data is normally distributed. Corrado (1989) and Cowan (1992) explain nonparametric alternative event study statistics that do not rely on the assumption of normal returns.
5. For a discussion of real estate within strategic framework, see Veale (1989), Isakson and Sircar (1990), Norwell (1991), Nourse and Roulac (1993), and Duckworth (1993). Within the strategic framework, managers should consider potential effects related to environmental legislation on shareholder liability (Davidson, 1989) and make decisions within an overall portfolio framework (Hudson-Wilson, 1990; McMahan, 1990; Hartzell, Shulman, and Wurtzebach, 1989; Newman, 1992; and Hoffman, Schniederjans, and Sirmans, 1990).
6. Other general findings noted by Veale include the reluctance of corporations to manage their real estate as independent assets, the lack of diagnostic tools being applied to decisions regarding corporate real estate assets, and the association between corporate real estate management practice and top management attitudes. McIntosh, Davidson, and Albert (1987), present a contrary view to the extent that they report relatively advanced financial methods are being used by corporate real estate managers.
7. In this study the dependent variable takes on values of zero or one, depending on whether a bid is received or not.
8. The existence of agency costs in real estate firms has been previously supported as it pertains to poison pills. A poison pill is an antitakeover measure that is sometimes proposed by management supposedly to protect the interest of the shareholders. McIntosh (1991) examines the shareholder wealth effects of sixteen publicly traded REIT's poison pill announcements. REIT poison pill defenses appear to reduce stockholder wealth, thereby providing support for the management entrenchment hypothesis. It also appears that the percentage decline in shareholder wealth is similar to the declines experienced by standard corporations that announce the adoption of a poison pill (Ryngaert, 1988).
9. Their sample consists of 112 relocation announcements. Unless stated otherwise, the findings reported throughout this text are significant at the 1 percent or 5 percent level.
10. Chan, Gau, and Wang (1995) examine 447 business relocation announcements. Regressing abnormal returns against the relative level of cash flow at the end of the year prior to the event in question is common practice. Usually, samples are segmented in terms of growth opportunities. However, this may not capture cash flows that excessive perquisite taking will consume in future years.
11. Howe and Shilling (1990) show that a REIT's choice of advisor is an important determinant of the returns realized by REIT shareholders. Alternative advisors are likely to recommend a variety of choices regarding how to best manage corporate real estate.
12. For a review of the literature on general management turnover, see Furtado and Karan (1990) and Jensen and Warner (1988).
13. Golz (1993) surveys REIT CEOs compensation scheme. Davis and Shelor (1995) examine the relationship between financial performance, firm size, and executive compensation in the real estate industry.
14. Redman and Tanner (1991) examine the methods used to finance real estate acquisitions. They find the largest source of funds is operating cash flows from the firms, and the second-largest financing source is mortgages on acquired properties. Retained earnings, long-term leases, sale leaseback arrangements, and joint ventures are also commonly used. Other methods are continuously emerging. Webb and McIntosh (1986) survey REIT investment rules.
15. Jaffe (1991) provides a contrary argument.
16. Specifically, the average two-day excess return in response to REIT debt offerings was 1.72 percent. Allen and Rutherford (1992) find similar results for taxpaying real estate corporations.
17. They examine the different wealth effects of merger announcements between real estate and non-real estate firms. The sample consists of 139 bidders and 111 targets during the years 1972 through 1987.
18. Market reaction does not appear to be related to changes in risk. Christensen and Levi (1993) provide evidence that neither sellers nor buyers of real estate experience changes in firm risk when they announce these transactions. While no changes in firm risk are reported, there is evidence that purchasers experience better than expected earnings in the year following the purchase.
19. An example of a joint venture arrangement is provided by Wilder and Rose (1987).

20. Seventy-two firms experience significant average abnormal returns of .76 percent over a two-day interval. The number of securities with positive abnormal returns (forty-seven) is significantly greater than the number of securities with negative abnormal returns (twenty-five). Joint ventures with anchor tenants experience significantly greater abnormal returns than those ventures with no anchor tenants. Firms with an informational advantage (closer to the marketplace where the proposed project is) had excess returns of 1.75 percent, while those that had information disadvantages experienced −.31 percent abnormal returns. Therefore, a significant portion of the abnormal return appears to be captured by shareholders of firms that have an informational advantage. After grouping into portfolios of technical expertise versus not having technical expertise, the authors report that firms with technical expertise experience 1.97 percent return, while firms without expertise experienced average negative returns of −.38 percent. Both were not significant.
21. Real estate firms (fifty-seven) experience significant 1.48 percent wealth gains on day 0 and non-real estate firms (eighty-two) experience positive but insignificant wealth effects. The difference in wealth gains between the two groups is significant.
22. Abnormal returns of 1.11 percent were detected over the interval (−1, 0).
23. For earlier literature on this topic, see Jewett (1977). Neidich and Steinberg (1984) illustrate how to determine whether selling investment real estate is a good alternative for raising equity.
24. The total sample (seventy-one) experienced 1 percent wealth gains over the interval (−5, 0), and .8 percent over the interval (−1, 0). Sellers (fifty-five) on average experienced .7 percent wealth gains over this two-day interval. Acquiring firms (sixteen) were also found to gain 1.2 percent during the event period.
25. These results are in agreement with the more general finance literature. The non-real estate research generally indicates that sellers earn positive abnormal returns and buyers earn zero abnormal returns.
26. The subsamples consisted of nineteen firms that announced liquidation (Chapter 7) and seventeen that announced reorganization (Chapter 11).
27. Significant −11 percent cumulative abnormal returns were found over a two-day interval.
28. Overall, about 8 percent shareholder wealth gains are observed over a two-day interval.
29. The average cumulative negative return over the twenty-one-day period (day −10 to +10) is more than twice the magnitude of that from day −1 to day 0 and is significant.
30. Clark and Weinstein (1983) report that corporations generally experience an abnormal return of −47.2 percent around the announcement of reorganizations. Real estate corporations also appear to experience less positive abnormal returns to voluntary liquidation, which Kim and Schatzberg (1987) report to be about 11.4 percent.
31. Many authors have explained how sale-leasebacks work. For examples, see Cohen (1988), Holman, Johnston, and Novogradac (1988), and Galperin (1992).
32. These authors also looked at sale-leaseback of aircraft and found similar results (positive gains to lessee firms). Finally, they looked at "safe harbor" leasing events, which are not equivalent to debt. Safe harbor leasing events consist of selling tax benefits. They found positive abnormal returns associated with this additional event. Given these results, one can infer that the positive market reaction results from an overall reduction of the PV of expected taxes provided by the transactions.
33. The period over which real property could be depreciated was lengthened and some real estate-related tax shelters were abolished. Furthermore, the corporate income tax rate, for firms earning over $100,000 per year, was reduced from 46 percent to 34 percent. This reduced the benefits from transferring tax shields between lessees and lessors.
34. The sign on the coefficient for the tax variable suggests the Tax Return Act of 1986 had a negative impact on the benefits of sale-leaseback transactions to the lessee firm.
35. These results are consistent with Sanger, Sirmans, and Turnbull (1990), who study the effects of the 1976 and 1986 Tax Reform Acts on the risks and returns of real estate investment trusts and other real estate firms.
36. Bell (1987) explains why corporations with significant real estate assets should establish a separate real estate division.
37. The gains reported are similar to those which exist in the general finance literature regarding spin-offs (Hite and Owers, 1983). The abnormal returns are slightly higher for real estate spin-offs. This may be associated with the increased size of the spin-offs in absolute terms, as well as in the percentage of equity divested.
38. The average excess return is 5.7 percent during a two-day interval surrounding the first *Wall Street Journal* report of a pending spin-off. Non-real estate firms experience 9.1 percent wealth gains upon the announcement to spin-off real estate operations.
39. Heller, Dhatt, and Kudla (1993) find that a portfolio of 198 spun-off firms outperformed the value weighted NASDAQ Composite Index over the 1980 to 1990 period.
40. Neither Hite and Owers (1983) nor Schipper and Smith (1983) find evidence that spin-offs harm bondholders.
41. Twenty were centralized real estate departments, fourteen were wholly owned subsidiaries, eight were publicly traded subsidiaries, eleven were master limited partnerships, and nineteen were REITs.
42. They find a significant cumulative abnormal return (CAR) of 2.14 percent over the interval (−10, 0). The results for master limited partnerships on day 0 are 1.57 percent and 5.47 percent over the interval (−20, 0). REITs experience 1.0 percent wealth gains on day −1. Wholly owned subsidiaries experience a CAR of 4.2 percent over the (−10, 0) interval.

43. CRUEs formed for *investment* experience average abnormal returns of 1.08 percent on day −1. CRUEs formed for *management* experience 2.03 percent wealth gains over the (−1, 0) interval.
44. They experience a CAR of 5.72 percent for the interval (−10, 0) and 5.62 percent over the interval (1, 10). The next largest CAR is 5.47 percent of (−20, 0) and it is associated with master limited partnerships. This is followed by REITs, which experience 1.0 percent wealth gains. Centralized real estate departments are associated with a loss of 1.46 percent.
45. Sirmans and Fisher (1993) evaluate the key issues and previous literature regarding real estate in multiasset portfolios.
46. Miles, Pringle, and Webb (1989) illustrate a model to more easily evaluate real estate on an ongoing basis while considering the overall operations of the firm.
47. Kimbler and Rutherford (1993) examine the issues and problems that may occur when a corporate outsources its corporate real estate function. Further discussions on outsourcing real estate management tasks are provided by Walton (1993) and Bergsman (1993). For discussions on total quality management applied to real estate, see Chalk (1993) and Rategan (1992).
48. Much of the research on how real estate decisions affect firm value is carried out by examining REITs. REITs operate under unique guidelines that provide researchers the opportunity to investigate issues that would otherwise be difficult to isolate. Corgel, McIntosh, and Ott (1995) provide a discussion on the institutional background of REITs and a thorough review of literature on REIT investment, financing, and risk/return issues. The unique setting in which REITs operate allows comparisons to be made between real estate and non-real estate companies. For example, Wang, Chan, and Gau (1992) and Below, Zaman, and McIntosh (1995) examine initial public offerings of REITs and compare their findings to results for standard corporations. There are several studies that examine REIT performance. Eichholtz and Hartzell (1995) examine property shares performance and their relation to stock market performance and to appraisal based indices in an international setting. Glascock and Hughes (1995) provide a useful list and performance characteristics of REITs that have data available on CRSP tapes.
49. A suggested course outline on corporate real estate is provided by Dasso, Kinnard, and Rabianski (1989).

References

Allen, Marcus T., and Rutherford, Ronald C. (1992). "The Impact of Financing Decisions on the Security Returns of Real Estate Corporations." *Journal of Real Estate Finance and Economics* 5(4), 393–400.

Allen, Marcus T., Rutherford, Ronald, and Springer, Thomas. (1993). "The Wealth Effects of Corporate Real Estate Leasing." *Journal of Real Estate Research* 8(4), 567–578.

Allen, Paul R., and Sirmans, C.F. (1987). "An Analysis of Gains to Acquiring Firm's Shareholders: The Special Case of REITs." *Journal of Financial Economics* 18(1), 75–184.

Alli, Kasim, Ramirez, Gabriel, and Yung, Kenneth. (1991). "Corporate Headquarter Relocation: Evidence from the Capital Markets." *AREUEA Journal* 19(4), 583–599.

Alvayay, Jaime R., Rutherford, Ronald C., and Smith, William S. (1995). "Tax Rules and the Sale and Leaseback of Corporate Real Estate." *Real Estate Economics* 23(2), forthcoming.

Ambrose, W. Brent. (1990). "Corporate Real Estate's Impact on the Takeover Market." *Journal of Real Estate Finance and Economics* 3(4), 307–322.

Arthur Anderson & Company, S.C. (1993). "Real Estate in the Corporation: The Bottom Line from Senior Management." San Francisco, CA.

Ball, J'Noel, Rutherford, Ronald, and Shaw, Ron. (1993). "The Wealth Effects of Real Estate Spin-Offs." *Journal of Real Estate Research* 8(4), 597–606.

Bell, Michael. (1987). "The Importance of Sound Fixed Asset Management." *Industrial Development* 156(1), 11–13.

Below, Scott, Zaman, Mir A., and McIntosh, Willard. (1995). "The Pricing of Real Estate Investment Trust Initial Public Offerings." *Journal of Real Estate Finance and Economics* 11(1), 55–64.

Bender, Andrew. (1991). "Disposition Alternatives for Surplus Corporate Real Estate." *Real Estate Finance Journal* 6(3), 18–22.

Bergsman, Steve. (1993). "Emphasis on Core Competency Redefines Corporate Outsourcing and Boosts Strategic Alliances." *National Real Estate Investor* 35(8), 30–40.

Bradley, M., Desai, D.A., and Kim, E.H. (1988). "Synergistic Gains from Corporate Acquisitions and Their Division Between the Stockholders of Target and Acquiring Firms." *Journal of Financial Economics* 21(1), 3–40.

Brown, Stephen J., and Warner, Jerold B. (1985). "Using Daily Stock Returns: The Case of Event Studies." *Journal of Financial Economics* 14(1), 3–31.

Chalk, Mary Beth. (1993). "Implementing Total Quality within Corporate Real Estate." *Site Selection and Industrial Development* 32(2), 7–10.

Chambers, John M., Cleveland, William S., Kleiner, Beat, and Tuckey, Paul A. (1983). *Graphical Methods for Data Analysis*. Pacific Grove, CA: Wadsworth and Brookes.

Chan, Su Han, Gau, George, and Wang, Ko. (1995). "Stock-Market Reaction to Capital Investment Decisions: Evidence from Business Relocations." *Journal of Financial and Quantitative Analysis* 30(1), 81-100.

Christensen, Donald G., and Levi, Donald R. (1993). "Corporate Restructurings Involving Real Estate Assets: Some Earnings and Risk Signal Implications." *Journal of Real Estate Research* 8(4), 579-595.

Clark, Truman A., and Weinstein, Mark I. (1983). "The Behavior of the Common Stock of Bankruptcy Firms." *Journal of Finance* 38(2), 489-504.

Cohen, Gerald. (1988). "Sale/Leasebacks: How They Can Benefit the Corporation." *Site Selection and Industrial Development* 33(6), 18-20.

Corgel, John B., McIntosh, Willard, and Ott, Steven H. (1995). "Real Estate Investment Trusts: A Review of the Financial Economics Literature." *Journal of Real Estate Literature* 3(1), 13-43.

Corgel, John B., and Rogers, Ronald C. (1987). "Corporate Real Estate Joint Ventures and Security Price Performance." *Real Estate Issues* 12(2), 1-4.

Corrado, Charles J. (1989). "A Nonparametric Test for Abnormal Security Price Performance in Event Studies." *Journal of Financial Economics* 23(2), 385-396.

Cowan, Arnold R. (1992). "Nonparametric Event Study Tests." *Review of Quantitative Finance and Accounting* 2(4), 343-358.

Dasso, Jerome, Kinnard, William, and Rabianski, Joseph. (1989). "Corporate Real Estate: A Course Outline and Rationale." *Journal of Real Estate Research* 4(3), 35-46.

Davidson, Charles E. (1989). "Corporate Ownership of Real Estate: The Impact of Environmental Legislation on Shareholder Liability." *Real Estate Law Journal* 17(4), 291-312.

Davis, Barbara J., and Shelor, Roger M. (1995). "Executive Compensation and Financial Performance in the Real Estate Industry." *Journal of Real Estate Research*, forthcoming.

DiLuia, Ed, Shlaes, Jared, and Tapajna, Joe. (1991). "Who Owns America and How Should It be Managed?" *Journal of Property Management* 56(4), 40-43.

Dodd, Peter. (1980). "Merger Proposals, Management Discretion and Stockholder Wealth." *Journal of Financial Economics* 8(2), 105-138.

Duckworth, Steven L. (1993). "Realizing the Strategic Dimension of Corporate Real Property Through Improved Planning and Control Systems." *Journal of Real Estate Research* 8(4), 495-509.

Ebert, Larry. (1987). "Lease vs. Buy: The Corporate Perspective." *Real Estate Issues* 12(1), 15-20.

Eichholtz, Piet M.A., and Hartzell, David J. (1995). "Property Shares, Appraisals and the Stock Market: An International Perspective." *Journal of Real Estate Finance and Economics*, forthcoming.

Elayan, Fayez A. (1993). "The Announcement Effect of Real Estate Joint Ventures on Returns to Stockholders: An Empirical Investigation." *Journal of Real Estate Research* 8(1), 13-26.

Elayan, Fayez, and Maris, Brian E. (1991). "Stock Market Response to Voluntary Liquidations and Reorganization of Real Estate Corporations." *AREUEA Journal* 19(1), 92-101.

Elayan, Fayez, and Young, Philip. (1994). "The Value of Control: Evidence from Full and Partial Acquisitions in the Real Estate Industry." *Jounral of Real Estate Finance and Economics* 8(2), 167-182.

Farragher, Edward. (1984). "Corporate Real Estate Asset Decision-Making." *Real Estate Appraiser and Analyst* 50(3), 13-17.

Furtado, Eugene P.H., and Karan, Vijay. (1990). "Causes, Consequences, and Shareholder Wealth Effects of Management Turnover: A Review of the Empirical Evidence." *Financial Manogement* 19(2), 60-75.

Gale, Jeffrey, and Case, Fred. (1989). "A Study of Corporate Real Estate Resource Management." *Journal of Real Estate Research* 4(3), 23-34.

Galperin, Ron. (1992). "Corporations Use Sale/Leasebacks to Cash in on Their Real Estate." *National Real Estate Investor* 34(5), 72-76.

Glascock, John, Davidson, Wallace, and Sirmans, C.F. (1989). "An Analysis of the Acquisition and Disposition of Real Estate Assets." *Journal of Real Estate Research* 4(3), 131-140.

Glascock, John, Davidson, Wallace, and Sirmans, C.F. (1991). "The Gains from Corporate Selloffs: The Case of Real Estate Assets." *AREUEA Journal* 19(4), 567-582.

Glascock, John, and Hughes, Jr., William T. (1995). "NAREIT Identified Exchange Listed REITs and Their Performance Characteristics: 1972-1991." *Journal of Real Estate Literature* 3(1), forthcoming.

Ghosh, Chinmoy, Rodriguez, Mauricio, and Sirmans, C.F. (1995). "Gains from Headquarters Relocations: Evidence from the Stockmarket." *Journal of Urban Economics*, forthcoming.

Golz, Gregory L. (1993). "The Compensation of REIT CEO's Provides Inadequate Incentives." *Real Estate Review* 23(2), 7-10.

Hartzell, David, Shulman, David, and Wurtzebach, Charles. (1989). "Refining the Analysis of Regional Diversification for Income-Producing Real Estate." *Journal of Property Mangement* 54(4), 19-24.

He, Ling T., Myer, F.C., and Webb, James R. (1993). "The Wealth Effects of Domestic Versus International Joint Ventures: The Case of Real Estate." Working paper, Cleveland State University, Cleveland, OH.

Heller, David B., Dhatt, Manjeet S., and Kudla, Ronald J. (1993). "The Portfolio Performance of Spin-Off Firms, 1980-1990." Working paper, The University of Akron, Akron, OH.

Hite, Gailen L., and Owers, James E. (1983). "Security Price Reaction Around Corporate Spin-Off Announcements." *Journal of Financial Economics* 12(4), 409–436.

Hite, Gailen L., Owers, James E., and Rogers, Ronald C. (1984). "The Separation of Real Estate Operations by Spin-Off." *AREUEA Journal* 12(3), 318-332.

Hoffman, James, J., Schniederjans, Marc J., and Sirmans, Stacy. (1990). "A Multi-Criteria Model for Corporate Property Evaluation." *Journal of Real Estate Research* 5(3), 285-300.

Holman, Robert, Johnston, D.S., and Novogradac, Michael. (1988). "The Real Estate Sale-Leaseback." *Journal of Property Management* 53(1), 77-79.

Howe, John S., and Shilling, James D. (1988). "Capital Structure Theory and REIT Security Offerings." *Journal of Finance* 43(4), 983-993.

Howe, John, and Shilling, James. (1990). "REIT Advisor Performance." *AREUEA Journal* 18(4), 479-500.

Hudson-Wilson, Susan. (1990). "New Trends in Portfolio Theory." *Journal of Property Management* 55(3), 57-58.

Isakson, Hans R., and Sircar, Sumit. (1990). "The Critical Success Factors Approach to Corporate Real Estate Management." *Real Estate Issues* 15(1), 26-31.

Jaffe, Austin J., and Sirmans, C.F. (1995). *Fundamentals of Real Estate Investment*. Englewood Cliffs, NJ: Prentice-Hall.

Jaffe, Jeffrey F. (1991). "Taxes and the Capital Structure of Partnerships, REITs, and Related Entities." *Journal of Finance* 46(1), 401–408.

Jensen, Michael C. (1986). "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers." *American Economic Review* 76(2), 323-329.

Jensen, Michael C., and Meckling, William. (1976). "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics* 3(4), 305-360.

Jensen, Michael C., and Warner, J.B. (1988). "The Distribution of Power Among Corporate Managers, Shareholders, and Directors." *Journal of Financial Economics* 20(1/2), 3-24.

Jewett, Lincoln. (1977). "How to Market Surplus Real Estate." *Harvard Business Review* 55(1), 7-10.

John, Teresa A. (1993). "Optimiality of Spin-Offs and Allocation of Debt." *Journal of Financial and Quantitative Analysis* 28(1), 139-160.

Johnson, Linda L., and Keasler, Terry. (1993). "An Industry Profile of Corporate Real Estate." *Journal of Real Estate Research* 8(4), 455–473.

Kim, Han E., and Schatzberg, John D. (1987). "Voluntary Corporate Liquidations." *Journal of Financial Economics* 19(2), 311-328.

Kimbler, Larry B., and Rutherford, Ronald C. (1993). "Corporate Real Estate Outsourcing: A Survey of the Issues," *Journal of Real Estate Research* 8(4), 525-565.

Manning, Chris. (1991). "Leasing Versus Purchase of Corporate Real Property: Leases with Residual Equity Interests." *Journal of Real Estate Research* 6(1), 79-85.

Maris, Brian A., and Elayan, Fayez A. (1990). "Capital Structure and the Cost of Capital for Untaxed Firms: The Case of REITs." *AREUEA Journal* 18(1), 22-39.

McConnell, John J., and Nantell, Timothy J. (1985). "Corporate Combinations and Common Stock Returns: The Case of Joint Ventures." *Journal of Finance* 40(2), 519-536.

McIntosh, Willard. (1991). "The Effect of Poison Pill Securities on REIT Stock Prices." *Real Estate Issues* 16(1), 34-38.

McIntosh, Willard, Davidson, Wallace, and Albert, Joseph. (1987). "Capital Budgeting Practices of Corporate Real Estate Executives." *Appraisal Journal* 55(1), 125-137.

McIntosh, Willard, Officer, Dennis T., and Born, Jeffrey A. (1989). "The Wealth Effects of Merger Activities: Further Evidence from Real Estate Investment Trusts." *Journal of Real Estate Research* 4(3), 141-155.

McIntosh, Willard, Ott, Steven H., and Liang, Youguo. (1995). "The Wealth Effects of Real Estate Transactions: The Case of REITs." *Journal of Real Estate Finance and Economics*, forthcoming.

McIntosh, Willard, Rogers, Ronald C., Sirmans, C.F., and Liang, Youguo. (1994). "Stock Price and Mangement Changes: The Case of REITs." *AREUEA Journal* 22(3), 515-526.

McMahan, John. (1990). "Balancing a Portfolio." *Journal of Property Management* 55(3), 55-56.

Miles, Mike, Pittman, Robert, Hoesli, Martin, Bhatnager, Pankaj, and Guilkey, David. (1991). "A Detailed Look at America's Real Estate Wealth." *Journal of Property Mangement* 56(4), 45-50.

Miles, Mike, Pringle, John, and Webb, Brian. (1989). "Modeling the Corporate Real Estate Decision." *Journal of Real Estate Research* 4(3), 47-66.

Myer, F.C., He, Ling, and Webb, James. (1992). "Sell-Offs of U.S. Real Estate: The Effect of Domestic Versus Foreign Buyers of Shareholder Wealth." *Journal of the American Real Estate and Urban Economics Association* 20(3), 487-500.

Neidich, Daniel, and Steinberg, Thomas. (1984). "Corporate Real Estate: Source of New Equity?" *Harvard Business Review* 62(4), 76-83.

Newman, Morris. (1992). "New Demands from Pension Fund Investors." *Journal of Property Management* 47(5), 52-54.

Norwell, William. (1991). "The Real Estate Decision Process." *Journal of Property Management* 56(2), 58-60.

Nourse, Hugh. (1990). *Managerial Real Estate: Corporate Real Estate Asset Management*. Englewood Cliffs, NJ: Prentice-Hall.

Nourse, Hugh. (1994). "Measuring Business Real Property Performance." *Journal of Real Estate Research* 9(4), 431-444.

Nourse, Hugh, and Kingery, Dorothy. (1987a). "Survey of Approaches to Disposing of Surplus Corporate Real Estate." *Journal of Real Estate Research* 2(1), 51-59.

Nourse, Hugh, and Kingery, Dorothy. (1987b). "Marketing Surplus Corporate Real Estate." *Industrial Development* 156(4), 1-3.

Nourse, Hugh, and Kingery, Dorothy. (1987c). "Marketing Idle Corporate Real Estate." *Real Estate Issues* 12(1), 21-25.

Nourse, Hugh O., and Roulac, Stephen E. (1993). "Linking Real Estate Decisions to Corporate Strategy." *Journal of Real Estate Research* 8(4), 475-494.

Owers, James E., and Rogers, Ronald C. (1986). "The Divestiture of Real Estate Assets by Sell-Offs." *Real Estate Issues* 11(1), 29-35.

Patell, James. (1976). "Corporate Forecasts of Earnings per Share and Stock Behavior: Empirical Tests." *Journal of Accounting Research* 14(2), 246-276.

Peterson, Pamela P. (1989). "Event Studies. A Review of Issues and Methodology." *Quarterly Journal of Business Economics* 28(3), 36-66.

Pittman, Robert, and Parker, Joel. (1989). "A Survey of Corporate Real Estate Executives on Factors Influencing Corporate Real Estate Performance." *Journal of Real Estate Research* 4(3), 107-119.

Rategan, Cathie. (1992). "Total Quality Management." *Journal of Property Management* 47(5), 32-34.

Ravichandran, R., and Sa-Aadu, J. (1988). "Resource Combination and Security Price Reactions: The Case of Real Estate Joint Ventures." *AREUEA Journal* 16(2), 105-122.

Redman, Arnold L., and Manakyan, Herman. (1993). "Capital Structure of REITs: The Impact of Business Risk." Working paper, The University of Tennessee-Martin, Martin, TN.

Redman, Arnold, and Tanner, John. (1989). "The Acquisition and Disposition of Real Estate by Corporate Executives: A Survey." *Journal of Real Estate Research* 4(3), 67-80.

Redman, Arnold, and Tanner, John. (1991). "The Financing of Corporate Real Estate: A Survey." *Journal of Real Estate Research* 6(2), 217-240.

Rodriguez, Mauricio, and Sirmans, C.F. (1994). "Shareholder Wealth and Firm-Specific Human Capital: Evidence from Real Estate Management Turnover." Working paper, The University of Connecticut, Storrs, CT.

Rutherford, Ronald C. (1990). "Empirical Evidence on Shareholder Value and the Sale-Leaseback of Corporate Real Estate." *AREUEA Journal* 18(4), 522-529.

Rutherford, Ronald C., and Nourse, Hugh O. (1988). "The Impact of Corporate Real Estate Unit Formation on the Parent Firm's Value." *Journal of Real Estate Research* 3(3), 73-84.

Rutherford, Ronald C., and Stone, Robert W. (1989). "Corporate Real Estate Unit Formation: Rationale, Industry and Type of Unit." *Journal of Real Estate Research* 4(3), 121-129.

Ryngaert, Michael. (1988). "The Effect of Poison Pill Securities on Shareholder Wealth." *Journal of Financial Economics* 20(1/2), 377-418.

Sanger, Gary C., Sirmans, C.F., and Turnbull, Geoffrey K. (1990). "The Effects of Tax Reform on Real Estate: Some Empirical Results." *Land Economics* 66(4), 409-424.

Schipper, Katherine, and Smith, Abbie. (1983). "Effects of Recontracting on Shareholder Wealth: The Case of Voluntary Spin-Offs." *Journal of Financial Economics* 12(4), 437-467.

Sirmans, C.F., and Fisher, Jeffrey D. (1993). "Real Estate in Multi-Asset Portfolios: A Review of the Literature." Pension Real Estate Association, Glastonbury, CT.

Slovin, Myron B., Sushka, Marie E., and Polonchek, John A. (1990). "Corporate Sale-and-Leaseback and Shareholder Wealth." *Journal of Finance* 45(1), 289-299.

Smith, C.W., Jr. (1986). "Investment Banking and the Capital Acquisition Process." *Journal of Financial Economics* 15(1/2), 3-29.

Teoh, Wei K. (1993). "Corporate Real Estate Asset Management: The New Zealand Evidence." *Journal of Real Estate Research* 8(4), 607-623.

Veale, Peter. (1988). "Managing Corporate Real Estate Assets: A Survey of U.S. Real Estate Executives." Massachusetts Institute of Technology, Laboratory of Architecture and Planning, Cambridge, MA.

Veale, Peter. (1989). "Managing Corporate Real Estate Assets: Current Executive Attitudes and Prospects for Emergent Management Discipline." *Journal of Real Estate Research* 4(3), 1-22.

Walton, Dorothy. (1993). "Picking up the Pieces: Opportunities in Corporate Outsourcing." *Journal of Property Management* 58(1), 26-29.

Wang, Ko, Chan, Su Han, and Gau, George W. (1992). "Initial Public Offerings of Equity Securities: Anomalous Evidence Using REITs." *Journal of Financial Economics* 31(3), 381-410.

Webb, James R., and McIntosh, Willard. (1986). "Real Estate Investment Acquisition Rules for REITs: A Survey." *Journal of Real Estate Research* 1(1), 77–91.

Wilder, Barry, and Rose, Ralph. (1987). "Joint Ventures: Real Estate Profit Opportunities for Corporate America." *Industrial Development* 156(2), 14–22.

Zeckhauser, Sally, and Silverman, Robert. (1983). "Rediscover Your Company's Real Estate." *Harvard Business Review* 61(1), 111–117.