

The Financing of Corporate Real Estate: A Survey

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Abstract. The management of real estate assets owned by corporations has grown in importance over the past decade. Surveys have been published concerning the evaluation and decisionmaking in the leasing and purchasing of corporate assets. Little research, however, has been conducted to determine how executives finance real estate and the criteria used to make lease and purchase decisions. This study surveyed corporate real estate executives about the sources of funds to acquire real estate, the use and evaluation of leases, the use and evaluation of sale-leaseback arrangements and the use of tax-deferred exchanges of real property.

Introduction

Within the last decade, the management of real estate has increased in importance to many U.S. corporations. As noted by Zeckhauser and Silverman [16] real estate represents 25% to 40% of the assets of major corporations, based on market values of the early 1980s. Gale and Case [9] found that two-thirds of their respondents have separate real estate departments, while 17% had real estate managed by separate affiliates. While there is evidence of undermanagement, active management of real estate has increased [14]. What is not well known is how the decisions are made concerning the management, the operation and the financing of real property. Real estate, in corporate finance textbooks, is included as one of the capital investments a firm makes, but little is discussed about how the real property should be operated or financed. There has been little research, as yet, into the use and the financing of corporate real estate. Given the increased awareness of the importance of real estate to a corporation's "bottom line," share value and the possible importance of real estate in corporate takeovers, it is necessary to investigate the use and financing of real estate in corporate life.

Much of the past survey research into the financing of corporate assets has been concerned with the lease versus purchase decision, related primarily to equipment acquisitions. Corporate finance literature has numerous articles examining the leasing of assets. Over the past thirteen years, several surveys have been conducted to explore the leasing decisionmaking processes of executives [1, 8, 13]. Other articles have been concerned with the issues and processes that are important to the leasing decision [2, 5, 10, 15]. One article related to real estate leasing decisions was written by Ebert [7]. Though research has been published concerning the financing of capital investments, little has been written about how corporations finance the real estate acquired and about the analytical procedures used by corporate executives to make financing decisions.

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The purpose of this study is to examine the financing and decision methods used by executives in acquiring real property for their firms. In conducting the survey, we wanted to examine not only the financing techniques used and the frequency of use of specific methods, but also how managers evaluate the appropriateness of the methods in order to maximize the value of the firm, particularly in light of the theoretically preferred techniques suggested in the academic finance field.

This article is composed of three additional sections. The first section describes the data, methodology and survey instrument used. The second section discusses the results of the survey. Finally, the third section summarizes the results and discusses the conclusions from the study.

Data and Research Methodology

The data-gathering instrument consisted of a questionnaire composed of twenty-three questions concerning the financing, the leasing and the use of tax-deferred exchanges of corporate real estate (a copy of the questionnaire is reproduced in the Appendix). The questions covered five areas: (1) the general characteristics of the corporations (type of firm, book value of assets and the value of real estate recently acquired), (2) the methods used to finance real estate acquisitions, (3) use of leasing and analytical methods used to evaluate the choice of leasing and buying, (4) use of sale-leaseback arrangements and the analytical methods used to decide whether to sell and lease back property and (5) the use of tax-deferred exchanges.

The questionnaires were mailed to twelve hundred members of the International Association of Corporate Real Estate Executives (NACORE) and the Industrial Development Research Council (IDRC). Two hundred-eighteen questionnaires were returned, giving a response rate of 18.2%, comparable to other surveys on related topics [12, 13].

The sample was selected from the IDRC and NACORE memberships to prevent questionnaires from being sent to different executives of the same firms. The members of IDRC and NACORE comprise companies in different industries. The IDRC is composed primarily of manufacturing companies and NACORE includes companies in the retail, telecommunications, banking, financial services, wholesale and development industries. The sample was selected to include companies in several industries to have a wide cross-section of respondents. In addition, the executives were assured their responses would be anonymous to provide a stimulus for them to respond. Since no comprehensive systematic analysis was completed, a small amount of non-response bias was possible. To the extent such a bias exists, the authors believe it would be the smaller corporations that have less formal financing procedures that would not respond.

Results

Exhibit 1 contains the general characteristics of the firms in the sample. Panel A of Exhibit 1 shows the types of firms employing the executives. The largest responses were from manufacturing companies, 31.2%, and retail firms, composing 19.7% of the sample. The fourth largest response came from land development companies (10.6%).

Exhibit 1 Characteristics of Survey Sample

| | Percentage of Responses |
|-------------------------------------|-------------------------|
| <hr/> | |
| A. Type of Firm | |
| Manufacturing | 31.2 |
| Retail | 19.7 |
| Financial Services | 8.3 |
| Commercial Bank | 1.4 |
| Public Accounting | 0.5 |
| Land Development | 10.6 |
| Real Estate Consulting | 3.7 |
| Petroleum Refining | 2.8 |
| Hotel Development | 1.4 |
| Computer Software Development | 1.8 |
| Telecommunications | 5.0 |
| Other: | |
| Government | |
| Integrated Petroleum | |
| Computer Hardware Manufacturing | |
| Transportation | |
| Chemicals | |
| Mining | |
| Data Processing Services | |
| Computer Sales and Service | |
| Car Rental | |
| Health Services | |
| Distribution and Food Wholesale | |
| Restaurant | |
| Research and Development | |
| Publishing | |
| Aerospace | |
| Child Care | |
| Utility | |
| Entertainment/Broadcasting | |
| Commercial Real Estate Brokerage | |
| | 100.0 |
| B. Total Assets of Firm—Book Value | |
| Under \$50 million | 10.0 |
| \$50–\$100 million | 6.2 |
| \$101–\$250 million | 8.2 |
| \$251–\$500 million | 10.0 |
| \$501–\$1 billion | 12.0 |
| Over \$1 billion | 53.6 |
| | 100.0 |
| C. Annual Investment in Real Estate | |
| \$10 million or less | 37.8 |
| \$11–\$49 million | 25.7 |
| \$50–\$100 million | 13.6 |
| Over \$100 million | 22.9 |
| | 100.0 |

The third largest group was classified as Other (13.6%). The kinds of other organizations in the sample are listed in Panel A of Exhibit 1. The sample included government (federal), integrated petroleum companies, distribution firms, transportation firms, publishing houses, broadcasting companies, public utilities and several others. Even with approximately 50% of the sample coming from manufacturing and retailing companies, a cross-section of organizations was included in the sample. Of particular interest in the study was the financing techniques and analytical methods used by manufacturing firms since little has been written about the real estate decisionmaking in those companies. The main focus of the survey was on the real estate decisions of firms whose operations were outside of the real estate industry.

Panel B of Exhibit 1 contains the asset size of the companies. Over one-half of the firms were over one billion dollars in size. The rest of the sample was fairly evenly distributed among companies of less than one billion dollars in assets. Approximately 75% of the sample had assets over \$250 million.

Panel C contains the distribution of dollar investment in real estate made within the past year. Of the sampled companies, 37.8% invested \$10 million or less in real estate, 25.7% invested between \$11 million and \$49 million. The third largest category was firms that invested over \$100 million in real estate; 22.9% of the sample fell into that category.

Real Estate Financing Methods

The first area of concern of the survey was the methods used by companies to finance the real estate assets acquired as can be seen in Exhibit 2. The largest source of funds is

Exhibit 2 Methods Used to Finance Real Estate Acquisitions

| | Percentage of Responses* |
|---|--------------------------|
| Mortgages Secured by the Acquired | 40.8 |
| Retained Earnings | 34.4 |
| Cash Flow from Operations | 62.8 |
| Mortgage Bonds | 6.9 |
| Common Stock | 4.1 |
| Preferred Stock | 0.9 |
| Unsecured Bonds | 2.3 |
| Commercial Paper | 4.6 |
| Long-term Leases | 35.8 |
| Sale-Leaseback Arrangements | 24.8 |
| Joint Ventures | 23.9 |
| Other: | 10.1 |
| Cash and Funds From Pension Funds | |
| Parent Company Credit Lines | |
| Commercial Bank Financing | |
| Industrial Revenue Bonds | |
| Mortgages Secured by Other Company Property | |
| Short-term Leases | |
| Ground Leases | |
| Land Exchanges | |

*Responses do not add to 100% because more than one response per company was allowed.

the operating cash flows of the firms (62.8%). The second largest source is mortgages on the acquired properties (40.8% of the sample). Several other financing methods were common: retained earnings (34.4%), long-term leases (35.8%), sale-leaseback arrangements (24.8%) and joint ventures (23.9%). Ten percent of the executives specified other sources such as parent company credit lines, commercial bank financing, short-term leases, tax-deferred exchanges, industrial revenue bonds and cash from the company's pension fund.

Several interesting conclusions can be drawn from Exhibit 2. One, firms generate much of the needed funds for real estate internally, through cash flow or retained earnings (an accounting source of funds). A large proportion (42.0%) of the firms use mortgages secured by the acquired property to fund the purchase. Second, some form of leasing (long-term, short-term or sale-leaseback) is frequently used to acquire needed real property. Third, external financing in the form of sales of securities is a much less important source of funds. Sales of unsecured bonds was cited by only 4.6% of the managers, while 6.9% used mortgage bonds. Common stock was only used by 4.1% of the sample and preferred stock was used least often, less than 1% specified preferred stock sales as a source of funds. In finance theory, it is viewed that corporations secure funds for capital investments internally and externally through the sale of a combination of securities. The cost of capital is derived from the costs of the optimal funding sources. However, the financing of real estate acquisitions, given the more common use of internal funding rather than external sources, is the opposite of the treatment in financial management theory. The calculation of a firm's cost of capital should not be affected, though.

A fourth conclusion that can be drawn from Exhibit 2 is that some executives, though a minority, use unexpected sources of financing for their real estate. Of the executives surveyed, 4.6% used commercial paper as a source of funds, several specified commercial bank lines of credit as sources and one executive replied that his firm used funds from the company's pension fund. Using short-term funds to acquire long-term assets can be extremely risky. If the property does not generate cash quickly enough, the company may have great difficulty repaying the short-term funds. Approximately 6% of the executives have used commercial paper or bank loans to purchase real estate, which is counter to the principle in corporate finance that the maturities of the sources of financing and the assets should match.

Financing, Industry and Company Size

Exhibits 3 and 4 contain the cross-tabulations of the financing methods by industry category and company size. The sample was divided into six industry categories: manufacturing, retail, financial services, development (land and hotel development), telecommunications (telephone and related companies) and other (including companies in wholesale, distribution, child care, public utility, and broadcasting industries). Companies were classified into six size groups: extremely small (less than \$50 million in assets), very small (\$50–\$100 million in assets), small (\$101–\$250 million in assets), medium (\$251–500 million in assets), large (\$501 million–\$1 billion in assets), and extremely large (over \$1 billion in assets). One-way analysis of variance was performed to determine if there were significant differences in the financing methods employed by industry and company size. Tests were performed at the 5% level of significance.

Exhibit 3
Cross-Tabulation of Financing Methods and Industry

| Type of Financing | Industry | Manufacturing | Retail | Financial Services | Development | Telecommunications | Other |
|------------------------|----------|---------------|--------|--------------------|-------------|--------------------|-------|
| First Mortgage | Yes | 25 | 13 | 11 | 26 | 5 | 9* |
| | No | 49 | 30 | 11 | 8 | 10 | 21 |
| Retained Earnings | Yes | 36 | 13 | 10 | 5 | 5 | 6* |
| | No | 38 | 30 | 12 | 29 | 10 | 24 |
| Operating Cash Flow | Yes | 55 | 28 | 15 | 16 | 7 | 16 |
| | No | 19 | 15 | 7 | 18 | 8 | 14 |
| Issue Common Stock | Yes | 4 | 2 | 1 | 1 | 0 | 1 |
| | No | 70 | 41 | 21 | 33 | 15 | 29 |
| Issue Mortgage Bonds | Yes | 7 | 2 | 0 | 2 | 0 | 4 |
| | No | 67 | 41 | 22 | 32 | 15 | 26 |
| Issue Preferred Stock | Yes | 1 | 0 | 1 | 0 | 0 | 0 |
| | No | 73 | 43 | 21 | 34 | 15 | 30 |
| Issue Unsecured Bonds | Yes | 4 | 0 | 0 | 0 | 1 | 0 |
| | No | 70 | 43 | 22 | 34 | 14 | 30 |
| Issue Commercial Paper | Yes | 3 | 2 | 3 | 1 | 0 | 1 |
| | No | 71 | 41 | 19 | 33 | 15 | 29 |
| Long-term Leasing | Yes | 24 | 22 | 9 | 9 | 6 | 8 |
| | No | 50 | 21 | 13 | 25 | 9 | 22 |
| Sale/Leaseback | Yes | 16 | 12 | 8 | 8 | 6 | 4 |
| | No | 58 | 31 | 14 | 26 | 9 | 26 |
| Joint Ventures | Yes | 14 | 6 | 6 | 14 | 8 | 4 |
| | No | 60 | 37 | 16 | 20 | 7 | 26 |
| Miscellaneous Methods | Yes | 7 | 6 | 0 | 2 | 0 | 7 |
| | No | 67 | 37 | 22 | 32 | 15 | 23 |

*significant at the 5% level

Looking at Exhibit 3 there are significant differences among industry groups and the use of retained earnings and first mortgages. The development industry is more likely to use first mortgages secured by the acquired property than either the manufacturing, retail or the other categories. Given the nature of the development industry, this is not unexpected. Real estate firms can be expected to rely on mortgage financing more than other kinds of companies. For the use of retained earnings, manufacturing companies are more likely than development companies to use this source of funding. The other industry groups and types of financing were not found to be significant at the 5% level.

Exhibit 4 reveals the results of the statistical tests on company size and sources of funding for real estate acquisitions. The only source that was significant was the use of

Exhibit 4
Cross-Tabulation of Financing Methods and Company Size

| Type of Financing | Company Size | Under \$50 Million | \$50-\$100 Million | \$101-\$250 Million | \$251-\$500 Million | 500 Million-\$1 Billion | Over \$1 Billion |
|------------------------|--------------|--------------------|--------------------|---------------------|---------------------|-------------------------|------------------|
| First Mortgage | Yes | 14 | 12 | 13 | 9 | 9 | 29* |
| | No | 7 | 1 | 4 | 12 | 16 | 83 |
| Retained Earnings | Yes | 3 | 3 | 7 | 8 | 5 | 47 |
| | No | 18 | 9 | 10 | 13 | 20 | 65 |
| Operating Cash Flow | Yes | 11 | 7 | 9 | 10 | 19 | 78 |
| | No | 10 | 6 | 8 | 11 | 6 | 34 |
| Issue Common Stock | Yes | 0 | 1 | 1 | 1 | 1 | 5 |
| | No | 21 | 12 | 16 | 20 | 24 | 107 |
| Issue Mortgage Bonds | Yes | 1 | 1 | 1 | 2 | 3 | 6 |
| | No | 20 | 12 | 16 | 19 | 22 | 106 |
| Issue Preferred Stock | Yes | 0 | 0 | 0 | 0 | 0 | 2 |
| | No | 21 | 13 | 17 | 21 | 25 | 110 |
| Issue Unsecured Bonds | Yes | 0 | 0 | 0 | 0 | 1 | 4 |
| | No | 21 | 13 | 17 | 21 | 24 | 108 |
| Issue Commercial Paper | Yes | 0 | 0 | 0 | 1 | 4 | 5 |
| | No | 21 | 13 | 17 | 20 | 21 | 107 |
| Long-term Leasing | Yes | 5 | 4 | 7 | 10 | 7 | 42 |
| | No | 16 | 9 | 10 | 11 | 18 | 70 |
| Sale/Leaseback | Yes | 5 | 4 | 6 | 7 | 0 | 30 |
| | No | 16 | 9 | 11 | 14 | 25 | 82 |
| Joint Ventures | Yes | 6 | 5 | 5 | 3 | 3 | 28 |
| | No | 15 | 8 | 12 | 18 | 22 | 84 |
| Miscellaneous Methods | Yes | 3 | 1 | 1 | 2 | 4 | 10 |
| | No | 18 | 12 | 16 | 19 | 21 | 102 |

*significant at the 5% level

first mortgages. Extremely large companies are less likely to use first mortgages than small firms (those in the extremely small, very small and small groups). Also, large companies are less likely to use first mortgages than very small firms.

Leasing

The second area of concern in the survey was the use and analysis of leasing by corporate executives. Exhibits 5 through 10 display the responses regarding leasing. Exhibit 5 contains the frequency of leasing by the respondents. Panel A shows that 91.2% of the executives have leased real estate for their firms. Panel B shows the

Exhibit 5 Use of Leasing by Respondents

| | Percentage of Responses |
|--|-------------------------|
| A. Leasing of Real Estate | |
| Yes | 91.2 |
| No | 8.8 |
| | 100.0 |
| B. Percentage of Real Estate Leased | |
| 0 - 25% | 34.0 |
| 26- 50% | 26.6 |
| 51- 75% | 18.1 |
| 76-100% | 21.3 |
| | 100.0 |

percentage of real property that has been leased. The largest proportion of firms (34%) have leased up to 25% of the firm's real estate. The frequency of leasing is fairly evenly distributed, with the most common proportion of property leased being less than 25% of all real estate held by the companies. Leasing has become a common method employed by managers to acquire at least some of their firm's real property. This is not surprising given the greater emphasis on the efficient management of real estate within the past several years.

The managers were asked what they considered to be the benefits of leasing; the results are shown in Exhibit 6. The most common benefit cited was the conservation of cash

Exhibit 6 Benefits of Leasing Real Estate

| | Percentage of Responses* |
|--|--------------------------|
| Tax Deductibility of Lease Payments | 55.0 |
| Conservation of Cash | 64.4 |
| Lower Financing Costs (relative to debt) | 23.6 |
| Easier Financing Terms | 11.0 |
| Provides Off-Balance Sheet Financing | 34.6 |
| Other: | 31.9 |
| Cost Effective on Small Properties | |
| Flexibility in Operations, Management and Location | |
| Must Lease--Owner Will Not Sell | |
| Allows a Variety of Properties to be Used | |
| Lower Operating Costs | |
| Easier Acquisition and Disposition of Properties | |
| Better Located Properties can be Secured | |
| Less Expensive Than Construction Costs | |
| Improved Control of Company Operational Growth | |
| Politics of Situation Requires Leasing | |
| Properties "Brought on Line" Faster | |
| Less Cash Put into Property, More Put into Production. | |

*Responses do not add to 100% because more than one response per company was allowed.

(64.4%). The second most common benefit is the tax benefits of leasing (55%). The ability to leave leases off the balance sheet was cited by 34.6%. Following accounting standards, operating leases do not have to be capitalized and shown on the balance sheets [6, pp. 616–17]. Financial leases, however, must be capitalized. In citing advantages of leasing, many finance textbooks mention the ability to leave lease costs off the balance sheet as an important attraction of asset leasing. The conservation of cash may be a commonly perceived benefit, but may not be realized in practice. As stated by Brealey and Myers [3, pp. 638], capital may also be preserved by borrowing, and leasing may not be particularly advantageous, in terms of costs to the firm. Whether this benefit corresponds to reality is unknown and was not examined in this survey.

Of the executives responding, 31.9% specified other benefits of leasing, as listed in Exhibit 6. The most common miscellaneous benefits include flexibility in the management of assets, leasing being necessary (mainly because some property owners would not sell to the firms), ease of acquisition and disposition of the assets, being able to have properties become productive quickly, and properties with superior location can be secured more easily than through purchasing. One interesting response was stated as the need to lease because of political reasons. Another reason stated was the ability to maximize the value of the real property owned by the firm. Whether the property values are truly maximized is problematical.

Exhibit 7 displays the responses regarding some characteristics of the leases used. Panel A shows how the leases have been structured. Approximately 52% create the leases as operating leases only, 4% use financial leases exclusively while 44% structure the leases as both types. These results correspond to the cited benefit of off-balance sheet financing of operating leases. As shown in Panel B of Exhibit 5, only 13% have taken out mortgages with leases as collateral. With greater corporate concern about property values, takeovers and such, we wanted to determine the frequency of lease mortgaging by companies. Though few firms do borrow against the leases held, the securing of funds in this manner was more common than we expected. Panel C of Exhibit 7 shows the proportions of leases that have been mortgaged. Of those who have used this form of financing a large majority (72.8%) have done so on a small percentage of their properties (between zero and 20% of the corporate real estate). However, about 13% have mortgaged as least 76% of their leases. Firms seem to either mortgage a few leases or a large majority.

The executives were asked if the leases contain options to purchase and whether the options were exercised. Panels D, E, and F of Exhibit 7 contain the frequencies. From Panel D, 86.7% of the respondents have leases with options to buy and (from Panel E) 66% have exercised the options. Approximately 61% of the managers specified that 25% or less of the options were exercised. 13.3% said about 26%–50% of the purchase options were exercised and 17.7% said that over 75% of the options were exercised. From these results, a significant majority of leases have options to buy and are exercised. However, while many firms have used purchase options in leases, most of the executives take advantage of the options on only a few properties. Most leases expire without the options being exercised. A possible advantage of including purchase options may be to increase the flexibility to buy the property if conditions warrant; flexibility being an advantage of leasing cited fairly often by the executives.

The quantitative methods employed by managers to evaluate lease versus purchase decisions are shown in Exhibit 8. In finance, the theoretically preferred method is the net

Exhibit 7 Characteristics of Leases

| | Percentage of Responses |
|---|-------------------------|
| A. Structure of Leases | |
| Operating Leases | 51.8 |
| Financial Leases | 4.1 |
| Both | 44.1 |
| | 100.0 |
| B. Mortgaging of Lease | |
| Yes | 13.3 |
| No | 86.7 |
| | 100.0 |
| C. Percentage of Leases Mortgaged | |
| 0 - 20% | 72.8 |
| 21- 50% | 9.1 |
| 51- 75% | 4.5 |
| 76-100% | 13.6 |
| | 100.0 |
| D. Do Leases Contain Options to Buy? | |
| Yes | 86.7 |
| No | 13.3 |
| | 100.0 |
| E. Are Lease Options Exercised? | |
| Yes | 66.3 |
| No | 33.7 |
| | 100.0 |
| F. Percentage of Options Exercised | |
| 0 - 25% | 60.8 |
| 26- 50% | 13.3 |
| 51- 75% | 8.2 |
| 76-100% | 17.7 |
| | 100.0 |

advantage to leasing where the present value of the leasing cost is compared to the present value of the costs of owning. The difference in the present values is the net advantage to leasing and if positive, the assets should be leased; otherwise, purchase [4, pp. 484-86]. An alternative approach is to calculate the internal rate of return implied in the lease agreement [4, pp. 487-88].

From Exhibit 8, 82.1% do use the net advantage to leasing, while 60.8% compare undiscounted cash flows from leasing and buying the property and 35.4% compare the net income of the property under each alternative. Use of net income, though, is the least preferable criterion, especially for real estate. Even though properties acquired will influence the firm's accounting income, real estate generates cash to the firm and should

Exhibit 8

Analytical Methods Used to Evaluate Lease Versus Buy Decisions

| | Percentage of Responses* |
|--|--------------------------|
| Net Advantage to Leasing | 82.1 |
| Comparison of Cash Flows—Leasing vs. Buying | 60.8 |
| Comparison of Net Income—Leasing vs. Buying | 35.4 |
| Other: | 18.5 |
| Return on Investment | |
| Space Size | |
| Internal Rate of Return on Asset | |
| Decision Based on Corporate Strategic Planning | |
| Expected Holding Period | |
| Five-year Estimation of Price Appreciation | |
| Salvage Value of Asset | |
| Reproduction Costs | |
| Lease Cost Compared to Mortgage Cost | |
| Payment Period | |
| Net Present Value of Asset | |
| Decision Made on Case-by-Case Consideration | |

*Responses do not add to 100% because more than one response per company was allowed.

be evaluated on that basis. The selection of leasing or buying can be different depending on whether accounting income or cash flow is used in the evaluation process and use of net income may lead to an inappropriate decision. The most commonly mentioned miscellaneous criteria were return on investment (ROI), internal rate of return, net present value of the asset and return on the asset (ROA). ROI and ROA are accounting-based criteria, which again are not appropriate for cash generating real estate. Several managers specified qualitative measures such as space needed by the firm, needs related to strategic planning and the expected holding period. One manager said the decisions were made on the individual merits of the property. Many managers do use individual subjective measures to choose between leasing or buying properties. What is not known is the success rate of such choices.

The discount rate estimation methods are listed in Exhibit 9. The most common method used is the weighted average cost of capital (34.4%) and the second most common measure is the after-tax cost of debt. In corporate finance the appropriate discount rate to be used is the after-tax cost of debt used to finance the purchase. However, most corporate finance examples are concerned with the leasing of equipment rather than real estate. Nourse [11, p. 119] and Weingartner [15] advocate the use of the weighted average cost of capital as the discount rate, since there are no empirical techniques for real estate, particularly in regard to risk levels associated with leasing. What is generally accepted in finance is that the discount rate should reflect the riskiness of the cash flows with leasing or buying the asset. Without further theoretical development managers have little guide as to the appropriate method to estimate the discount rate. But, if the incorrect discount rate is applied, the choice made between leasing or buying may be wrong. As a consequence, the cash flows and value of the firm may be adversely affected. Which approach is appropriate for real estate is problematical. Given this circumstance, 58% of the executives do use one or both of the two measures

Exhibit 9

Methods Used to Estimate Discount Rate in Lease Evaluation

| | Percentage of Responses* |
|--|--------------------------|
| Before-Tax Cost of Debt | 17.1 |
| After-Tax Cost of Debt | 24.4 |
| Weighted Average Cost of Capital | 34.4 |
| Rate of Return on New Investments | 14.6 |
| Rate of Return on Previous Investments | 3.0 |
| Other: | 6.7 |
| Internal Rate of Return | |
| Risk-adjusted Weighted Average Cost of Capital | |
| Cost of Debt Plus a Consistent Factor | |
| Yield of Treasury Notes | |
| Return on Assets | |

*Responses do not add to 100% because more than one response per company was allowed.

advocated by academicians. Of other discount rates used, 14.6% use the return on new investments as the discount rate and 17.1% use the before-tax cost of debt. Other measures that were specified were the internal rate of return, return on assets and yield on Treasury notes. One manager applied a risk-adjusted weighted average cost of capital (WACC), but did not specify how the WACC was adjusted. Another had an interesting way of computing the discount rate. The manager stated that the discount rate used was the cost of debt plus a "consistent factor". He did not specify what was meant by a "consistent factor".

Exhibit 10 contains the responses concerning the process of evaluating leasing or purchasing decision. Generally, the lease versus purchase decision is a choice between financing alternatives. Theoretically, managers should perform the capital budgeting decision first; if the asset is worth acquiring, then the manager should either purchase the asset (financed by debt) or lease it. From Exhibit 10, 62.4% do evaluate the acquisition first and then make the leasing decision. However, a sizable minority (37.6%) do not. These managers may be combining the acquisition and financing decision which may lead to incorrect selections. O'Brien and Nunnally [13, p. 33] found that a majority of their sample treated the leasing and buying decision as a capital budgeting decision,

Exhibit 10

Acquisition and Leasing Decisions

| | Percentage of Responses |
|--|-------------------------|
| Do You Evaluate the Acquisition Decision before Evaluating the Leasing or Buying Decision? | |
| Yes | 62.4 |
| No | 37.6 |
| | 100.0 |

which is similar to the findings of Anderson and Martin [1]. By comparison, real estate executives more often approach the leasing decision as a financing choice and correctly separate the financing and capital budgeting decisions.

Sale-Leaseback Financing

The third concern of the survey was the use of sale-leaseback arrangements by managers. Exhibit 11 displays the results concerning the use and characteristics of sale-leaseback financing.

A large minority of managers in the sample (48.6) have used sale-leasebacks, as shown in Panel A of Exhibit 11. In Panel B, 87.9% have used sale-leasebacks on 20% or fewer of their corporate properties, with only 1.2% using the technique on more than 60% of their firms' properties. Sale-leasebacks have been used by almost one-half of the managers, but only on a small proportion of properties. In structuring the leases, as shown in Panel C, 40% are created as operating leases, 16% as financial leases only and 44% of the managers created sale-leasebacks both as operating and financial leases. Overall, these results correspond to the structuring of leases generally; however, more sale-leasebacks are structured as financial leases compared to ordinary leases.

Exhibit 12 contains the responses concerning the perceived benefits of sale-leasebacks. The most commonly specified benefits are: (1) provides funds for expansion of operations, 69.3%; (2) provides funds for working capital, 54.5%; (3) reduces the need for debt financing, 40.6%; (4) tax advantages of leasing, 35.6%; and (5) provides off-balance sheet financing, 32.7%. An interesting finding is that 23.5% of the managers

Exhibit 11 Use and Structuring of Sale-Leaseback Arrangements

| | Percentage of Responses |
|---|-------------------------|
| <hr/> | |
| A. Use of Sale-Leaseback in Real Estate | |
| Yes | 48.6 |
| No | 51.4 |
| | 100.0 |
| B. Percentage of Real Estate Financed by Sale-Leasebacks | |
| 0 – 20% | 87.9 |
| 21– 40% | 6.6 |
| 41– 50% | 4.3 |
| Over 60% | 1.2 |
| | 100.0 |
| C. Structure of Sale-Leasebacks | |
| Operating Leases | 40.0 |
| Financial Leases | 16.0 |
| Both | 44.0 |
| | 100.0 |
| <hr/> | |

Exhibit 12 Benefits of Sale-Leaseback Arrangements

| | Percentage of Responses* |
|---|--------------------------|
| Provides Funds for Expansion | 69.3 |
| Provides Funds for Working Capital | 54.5 |
| Less Need for Debt Financing | 40.6 |
| Tax Advantages | 35.6 |
| Easier Management of Real Estate | 10.9 |
| Provides Off-Balance Sheet Financing | 32.7 |
| Provides Funds to Improve EPS | 23.5 |
| Provides Funds to Purchase Firm's Common Stock | 7.9 |
| Other: | 14.9 |
| Flexibility | |
| Easier Asset Management | |
| Provides Capital Gains to Offset Capital Losses | |
| Provides Temporary Facilities until New Properties are Completed | |
| Provides Desired Profit | |
| Less Costly Than Conventional Leasing | |
| Only Way to Acquire Property | |
| Improves Operating Efficiency | |
| Convenience (Especially for Disposition of Assets) | |
| Higher Return on Asset and Return on Investment | |

*Responses do not add to 100% because more than one response per company was allowed.

have used sale-leasebacks to help improve their firms' earnings per share. With common stock publicly held and companies publicly watched, there has been a great emphasis by senior managers on the quality and trend of earnings per share to avoid depressing the value of their firms' shares. The response does coincide with this concern. Approximately 15% cited other advantages, such as: flexibility in operations, provision of capital gains, provision of a desired level of profit, improved operating efficiency, higher returns on assets and investments, and faster payback of the property cost. Worth noting is that several of these advantages are accounting, rather than cash flow, related: impact on EPS, profit, return on assets and return on investments. Another response worth noting is that almost 8% of the sample have used sale-leasebacks to provide funds to buy back some of their firms' common stock, which is a defensive move against possible unwanted takeovers. For some firms sale-leasebacks can be added to the list of anti-takeover manoeuvres available to existing management.

The analytical methods used to evaluate sale-leaseback decisions are listed in Exhibit 13. The most common method used, by 68.8% of the executives, is the comparison of the present values of the costs of and the cash inflows from sale-leasebacks. Analysis of the undiscounted cash flows is used by 45.6%, while 31.2% use net income from the sale-leaseback to make the decision. Other techniques (such as return on the asset involved) were used by 8.6% of the managers. Most of the miscellaneous criteria cited are qualitative: business factors and company policy. Numerical criteria included rental rates, sale price of the property and the after-tax proceeds from the sale. For the most part, real estate executives tend to apply the more quantitatively sophisticated analytical techniques to evaluate sale-leaseback arrangements. Almost one-half look at cash flows

Exhibit 13

Analytical Methods Used to Evaluate Sale-Leasebacks

| | Percentage of Responses* |
|---|--------------------------|
| Cash Flow from the Sale-Leaseback | 45.6 |
| Comparison of Present Values of Proceed and Costs | 68.8 |
| Estimation of Net Income from Sale-Leaseback | 31.2 |
| Other: | 8.6 |
| Variety of Business Factors (unspecified) | |
| Sales Price versus Lease Price | |
| Long-term Rental Rate | |
| Company Policy | |
| Impact of Taxes on Sales Proceeds | |
| Return on Asset | |

*Responses do not add to 100% because more than one response per company was allowed.

from the arrangements in making their decisions. However, a substantial minority use accounting income as the decision variable. Net income underestimates the cash productivity of properties by the amount of the depreciation and as for leasing decision generally, it is the least preferable decision criterion.

Finally, Exhibit 14 contains information on the use of tax-deferred exchanges of corporate real estate. Panel A shows that approximately 39% of the managers have exchanged properties, and from Panel B, almost 90% have used exchanges on less than 25% of their firm's real estate. Tax-deferred exchanges are a complex and sophisticated procedure and a minority of firms have taken advantage of property exchanges. It is noteworthy that even though few of the managers have exchanged properties, it is a fairly large minority. The use of exchange was more common than we expected, though when used it accounts for only a small portion of the real property of the firms.

Exhibit 14

Tax-Deferred Exchange of Corporate Real Estate

| | Percentage of Responses |
|--|-------------------------|
| A. Has Firm Used Tax-Deferred Exchanges? | |
| Yes | 39.1 |
| No | 60.9 |
| | 100.0 |
| B. Percentage of Property Transferred through Tax-Deferred Exchanges | |
| 0 - 25% | 89.6 |
| 26- 50% | 9.1 |
| 51- 75% | 0.0 |
| 76-100% | 1.3 |
| | 100.0 |

Leasing, Industry and Company Size

Exhibits 15 through 20 contain the cross-tabulations of leasing characteristics by industry group and company size. Referring to Exhibit 15 there are significant differences between industry groups and the use of leasing, mortgaging leases and the use of sale/leasebacks. Manufacturing, retail, financial services and telecommunications are more likely to lease real estate than companies in the development industry.

Exhibit 15
Cross-Tabulation of Characteristics of Leasing and Industry

| Characteristics | Industry | Manufacturing | Retail | Financial Services | Develop-ment | Telecommuni-cations | Other |
|-------------------------------|----------|---------------|--------|--------------------|--------------|---------------------|-------|
| Lease Real Estate | Yes | 71 | 42 | 27 | 19 | 15 | 28* |
| | No | 2 | 1 | 0 | 14 | 0 | 2 |
| Mortgage Leases | Yes | 7 | 7 | 1 | 8 | 1 | 2* |
| | No | 64 | 34 | 20 | 13 | 14 | 24 |
| Option to Buy in Leases | Yes | 65 | 35 | 19 | 16 | 12 | 23 |
| | No | 7 | 7 | 3 | 3 | 3 | 3 |
| Use of Sale/Leaseback | Yes | 38 | 29 | 13 | 9 | 6 | 8* |
| | No | 36 | 13 | 8 | 25 | 9 | 18 |
| Use of Tax-Deferred Exchanges | Yes | 31 | 14 | 3 | 15 | 3 | 15 |
| | No | 40 | 27 | 18 | 17 | 11 | 13 |

*significant at the 5% level

Exhibit 16
Cross-Tabulation of Characteristics of Leasing and Company Size

| Characteristic | Company Size | Under \$50 Million | \$50-\$100 Million | \$101-\$250 Million | \$251-\$500 Million | \$501 Million-\$1 Billion | Over \$1 Billion |
|-------------------------------|--------------|--------------------|--------------------|---------------------|---------------------|---------------------------|------------------|
| Lease Real Estate | Yes | 11 | 13 | 13 | 19 | 24 | 108* |
| | No | 9 | 0 | 4 | 2 | 1 | 3 |
| Mortgage Leases | Yes | 3 | 5 | 0 | 2 | 2 | 13 |
| | No | 7 | 8 | 13 | 17 | 23 | 93 |
| Option to Buy in Leases | Yes | 6 | 10 | 11 | 16 | 22 | 99 |
| | No | 3 | 3 | 2 | 3 | 2 | 10 |
| Use of Sale/Leaseback | Yes | 4 | 5 | 9 | 13 | 7 | 62 |
| | No | 15 | 8 | 8 | 8 | 17 | 47 |
| Use of Tax-Deferred Exchanges | Yes | 4 | 5 | 6 | 3 | 11 | 48 |
| | No | 14 | 7 | 10 | 18 | 14 | 59 |

*significant at the 5% level

Manufacturing firms are less likely to use a lease as security for a mortgage than development companies. Also, retail companies are more likely to use sale/leasebacks than development firms. For the other industry groups and leasing characteristics, the tests were not significant at the 5% level.

Turning to Exhibit 16 the only leasing characteristic found to be significant at the 5% level was the leasing of real estate. Very small, small, large and very large companies are likely to lease real estate compared to the extremely small companies. That is, companies with assets of less than \$50 million tend not to lease real estate compared to firms with assets greater than \$50 million.

Exhibit 17

Cross-Tabulation of Leasing vs. Buying Evaluation Methods and Industry

| Methods | Company Size | Industry | | | | | |
|--------------------------------|--------------|---------------|--------|--------------------|--------------|---------------------|-------|
| | | Manufacturing | Retail | Financial Services | Develop-ment | Telecommuni-cations | Other |
| Net Advantage to Leasing (NAL) | Yes | 62 | 26 | 18 | 13 | 14 | 23 |
| | No | 9 | 13 | 4 | 4 | 1 | 3 |
| Undiscounted Cash Flow | Yes | 46 | 23 | 10 | 14 | 11 | 11 |
| | No | 25 | 16 | 12 | 3 | 4 | 14 |
| Net Income Comparison | Yes | 24 | 12 | 10 | 11 | 5 | 5 |
| | No | 47 | 27 | 12 | 6 | 10 | 20 |
| Other | Yes | 10 | 9 | 3 | 5 | 0 | 8 |
| | No | 61 | 30 | 19 | 12 | 15 | 17 |

Exhibit 18

Cross-Tabulation of Leasing vs. Buying Evaluation Methods and Company Size

| Methods | Company Size | Company Size | | | | | |
|--------------------------------|--------------|--------------------|--------------------|---------------------|---------------------|---------------------------|------------------|
| | | Under \$50 Million | \$50-\$100 Million | \$101-\$250 Million | \$251-\$500 Million | \$501 Million-\$1 Billion | Over \$1 Billion |
| Net Advantage to Leasing (NAL) | Yes | 8 | 9 | 11 | 13 | 17 | 93 |
| | No | 1 | 4 | 1 | 5 | 7 | 14 |
| Undiscounted Cash Flow | Yes | 9 | 8 | 8 | 8 | 14 | 64 |
| | No | 0 | 5 | 4 | 10 | 10 | 42 |
| Net Income Comparison | Yes | 6 | 7 | 7 | 5 | 6 | 33 |
| | No | 3 | 6 | 5 | 13 | 18 | 73 |
| Other | Yes | 2 | 3 | 0 | 3 | 6 | 20 |
| | No | 7 | 10 | 12 | 15 | 18 | 88 |

Exhibit 19
Cross-Tabulation of Sale/Leaseback Evaluation Methods and Industry

| Methods | Company Size | Manufacturing | Retail | Financial Services | Development | Telecommunications | Other |
|---------------------------------------|--------------|---------------|--------|--------------------|-------------|--------------------|-------|
| Comparison of Present Values | Yes | 25 | 13 | 9 | 3 | 6 | 8 |
| | No | 8 | 10 | 3 | 7 | 1 | 0 |
| Comparison of Net Income | Yes | 10 | 4 | 8 | 2 | 3 | 2 |
| | No | 23 | 19 | 4 | 8 | 4 | 6 |
| Comparison of Undiscounted Cash Flows | Yes | 15 | 9 | 7 | 4 | 3 | 4 |
| | No | 18 | 14 | 5 | 6 | 4 | 4 |
| Other | Yes | 1 | 4 | 1 | 2 | 0 | 0 |
| | No | 32 | 19 | 11 | 8 | 7 | 8 |

Exhibit 20
Cross-Tabulation of Sale/Leaseback Evaluation Methods and Company Size

| Methods | Company Size | Under \$50 Million | \$50-\$100 Million | \$101-\$250 Million | \$251-\$500 Million | \$501 Million-\$1 Billion | Over \$1 Billion |
|---------------------------------------|--------------|--------------------|--------------------|---------------------|---------------------|---------------------------|------------------|
| Comparison of Present Values | Yes | 2 | 4 | 5 | 4 | 4 | 43 |
| | No | 3 | 2 | 3 | 6 | 3 | 17 |
| Comparison of Net Income | Yes | 2 | 0 | 2 | 5 | 3 | 16 |
| | No | 3 | 6 | 6 | 5 | 4 | 39 |
| Comparison of Undiscounted Cash Flows | Yes | 1 | 4 | 5 | 4 | 4 | 22 |
| | No | 4 | 2 | 3 | 6 | 3 | 33 |
| Other | Yes | 2 | 1 | 1 | 3 | 0 | 1 |
| | No | 3 | 5 | 7 | 7 | 7 | 54 |

Summary and Conclusions

The results of this survey provides a number of insights into the financing techniques and sources used by corporate managers to acquire real estate for their firms. The primary source of funds for acquiring real estate is internally generated cash flow rather than external sources. Interestingly, a few firms use short-term debt through commercial paper or commercial bank credit lines as one possible source. Undetermined in this survey is whether the use of short-term debt is a temporary source or is used on a regular basis. Since real estate may not generate the needed cash flows quickly enough to repay the debt, firms using bank credit lines and commercial paper are taking a large risk in not being able to repay the obligations.

Leasing, in general, is an extremely common form of financing. The major advantages are the ability to conserve cash, the tax deductibility of the lease payments, leases being

an off-balance sheet form of financing and the flexibility leases permit in the operations of the companies and the needs of the managers. Several managers cited leasing as the only alternative available to secure a property when the owner refuses to sell.

Most of the managers calculate the net advantage to leasing to choose between leasing or purchasing the assets. Real estate executives are relatively sophisticated in the decisionmaking techniques employed to evaluate financing alternatives. However, quite a few also rely on less appropriate accounting criteria, standard capital budgeting criteria and miscellaneous numerical benchmarks to make leasing decisions.

In estimating the discount rate to determine the net advantage to leasing, managers use a variety of measures. Managers tend to use the discount rate advocated by Nourse [11] and others instead of the after-tax cost applied in corporate finance textbooks. However, many executives do use questionable measures of discount rates such as Treasury note yields and return on assets.

Compared to the surveys conducted by Anderson and Martin [1] and O'Brien and Nunnally [13], real estate executives, for the most part, separate the capital budgeting and asset financing decisions as specified in corporate finance theory. A large minority, however, may combine the investment selection and financing decisions, which theoretically may lead to incorrect decisions.

Use of sale-leasebacks are fairly evenly split among the companies. The most frequently cited advantage of sale-leasebacks is the ability to use the funds for company expansion of working capital needs. Less important are the tax advantages and decreased need for debt financing. An interesting result is that almost 32% of the respondents have used the proceeds from sale-leasebacks to improve their firms' earnings per share and to purchase their company's common stock. For these firms, sale-leasebacks may be a way of enhancing the financial statements and stock market position to protect the management of the firm from negative stock market reaction to declining operating profits.

Based on the analysis of variance inter-industry differences were found in the use of first mortgages and retained earnings, with manufacturing companies more likely to use retained earnings and development firms more likely to use first mortgages. Also, development companies were less likely to lease real estate than manufacturing, financial services, retail and telecommunications companies. Retail companies are more likely to engage in sale/leasebacks than development companies. Analysis of variance in regard to company size revealed that billion dollar companies are less likely to use first mortgages than smaller firms. Also, businesses with assets valued at less than \$50 million are less likely to lease real estate than larger firms.

Overall, real estate executives tend to use the more sophisticated quantitative methods to evaluate the leasing and sale-leasebacks. For the most part managers do follow the techniques advocated in corporate finance theory. The financing of real estate is primarily derived from internal sources, rather than external, though some firms do use risky short-term financing to fund real estate acquisitions. The results of this survey point the way for future inquiry into the use of funds provided by sale-leasebacks, the improved financial management of real estate and the possible significance of real estate financing methods as tactics against hostile takeovers and the enhancement of corporate financial statements.

Appendix Questionnaire

1. Which of the following best describes your organization:

- a. Manufacturing
- b. Retail
- c. Financial services
- d. Commercial banking
- e. Public accounting
- f. Land development
- g. Real estate consulting
- h. Petroleum refining
- i. Hotel development
- j. Computer software development
- k. Telecommunications
- l. Other (please specify)

2. What is the approximate size of your firm, in book value of assets?

- a. Under \$50 million
- b. \$50–\$100 million
- c. \$101–\$250 million
- d. \$251–500 million
- e. \$501–\$1 billion
- f. Over \$1 billion

3. What is the approximate dollar value of new real estate investments your company has made within the last fiscal year?

- a. \$10 million or less
- b. \$11–\$49 million
- c. \$50–\$100 million
- d. Over \$100 million

4. How does your company finance the real estate it acquires?

(Check all that apply)

- a. Mortgages secured by the acquired property
- b. Retained earnings
- c. Cash flow from operations
- d. Mortgage bonds secured by the acquired property
- e. Sale of common stock
- f. Sale of preferred stock
- g. Sale of unsecured bonds
- h. Sale of commercial paper
- i. Long-term leasing
- j. Sale-leaseback arrangements

- k. Joint ventures
- l. Other (please specify)
-
-
-

5. Does your firm lease any real estate?
 Yes
 No (If your response is No, please skip to question 17)

6. Approximately what percentage of the company's real estate is leased?

7. What are the benefits of leasing real estate? (Check all that apply)
- a. Tax deductibility of lease payments
 - b. Conserving cash
 - c. Lowering cost of financing assets compared to debt financing
 - d. Easier terms than with conventional types of debt
 - e. Provides off-balance sheet financing
 - f. Other (please specify)
 -
 -

8. Have the leases been structured as
- a. Operating leases?
 - b. Financial leases?
 - c. Both operating and financial leases?

9. Has your company ever mortgaged a lease?
 Yes
 No

10. Approximately what percentage of the leases were mortgaged?

11. If you lease real estate, have any of the leases contained an option to buy the property?
 Yes
 No (If your response is No, please skip to question 14)

12. In leases with options to buy, were the options ever exercised?
 Yes
 No

13. Approximately what percentage of the purchase options in leases have been exercised?

14. What quantitative methods are used to evaluate the alternatives of leasing vs. buying real estate? (Check all that apply)

- a. Net present value of leasing versus buying
- b. Comparison of cash flows of leasing to the cash flows from buying
- c. Comparison of net income from leasing to net income from buying
- d. Other (please specify)
-
-

15. If you use a discounted cash flow method to decide whether to lease or buy real estate, how is the discount rate estimated?

- a. Before-tax cost of debt
- b. After-tax cost of debt
- c. Weighted average cost of capital
- d. Rate of return on new investments
- e. Rate of return on previous investments
- f. Other (please specify)
-
-

16. For properties that might be leased, do you evaluate the decision to acquire the property first and then evaluate the alternatives of leasing versus buying the property?

- Yes
- No

17. Has your company used sale-leaseback arrangements on any of its properties?

- Yes
- No

18. What percentage of your firm's real estate involved the use of sale-leasebacks?

.

19. What have been the advantages of using sale-leasebacks? (Check all that apply)

- a. Provides extra funds for expansion of operations
- b. Provides funds for working capital
- c. Less need for debt financing of the company's operations
- d. Tax advantages
- e. Makes the management of real estate easier
- f. Provides an off-balance sheet method of financing real estate
- g. Provides funds to improve earnings per share
- h. Provides funds to buy back some of the company's common stock
- i. Other (please specify)
-
-

- 20. What methods are used to evaluate whether a sale-leaseback arrangement should be used?
 - _____a. Cash flow from the sale-leaseback
 - _____b. Comparison of the present value of the proceeds from the sale with the present value of the costs of the sale-leaseback
 - _____c. Estimation of the net income from the sale of the property
 - _____d. Other (please specify)
 -
 -
 -

- 21. Have the sale-leasebacks been structured as
 - _____a. Operating leases?
 - _____b. Financial leases?
 - _____c. Both operating and financial leases?

- 22. Has your company used tax-deferred exchanges to acquire real estate?
 - _____Yes
 - _____No

- 23. If your answer to question 22 was Yes, approximately what percentage of your firm's real estate was acquired through tax-deferred exchanges?
-

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