

The Acquisition and Disposition of Real Estate by Corporate Executives: A Survey

*Arnold L. Redman**
*John R. Tanner**

Abstract. Rising property values as well as corporate restructuring have given real estate greater importance in corporate asset management. Previous research has examined the capital budgeting procedures of corporations and institutional investors for real estate. However, these studies have not examined both the capital budgeting and disposition criteria used by service, retail and manufacturing corporations for real estate. This study surveys the acquisition and disposition rules used by executives as well as the use of leasing. This survey covers the size of real estate investments, use of real property leasing, use of real estate sale/leaseback arrangements and the real estate asset acquisition and disposition criteria of corporations.

Introduction

In recent years, the management of real estate by corporations has become a topic of increasing importance. With the appreciation in value of industrial and commercial properties, in combination with leveraged buyouts and corporate takeovers, the productive use of real estate has been pushed to the forefront of asset management. As firms have increased debt loads, the acquisition, management and disposition of assets has taken on greater importance. Real estate assets need to be managed efficiently to produce greater firm value and cash flow.

Previous studies have examined the capital budgeting procedures of corporations regarding real estate assets. However, the studies have not covered the methods managers use to evaluate the decision to dispose of property. With the new merger environment, disposing of assets, whether real estate or entire divisions, has become more common. Executives make decisions using one of several criteria; but, which decision rules are used has not been examined in much detail. Given the magnitude of the real estate holdings of major corporations, the decision rules used to purchase and sell these assets are extremely important. Multi-million dollar decisions are being made daily and our understanding of the process of disposing of these assets is currently limited.

This study has been designed to fill in some of the unknowns about corporate real estate management. The basic purpose of the study is to examine the decision rules used by corporate executives in deciding whether to sell real estate assets. This study examines both the acquisition and disposition rules for real estate used by corporate executives. It

*Department of Finance and Management Information Systems, College of Business Administration, Western Kentucky University, Bowling Green, Kentucky 42101.
Date Revised—June 1989; Accepted—August 1989.

also updates some of the information on capital budgeting techniques examined by previous studies. This study expands current knowledge by concentrating on the rules used to sell assets. Little research has been done on this subject. Most previous work has been on the methods used to make decisions to buy and manage real estate. Few real estate articles or texts include material on the termination of real estate investments. For corporations, this phase is just as important as for an institution or individual investor. Assets may be disposed of for any of the following reasons: reduced operations, shut down of a part of a company's activities, insufficient need for properties, leveraged buyouts or corporate restructuring. Quality management requires value-maximizing decisions in the disposition of real estate assets as well as the acquisition of real property. This study is designed to address this concern, as well as add to the body of knowledge about how corporate real estate executives make their long-term real estate investment decisions.

The article is divided into four sections. The first is a review of the literature. The second section discusses the data, methodology and survey instrument used in the survey. The third section presents the results of the survey. Finally, section four will discuss the conclusions.

Literature Review

There have been several studies of the capital budgeting procedures used by financial institutions. Most of the previous research has concentrated on the investment analysis techniques used by institutional investors. A minority of the studies have examined the methods applied by decisionmakers in organizations that are not principally in real estate. Wiley [9] in the early 1970s conducted a study of the capital budgeting procedures used by REITs and insurance companies. More recently Page [5], Farragher [2], Webb [7] and, Webb and McIntosh [8] surveyed institutional investors and generally found that discounted cash flow methods were more commonly used to evaluate real estate investments than in the past. Webb's surveys included analysis of risk-adjustment methods, mortgage diversification strategies and construction loans of institutional investors. Page and Farragher examined the capital budgeting, financial analysis techniques and risk-adjustment methods applied by REITs, insurance companies and other organizations.

Other studies surveyed the investing practices of executives in manufacturing, service and retail companies. Farragher [1] surveyed corporate executives, as did McIntosh, Davidson and Albert [3] and Nourse and Kingery [4]. The surveys of Farragher and McIntosh, et al. covered the capital budgeting methods used and the characteristics of the sample companies. The focus was on the acquisition rules applied by firms. Nourse and Kingery took a different approach. Their survey of 2,176 members of the National Association of Corporate Real Estate Executives (NACORE), the Industrial Development Research Council (IDRC) and the American Institute of Corporate Asset Management (AICAM) dealt with the disposition of surplus real estate. The authors were testing the hypothesis that firms ignore opportunities to profitably dispose of properties. They found that firms tend to dispose of real estate as is, without modification or attempts at organized marketing. However, Nourse and Kingery did not look at quantitative methods used to evaluate whether properties should be disposed.

Data and Research Methodology

The data-gathering instrument consisted of a questionnaire that focused on the acquisition and disposition rules used by executives of companies whose principal business is not in real estate (a copy of the questionnaire can be obtained from the authors). The questionnaires were sent to five hundred members of the International Association of Corporate Real Estate Executives (NACORE) throughout the continental United States. The questionnaire was partly comparable to those used in previous studies [3, 7 and 8]. The questions covered four areas: (1) demographic questions on the type of firm, size of the firm and job position of the respondent, (2) acquisition-related questions on the use of leasing, capital budgeting rules, post-investment audits, and the existence of multiple rates of return, (3) disposition rules used and (4) the use of refinancing, sale/leaseback arrangements and property sales as cash generation methods for the firm.

Results

From the five hundred questionnaires sent, a total of ninety-two responses were received. This is a response rate of 18.4%, comparable to most studies. The distribution of responses was very wide; it included companies from across the U.S. and one firm from Puerto Rico.

As shown in Exhibit 1 (type of firm) most of the responses were from service firms (51%). Retail companies were the second largest source of responses (39%). Manufacturing companies provided the smallest responses (10%). The most common job position of the respondents was director of real estate (44.6%) with vice-president (31.5%) being the second most common position. General manager or corporate president were the third and fourth most common positions of the respondents (13% and 7.6% respectively). The positions held by our sample placed our respondents in good position to know closely which decision rules are used by their firms.

In terms of company size, the firms ranged from asset value of less than \$50 million to over \$1 billion. The largest response came from the over \$1 billion companies (40.2%), with firms between \$251 million and \$500 million (17.4%) and under \$50 million (15.2%) being the second and third largest categories.

As can be seen in Exhibit 1, the largest percentage (32.2%) of responses came from the Midwest. The Southwest was fairly well represented with 17.4% of the companies located there. Thus, the sample was fairly well balanced in terms of company size and regional location.

Exhibit 2 shows the dollar value of the real estate investments made each year. The distribution of responses was fairly even across the categories, from less than \$10 million in annual investment (28.6%) to investments of over \$100 million a year (30.8%).

Exhibit 3 contains the results concerning leasing. The respondents were asked whether their firms lease or buy real estate and other corporate assets. Exhibit 3A shows the percentage of respondents who lease real estate. Most corporations both lease as well as purchase real estate (61.8%). Eighteen percent lease all of their real estate, while 20.2% only buy assets. Many (35.2%) of the companies lease less than one-fourth of their total assets. However, a large percentage (28.1%) lease over three quarters of all their assets.

Exhibit 1 Demographic Data

	Percentage of Responses
<hr/>	
Type of Firm	
Service	51.0
Retail	39.0
Manufacturing	10.0
	100.0
Position of Respondent	
President	7.6
Vice-President	31.5
Director of Real Estate	44.6
Manager	13.0
Real Estate Representative	1.1
Partner	1.1
Other	1.1
	100.0
Size of Firm—Total Assets	
Under \$50 million	15.2
\$50–100 million	9.8
\$101–250 million	8.7
\$251–500 million	17.4
\$501 million–\$1 billion	8.7
Over \$1 billion	40.2
	100.0
Regional Location of Respondents	
Midwest	32.2
Pacific	10.9
New England	5.5
Middle Atlantic	13.1
Southeast	17.4
Mountain	3.5
Southwest	17.4
	100.0

Source: Authors' calculations

Over half of the sample, 53.1%, lease a majority of all their major assets—plant and equipment.

Capital Budgeting

Exhibits 4 through 10 show the results of the survey concerning the capital budgeting practices of the corporations sampled. Exhibit 4 contains the policies of the companies for exempting real estate projects from capital budgeting analysis, as well as their

Exhibit 2 Annual Investment in Real Estate

Value of New Real Estate Purchases— Annual Dollar Investment	Percent of Responses
Less than \$10 million	28.5
\$11–49 million	27.5
\$50–100 million	13.2
Over \$100 million	30.8
	100.0

Source: Authors' calculations

Exhibit 3 Leasing

	Percent of Responses
A. Lease versus Buying	
Lease	18.0
Buy	20.2
Both	61.8
	100.0
B. Percent of Real Estate Leased	
Less than 25%	25.2
26–50%	21.1
51–75%	21.3
Over 76%	32.4
	100.0
C. Percent of All Assets Leased	
Less than 25%	35.2
26–50%	11.7
51–75%	25.0
Over 76%	28.1
	100.0

Source: Authors' calculations

policies toward conducting post-investment audits. As shown in Exhibit 4A, a substantial majority (87.5%) do not exempt any real estate from some type of analysis. Of the 12.5% who exempt real estate, 50% exclude less than 25% of the projects. However, 30% of the respondents do exempt more than half of their real estate investments from a capital budgeting analysis.

A majority of the firms (62.8%) conduct a post-investment audit, while 37.2% do not. Over one-third of the firms do not perform a post-investment audit which is a critical

Exhibit 4 Capital Budgeting Review

	Percent of Responses
A. Exemption of Real Estate Assets	
Yes	12.5
No	87.5
	100.0
B. Percent of Real Estate Exempt	
Less than 25%	50.0
25-50%	20.0
50-100%	30.0
	100.0
C. Post Audit	
Yes	62.8
No	37.2
	100.0
D. Frequency of Post Audit	
Every six months	11.1
Once a year	55.6
Other	33.3
	100.0

Source: Authors' calculations

part of the evaluation of investments. Over one-half of the responding organizations (55.6%) conduct audits annually. Exhibit 5 contains other auditing frequencies which range from once a month (for two years) to once every five years. A couple of firms conduct audits immediately after the completion of the project. However, some of these firms are developers who are auditing the construction costs of property rather than annual performance results.

The questionnaire asked the respondents to describe the methods of post-investment auditing they used; the results are summarized in Exhibit 6. Many firms use either accounting audits or comparison of actual to expected (or pro forma) results. Other common methods are appraisals of properties and comparison of market value to "potential" value. Firms also use financial criteria, such as recalculation of net present value or some measure of return (such as cash flow to initial investment, return on investment or profit margin) to measure the performance of the real estate. Several firms use accounting information, such as sales or revenue and gross profit margins to evaluate the investments. Many respondents use, as part of their post-investment audits, accounting data and measures (such as budgets, and pro-forma income statements) to compare projected and actual performance of investments, rather than financial measures using cash flow data (such as return on investment, internal rate of return or

Exhibit 5

Frequency of Post-Investment Audit

1. Once a month, for 2 years
 2. For two or three years
 3. Randomly, when company audits records
 4. During the first year
 5. Quarterly
 6. Every five years
 7. Randomly
 8. All projects audited at completion
-

Source: Authors' calculations

Exhibit 6

Post-Investment Auditing Procedures

1. Accounting department audits results
 2. Actual results compared to projections
 3. Comparison of construction cost (dollar per square foot) compared to expected revenue (per square foot)
 4. Use of economic studies
 5. Post-investment NPV based on comparison of initial projection to actual development costs
 6. Actual versus budget amounts for: sales, gross profit margin and return on assets
 7. Comparison of property performance against property strategy and performance of all properties
 8. Confirmation of projected financial data and actual construction data to determine final construction figures
 9. Examination of development status and pro forma data compared to the expected time of completion
 10. Annual appraisal of properties—using appraisers from within firm or independent appraisers
 11. Current market value compared to potential value to determine whether to hold, develop or sell properties
 12. Cash flow divided by initial investment
 13. Projected data compared to budgeted amounts
 14. Productivity of site
 15. Measurement of return on investment and profit margins
-

Source: Authors' calculations

net present value). Discounted cash flow methods may be less frequently used to evaluate an investment after it is made, than during the initial analysis of projects. Also, it seems that appraising properties tends to be used, perhaps as a basis to gauge the appreciation in value, which, in turn, is used as the measure of investment performance.

Exhibit 7 contains the capital budgeting procedures used by the companies. The most common methods used are internal rate of return (68.9%) and net present value (63.3%). In this survey, NPV is almost as frequently used as the IRR method. From past surveys IRR was, by and large, the most commonly used method. The results from this survey indicate that executives have moved toward greater use of the NPV method, as is usually recommended in finance textbooks. The second most commonly used measures

Exhibit 7 Capital Budgeting Methods

	Percent of Responses
A. Method*	
Average Annual Rate of Return	43.3
Cash-on-Cash Return	40.0
Net Present Value	63.3
Internal Rate of Return	68.9
Financial Management Rate of Return	14.4
Modified Internal Rate of Return	12.2
Accounting Rate of Return	11.1
Other	6.7
B. Multiple Rates of Return	
Yes	19.4
No	80.6
	100.0
C. Frequency of Occurrence—Multiple Rates of Return	
Less than 10%	47.1
10–40%	29.4
41–99%	17.6
100%	5.9
	100.0
D. Discount Rate Estimation—Procedure Used	
Marginal Cost of Capital	16.7
Weighted Average Cost of Capital	33.3
Build-Up Method	3.3
Rate of Return on New Investments	15.0
Rate of Return on Previous Investments	3.3
Cost of Additional Borrowing	20.0
Other	8.4
	100.0

*Responses do not add to 100% since more than one response per company was allowed.
Source: Authors' calculations

were the average rate of return (43.3%) and cash-on-cash return (40%). This is not surprising since average return and cash-on-cash return are the more traditional measures used in the evaluation of real estate. Also worth noting is the fact that a number of respondents use adjusted IRR methods, such as the financial management rate of return (14.4%) and a modified IRR (12.2%). Overall, some type of IRR measure is commonly used by managers to evaluate real estate projects. In this survey, executives could specify several methods of evaluation. A large majority of companies (80.6%) do not encounter projects with multiple rates of return. However, 19.4% do. Of the firms experiencing multiple returns, 47.1% said that this occurs less than 10% of the time. The occurrence of multiple returns seems to be an occasional experience. Exhibit 8 contains

Exhibit 8

Procedures Used to Handle Multiple IRR

1. Use NPV and average return on investment
 2. Consensus of management
 3. "What if" analysis conducted to measure impact on IRR
 4. Use FMRR or modified IRR
 5. Look at qualities of the real estate—location, physical attributes
-

Source: Authors' calculations

the frequently mentioned methods that the respondents use to overcome this problem. Many use FMRR or MIRR, as expected. Others use another financial measure, such as NPV or an average return on investment. Some had listed qualitative procedures such as "what if" analyses (on IRR) and the qualities of the real estate. When confronted with multiple rates of return, which confuse the decisionmaking, it is not surprising that managers use some type of quality measure. Managers, when objective measures fail, use "gut" feelings, such as their opinions of the locational advantages, physical attributes of the properties or a consensus of the managers, to select the appropriate projects. Exhibit 9 shows some of the other evaluation methods used by managers. The most common

Exhibit 9

Miscellaneous Methods Used for Acquisition Evaluation

1. Capital gains expected
 2. Payback period of project
 3. Asset turnover, expected pre-tax profit
 4. Total cash generated by project
-

Source: Authors' calculations

one is the payback method. Companies also use expected capital gains, pre-tax profits, cash flow and asset turnover in evaluating real estate. The other methods are in line with the usual expected benefits of real estate: capital gains and cash flow. Firms may also be evaluating real estate on more than strict return criteria; they may look at appreciation and more importantly, the dollars of cash flow generated by properties.

Exhibits 7 and 10 contain the methods used to calculate the discount rate applied to real estate. The most common method is the weighted average cost of capital (33.3%). This method uses the cost of equity and debt, and any cash flow calculation would not include financing cost. This is the recommended procedure in corporate finance. The other frequently used methods are: marginal cost of capital (16.7%), return on new investment (15%) and the cost of additional borrowing (20%). The respondents may be using opportunity costs as a measure of discount rates. Exhibit 10 shows the other methods used. The more common measures of the discount rate include capitalization rates (of similar properties) and discount rates based on total debt and equity costs. One

Exhibit 10 Miscellaneous Methods Used to Estimate Discount Rate

1. Capitalization rates of similar investments
2. Credit of Tenants
3. Use 10% (because it is easy)
4. Hurdle rate based on long and short-term debt cost and stockholder equity return

Source: Authors' calculations

manager wrote that he uses a discount rate of 10%, because it is easy, though he admitted that it was unreliable. Overall, it seems that managers use the weighted average cost of capital (WACC) or estimates of opportunity costs (return on new investments or capitalization rates).

Exhibit 11 compares the capital budgeting criteria results of this study with previous studies. Cash-on-cash return was a commonly used criterion in the Webb [7], McIntosh [3], Webb and McIntosh [8] and this study. Use of net present value has increased from 7% in the Wiley study to 63% in this study. Internal rate of return has remained a popular method as an investment selection criterion. As other studies have concluded, institutions have used more sophisticated techniques to select real estate over the past sixteen years. Cash-on-cash return and payback period remain popular criteria. Other criteria, such as broker rate, tax shelter benefits, financial management rate and after-tax

Exhibit 11 Comparison of Acquisition Criteria

	Wiley	Farragher	Page	Webb & McIntosh	Webb	McIntosh et al.	Redman & Tanner
Average Annual Rate	NA	NA	NA	NA	NA	33	43
Cash-on-Cash	25*	31	NA	62	63	45	40
Net Present Value	7	56	20	28	48	58	63
Internal Rate of Return	18	56	50	42	65	79	68
Financial Management Ratio	NA	NA	11	NA	NA	12	14
Modified IRR	NA	NA	NA	NA	NA	18	12
Accounting Rate	NA	NA	NA	NA	NA	NA	11
Payback Period	8	34	11	26	26	45	0
After-tax Rate	NA	NA	17	NA	NA	NA	NA
After-tax Multiplier	NA	NA	14	NA	NA	NA	NA
Brokers Rate	12	NA	NA	19	21	NA	NA
Tax Shelter Benefit	18	NA	NA	28	46	NA	NA
Capitalization Rate	NA	NA	NA	NA	NA	39	NA
Gross Rent Multiplier	NA	2	NA	NA	NA	18	NA
Other	NA	29	5	NA	NA	30	6
None Used	46	NA	NA	19	29	NA	NA

*Percentages

NA = Not available

Source: Authors' calculations

rates are used, but not as commonly as the internal rate of return, cash-on-cash or net present value. The results of this study support those of past studies in revealing a general move toward criteria based on cash flow analysis.

Disposition Rules

This section of the questionnaire was designed to examine two aspects related to the disposition of real estate by corporate executives. The basic concern was to determine the methods used to make the decision to sell real estate assets. The real estate literature on disposition evaluation is very sparse (see [6], Chapter 17). Real estate investment texts cover methods of terminating investments, such as sales and tax-deferred exchanges. But little is known or specified about the procedures used to evaluate the decision to terminate a corporate real estate investment. The questionnaire specified some possible rules, but permitted respondents to specify other methods they might use. The decision rules listed in the questionnaire were, for the most part, the same as the usual capital budgeting rules. However, it was expected that since rules are generally unspecified, that managers would devise procedures on their own, in addition to, or instead of, those used in other circumstances.

Also of concern were the methods used by managers to "terminate" their investments in real estate. There are two motives for ending investments. One is to dispose of unneeded properties and the other is to raise cash for the firm. These motives do not have to be mutually exclusive. For cash, companies have several alternatives. The questionnaire asked executives whether they (1) sold assets, (2) refinanced properties or (3) use sale/leaseback arrangements. In general, we wanted to examine the sales evaluation methods applied and whether it was common to "terminate" real estate investments to generate cash for further corporate use.

Exhibits 12 and 13 contain the methods used by managers to evaluate the decision to sell properties. Exhibit 12 shows the specific methods listed in the questionnaire, while Exhibit 13 includes others mentioned by the respondents. The executives could specify more than one method.

From Exhibit 12, the most common method applied is the amount of cash flow generated, with 58.3% of the managers using it as the basis for making decisions.

Exhibit 12 Criteria Used for Asset Disposition

Techniques Used	Percent of Responses*
Cash Flow Generation	58.3
Book Value of Assets	34.5
Net Income Generated by Assets	44.0
Appraisal of the Asset	48.8
Internal Rate of Return	22.6
Net Present Value	27.6
Payback Period	10.7

*Responses do not add to 100% since more than one response per company was allowed.
Source: Authors' calculations

Almost 49% of the respondents use the appraised value of assets to make the disposition decision. Of the responses, 44% use net income as the decision variable. Twenty-three percent use the internal rate of return and 28% use the net present value method. A little more than one-third use the book value of the assets to make the decisions.

Exhibit 13 lists the other methods used by the respondents. The most common single criterion mentioned is the operating needs of the firm. Also, profitability of the assets is

Exhibit 13 Miscellaneous Criteria for Disposition Evaluation

-
1. Profitability of real estate at specific location
 2. Need for further operations—operating needs
 3. Reproduction costs less depreciation
 4. Visibility and usefulness
 5. Budget requirements—needed profits to produce bonuses
 6. Reduce liability even if loss must be taken
 7. Regulatory requirements (require disposition of unused surplus real estate)
 8. Analyze benefits of lease or sale (in conjunction with other methods)
-

Source: Authors' calculations

another criterion. One respondent uses the cost approach from appraising to make the decision. Two managers referred to general regulatory requirements which mandate the disposal of unused real estate. One firm looks at the usefulness and the "visibility" of the asset. These responses point out the relatively frequent use of not only objective financial and appraisal measures in making disposition decisions, but also the use of subjective measures such as property value and corporate operating needs. For some firms, regulations may help in making the decision. If an asset satisfies some financial or operational requirement of the company, government regulations may demand that the assets be sold, perhaps within a specified time frame and under certain procedures.

Finally, Exhibit 14 contains the responses regarding the generation of cash from real estate. Of the respondents, 47% sell assets to generate cash for operations, 41% refinance properties and 39% use sale/leasebacks. The survey responses are fairly uniform in distribution across the three methods. In total, approximately 80% of the executives surveyed use either property refinancing or sale/leasebacks to extract cash from real estate, rather than selling the assets. In real estate investment texts, refinancing

Exhibit 14 Methods Used to Generate Cash from Real Estate

Method	Percentage of Responses*
Sale of Assets	46.6
Refinancing	41.4
Sale-Leaseback	39.1

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

Source: Authors' calculations

and sale/leasebacks are treated as viable alternatives to outright sales of properties as ways of procuring cash. With the frequency of corporate takeovers and with large property value appreciation in recent years, managers seem to have become more sophisticated in making properties more efficient in generating cash. Refinancing or using sale/leaseback arrangements permits companies to retain control over needed properties and still extract cash for reinvestment.

Summary and Conclusions

This survey of corporate real estate executives provides valuable insights into the overall capital budgeting process used by companies for real estate. The inclusion of questions about both the acquisition and disposition rules permits conclusions to be drawn as to how executives make decisions in regard to real assets they acquire.

For the acquisition of real estate, managers generally use discounted cash flow methods, as academicians recommend. The results of this survey indicate that the net present value method is used almost as often as the internal rate of return. Profitability measures, some peculiar to real estate, are also used. Measures such as cash-on-cash return and average annual rate of return are frequently used. When multiple rates of return do occur, which is only occasionally, managers tend to rely on some type of modified IRR such as the FMRR. Managers may also use sensitivity analysis and qualitative characteristics of the assets to make acquisition decisions with the existence of multiple returns. Executives perform post-investment audits with varying frequency, from quarterly audits to once every five years. The frequency may depend on the type of firm and/or the nature of the industry. Auditing techniques involve comparison of expected and actual results using either accounting procedures or discounted cash flow analysis. Some type of accounting method seems to be more frequently cited as the common investment auditing procedure.

Leasing is also frequently used, with 62% of the surveyed companies both buying and leasing real estate. Of those who lease real estate, 53% lease more than half of the corporate properties. Leasing has become an important method of acquiring real estate assets, according to this survey.

The most common method used to estimate the discount rate is the weighted average cost of capital. The cost of additional borrowing (cost of new debt) and the return on new (marginal) investments are the second and third most commonly used measures of the discount rate for real estate.

For the disposition of assets, 58% of the respondents use cash flow generated by the assets as the decision criterion to sell. Net income and the appraised value are also commonly used. Approximately 25% of the companies surveyed use IRR or NPV to evaluate the disposition decision. Qualitative factors are also used. However, some type of financial criteria seems to be applied most often. Managers seem to use appraisals of assets fairly frequently. Given the nature of real estate and the responding companies, valuation procedures may be more commonly used than expected. Which rules should be used is not specified in finance literature, since disposition has historically not been of concern to academicians.

Comparing the acquisition and disposition results, managers use the recommended discounted cash flow techniques to evaluate properties for purchase, but use these procedures less often to evaluate the decision to sell assets. Disposition seems to depend

on cash flows, net income and appraisal criteria most often. Use of net income may be the least theoretically preferred criterion because it is cash flow that is reinvested. However, given the significance of accounting and auditing in corporate life, net income may be a criterion which is preferred, since it is a measure most familiar to executives.

It was also found that 80% of the respondent companies refinance properties or extract cash by using sale/leaseback arrangements. Sales of properties may be of less importance than expected. Refinancing, sale/leasebacks and perhaps other methods may be more efficient ways of using properties than simply selling them. For many firms, refinancing may be a much preferred alternative since it is more useful for the managers if selling real estate is not done often, as one respondent remarked.

As part of the analysis of the results, a regression analysis was performed on each of the acquisition and disposition methods against the firm size, regional location and firm type. It was found that size, location and type were not significant in determining the methods used by managers. The procedures used cut across all kinds of companies, the rules used seem to be more a function of corporate policy or familiarity with the traditional methods. Correlation analysis concerning the decision rules and corporate characteristics did not reveal any significant results. Again, the methods used are probably unrelated to corporate size and industry type. In addition, regressions were performed on leasing, refinancing and sale/leaseback and against firm size, regional location and firm type. Size, location and type of firm were not significant in determining whether companies leased properties, refinanced properties or used sale/leaseback arrangements. Like most research, many questions arise from the work done. The use of sale/leaseback arrangements, frequent leasing of properties and the appropriate disposition criteria discussed in this study need further investigation.

References

- [1] E. J. Farragher. Corporate Real Estate Asset Decision Making. *Real Estate Appraiser and Analyst* (Fall 1984), 13-17.
- [2] ——. Investment Decisionmaking Practices of Equity Investors in Real Estate. *Real Estate Appraiser and Analyst* (Summer 1982), 36-41.
- [3] Willard McIntosh, Wallace N. Davidson and Joseph Albert. Capital Budgeting Practices of Corporate Real Estate Executives. *The Appraisal Journal* 60 (January 1987), 125-37.
- [4] Hugh O. Nourse and Dorothy Kingery. Survey of Approaches to Disposing of Surplus Corporate Real Estate. *Journal of Real Estate Research* 2 (Fall 1987), 51-9.
- [5] D. E. Page. Criteria For Investment Decision Making: An Empirical Study. *The Appraisal Journal* 51 (October 1983), 498-508.
- [6] Stephen A. Phyrre and James R. Cooper. *Real Estate Investment: Strategy, Analysis, Decisions*. New York: Warren, Gorham and Lamont, 1982.
- [7] James R. Webb. Real Estate Investment Rules for Life Insurance Companies and Pension Funds: A Survey. *AREUEA Journal* 12 (Winter 1984), 495-520.
- [8] James R. Webb and Willard McIntosh. Real Estate Investment Acquisition Rules for REITs: A Survey. *Journal of Real Estate Research* 1 (Fall 1986), 77-91.
- [9] Robert J. Wiley. Real Estate Investment Analysis: An Empirical Study. *The Appraisal Journal* 44 (October 1976), 586-95.

The authors wish to thank Ron Copley, Norm Miller, C. F. Sirmans and Jim Webb for their valuable advice in conducting this study. We wish to thank the three anonymous referees for their insightful comments. This study was funded by a grant from the Faculty Research Committee of Western Kentucky University.