

The Real Estate Research Interests of the Plan Sponsor Community: Survey Results

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Abstract. This paper presents the findings from a survey of plan sponsors on future research directions in real estate. The Pension Real Estate Association (PREA) and the National Council of Real Estate Investment Fiduciaries (NCREIF) sponsored the survey in fall 1992. Among other things, results indicate a need for further research into the *The Role of Real Estate in a Mixed-Asset Portfolio* and *Real Estate Cycles and Their Predictability*. When analyzed by size and type of fund, the largest funds (government) tend to be interested in performance issues, whereas smaller funds are interested in how much real estate and appropriate investment vehicles.

Introduction

The real estate investment management industry, as well as the academic community, have lost credibility with the institutional investor over the past five years. Plan sponsors, in particular, are left asking the painful question of how they could have suffered the large losses given the supposed quality and sophistication of real estate research. If the industry could not predict, even as the vacancy rates rose and rental rates fell in the mid-1980s, the depth and scope of what was to follow in the late 1980s, then plan sponsors have every right to question the quality and direction of the industry's research. An alternative explanation stems from a potential conflict of interest that exists in the institutional structure of the industry—where managers are compensated strictly on the basis of assets under management rather than performance of those assets. In order to prevent the appearance of a conflict of interest between investment managers and plan sponsors, they have begun to align their interests and some have restructured compensation packages where fees are performance-based. Consequently, when a plan sponsor suffers real estate losses the manager(s) will share those losses through reduced compensation.

On the research side, the challenge ahead becomes one of meeting the research needs of the pension fund investors so that they have a better understanding of the real estate asset class and its role in the institutional investor's portfolio. Toward that end, the National Council of Real Estate Investment Fiduciaries (NCREIF) and the Pension Real Estate Association (PREA) collaborated on an initiative to survey the plan sponsor community in order to better understand what their research needs are. The objective of the survey was twofold: (1) identify what the plan sponsor community regards as the most important research interests confronting the asset class and, (2) assist the NCREIF Research Committee, the Pension Real Estate Association, the Real Estate Research

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Institute (RERI) and the academic community in focusing their research efforts and funding on topics that benefit the consumers of this research—the plan sponsors.

Over the past decade, there has been considerable research examining the role of real estate in the mixed-asset portfolio of pension funds. However, few researchers have surveyed the plan sponsors to determine their specific areas of interest toward the real estate asset class. This study reports the results of a plan sponsor survey and finds, despite all of the recent research devoted to real estate as an institutional investment, that many plan sponsors are interested in more research to gain a better understanding of real estate as an alternative investment. The most frequently cited broad research interest for the aggregate sample was the *Role of Real Estate in a Mixed-Asset Portfolio*, while the most consistently ranked subtopic was *Real Estate Cycles and Their Predictability*.

This paper is organized into the following sections. A brief literature review first examines other surveys of the pension plan community. The next section delineates the results and includes both the broad research categories and the research subcategories that plan sponsors cited most frequently as important research topics. The fourth and fifth sections examine the differences in responses by type and size of fund while the sixth section explores the results based on the level of in-house real estate expertise. The final section provides a summary and recommends some future initiatives to facilitate the exchange of ideas between academicians and practicing professionals.

Literature Review

The first research in this area was completed by Webb (1984)¹ who surveyed institutional investors to ascertain the acquisition rules used for real estate investment decisions. Among other things, Webb found that a significant number of the respondents (38%) made no systematic attempt to diversify their real estate holdings. However, the firms were using more return measures than in previous studies and a large percentage were employing net present value techniques. Later, Louargand (1992) updated a small part of Webb's survey to determine if institutional investors had become more sophisticated in their management practices relating to diversification strategies, risk measurement, and evaluation of investment returns. He found that change had been gradual and few managers had adopted the Modern Portfolio Theory techniques for their asset allocation strategies.

Hartzell (1989) and Hartzell and Webb (1988) also surveyed major real estate investors and researchers. The aim of their surveys was to ascertain investors' ex ante expectations for the real estate asset class including the investment horizon, total return and volatility, as well as the cross-correlations of real estate with the traditional asset classes. Among other things, they found (1) that few investors believe the Russell-NCREIF index accurately reflects the risk of real estate, and (2) many investors believe cross-correlations between real estate and the other asset classes are significantly different from one so real estate should provide diversification benefits in a mixed-asset portfolio.

Elebach and Christianson (1989) investigated state pension plans' participation in the real estate equity market and the pension managers' attitudes toward real estate ownership. They found that state pension plans viewed real estate positively and predicted that allocations to real estate would increase over the next decade. These authors surveyed sixty-eight state pension plans with an average portfolio size of \$5.7 billion and an average real estate allocation of 3.5%.

All of the above studies focus on the existing role of real estate in a respondent's portfolio and, with the exception of Louargand's 1992 study, were completed before the most recent poor performance of the commercial real estate markets was reported. Furthermore, none of the studies focus on the research interests of the portfolio managers as they relate to considering real estate as an alternative asset class in their investment portfolio. This is useful information for investment managers and academicians who are soliciting management contracts from the plan sponsors.

Research Design and Results

In order to focus on the perceived real estate research interests of the institutional investor, a survey was mailed in the fall 1992 to 685 plan sponsors, including government, corporate and Taft-Hartley plans, with gross assets in excess of \$500 million.

As indicated in Exhibit 1, the sample consisted primarily of respondents from corporate (45%) and government (41%) retirement plans. A total of 171 pension funds responded for a response rate of 25%. In terms of size of fund, 30% of the respondents had less than \$1 billion in gross assets; 36% had assets between \$1 and \$4.9 billion; and 30% had assets over \$5 billion. Not all of the funds appear to be active investors in real estate, with 10% indicating they currently hold no real estate and another 39% hold less than \$99 million in real estate investments. However, some respondents are familiar with the asset class as almost one quarter hold over \$500 million in real estate. To ascertain the experience of the plans with real estate investments, respondents were asked if they had in-house real estate expertise. In the entire sample, 35% of the plan sponsors (60 respondents) have dedicated in-house real estate professionals but less than 9% (15 respondents) employ real estate research staff.

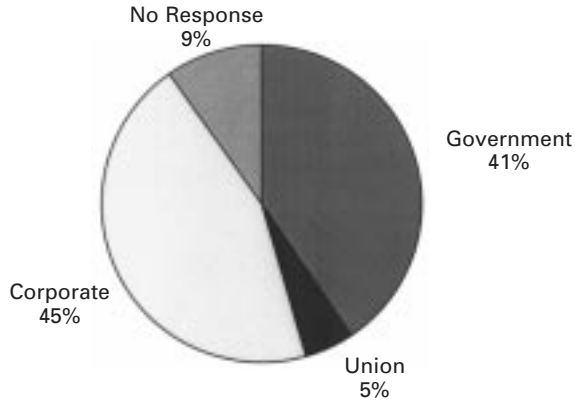
The survey identified eleven broad research areas.² In order to save respondents' time and increase the likelihood of survey completion, respondents were only asked to identify those topics they believed were most important rather than rank ordering all possible choices. While full interval rank ordering would have been preferable, the survey designers believed that the response rate would have suffered given the length of the survey. This was acceptable since the focus of the research was to determine the most important areas where research needs to be done rather than the least important topics.³

In the first section of the survey, respondents were asked to identify and rank order the five broad research areas they believed were most important. Results were classified as either *Most Important* (rank of 1), *Top 3* (rank of 1, 2 or 3), or *Top 5* (any rank of 1–5). The rest of the survey went through each broad category and listed numerous research subtopics that respondents were asked to rank. In this case, respondents were asked to rank only the three most important research interests.

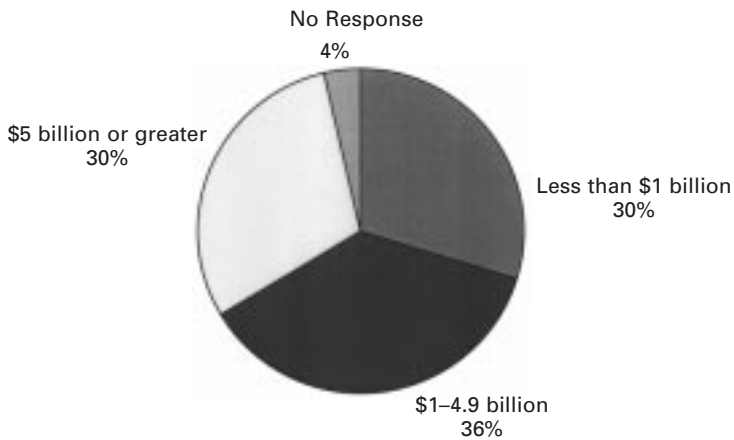
There are several limitations to a mail survey. First, there is the potential for a non-response bias. That is, the responses could be biased with only those plans that are already actively interested in the real estate asset class taking time to respond to the survey. Furthermore, our source for names and addresses was the *1992 Money Market Directory*, which is used by many in the industry as a source for contacts within the pension plan community. Although it was advantageous to use this *Directory*, since a mailing list and labels of the largest funds could be purchased, the source may not have 100% accurate information on the funds (that is, correct addresses or the contact persons who would be most knowledgeable for completing the questionnaire). Furthermore, since

Exhibit 1 General Description of Survey Respondents

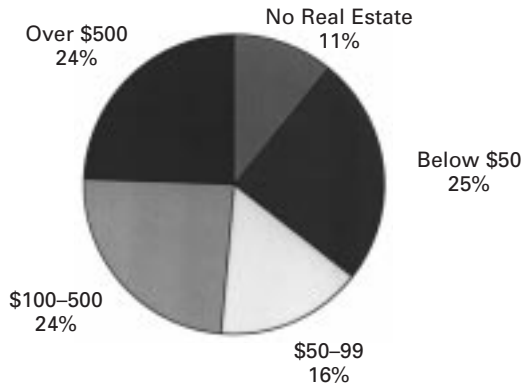
Respondents by Type of Fund



Respondents by Size of Fund (in billions of \$'s)



Dollars Invested in Real Estate (in millions of \$'s)



no verification of the names and addresses was completed it is possible that the survey may have been sent to inappropriate persons within each organization and either ignored or incorrectly filled out.⁴ Finally, although the survey instrument was designed very carefully, in retrospect the number of subcategories within each broad category was not equal and so direct comparisons of results across the various subcategories are not meaningful.⁵

Overall Results

With respect to the broad categories, *The Role of Real Estate in a Mixed-Asset Portfolio* was clearly seen as the research interest of greatest significance. As illustrated in Exhibit 2, almost one-third (31%) of the 171 respondents ranked this topic as the most important research issue facing the industry while more than half the respondents (52%) viewed the issue as one of the Top 3 most important issues and 61% ranked it as one of the Top 5 most important research topics.

The broad topic of *Performance Measurement of Real Estate Assets* was ranked as most important by only 14% but 41% indicated it was in the Top 3 and more than two-thirds (67%) identified it as one of the Top 5 most important research topics.

Exhibit 3 displays the percentage of respondents ranking each broad research interest, with the most widely ranked topic listed first. There were only 7% of the respondents who ranked *Diversification of Real Estate Portfolios* as the Most Important but 39% ranked it in the Top 3 and more than half (52%) ranked the topic as one of the Top 5 most important research topics. An additional topic to highlight is that slightly more than half of the respondents put *Alternative Real Estate Investment Vehicles/Strategies* among their Top 5 most important research topics.

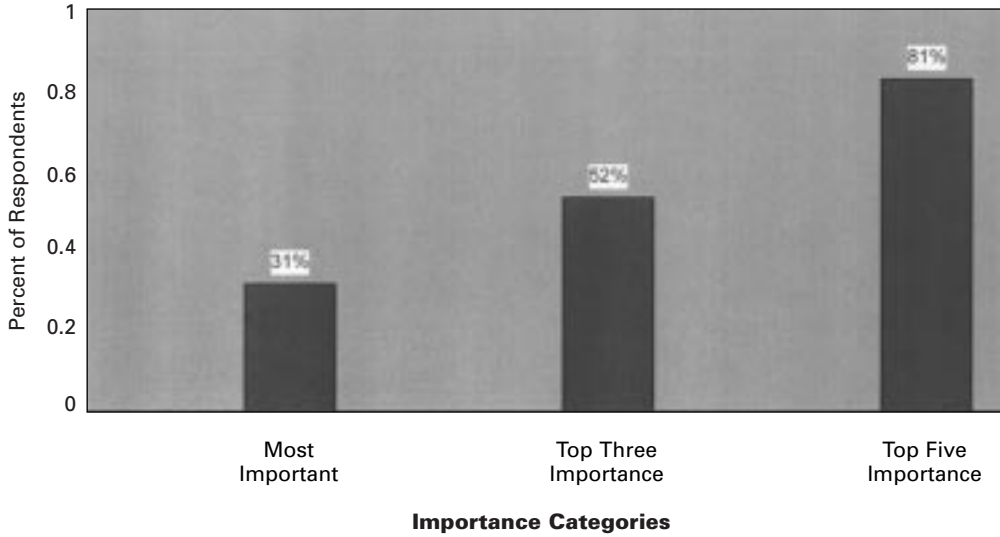
When the broad topic areas are divided into more detailed subcategories, a number of interesting research areas are highlighted. As indicated earlier, there were fewer subcategories for each broad category so respondents were asked to rank order only their Top 3 choices with results classified as either Most Important or Top 3. The following subtopics (the broader topics under which each subtopic falls is shown in italics) were ranked as Most Important by at least 30% of the respondents:

- Tax Factors Affecting Real Estate (45%)—*Regulatory/Public Policy*
- Real Estate Cycles and Their Predictability (37%)—*Macroeconomic Forces*
- How Much Real Estate in a Mixed-Asset Portfolio (35%)—*The Role of Real Estate in a Mixed-Asset Portfolio*
- Role and Impact of International Real Estate (34%)—*International Real Estate*

A somewhat different set of critical subcategories emerge when items are ranked in the Top 3. However, as shown in Exhibit 4 (which provides a summary of all subcategories that were ranked 1, 2 or 3 by more than 50% of the respondents⁶), the issue of *Real Estate Cycles and Their Predictability* is still cited by almost 80% of the respondents. This is undoubtedly due to a most recent downturn in the commercial real estate cycle that drastically reduced the value of many institutional investors' portfolios. *Real Estate Pricing in a Capital Market Context* (74%) was the next most frequently ranked topic

Exhibit 2 Most Frequently Cited Broad Research Categories

Real Estate in a Mixed-Asset Portfolio
(a broad research category)



Performance Measurement of Real Estate Assets
(a broad research category)

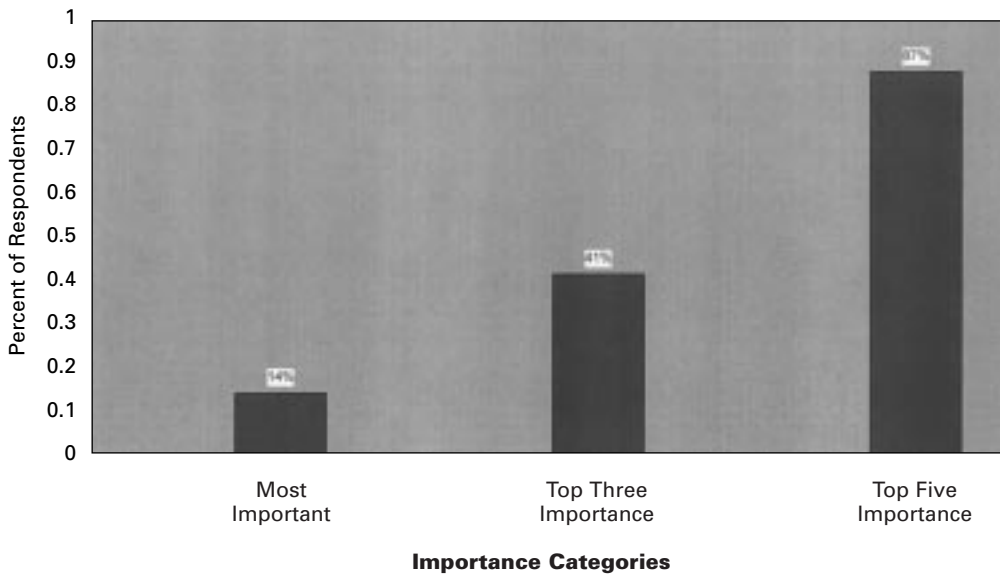


Exhibit 3
Percent of Respondents Ranking Broad Research Categories¹

Research Categories		Percentage Ranking
The Role of Real Estate in a Mixed-Asset Portfolio	Most Important	31.0
	Top 3	52.0
	Of Importance	60.8
Performance Measurement of Real Estate Assets and Portfolios	Most Important	13.5
	Top 3	40.9
	Of Importance	66.7
Macroeconomic Forces Affecting Real Estate	Most Important	12.3
	Top 3	26.3
	Of Importance	46.8
Real Estate Investment Vehicles/Strategy	Most Important	9.4
	Top 3	28.7
	Of Importance	52.6
Diversification within Real Estate Portfolios	Most Important	7.0
	Top 3	38.6
	Of Importance	52.0
Microeconomic Forces Affecting Real Estate	Most Important	4.1
	Top 3	17.0
	Of Importance	31.0
Property and Portfolio Risk Management	Most Important	6.4
	Top 3	22.2
	Of Importance	41.5
Demographic Changes Affecting Real Estate	Most Important	4.1
	Top 3	25.1
	Of Importance	46.2
Regulatory/Public Policy Changes Affecting Real Estate	Most Important	2.3
	Top 3	8.2
	Of Importance	17.5
International Real Estate's Role in a Pension Portfolio	Most Important	1.8
	Top 3	6.4
	Of Importance	16.4
Technological Changes Affecting Real Estate	Most Important	0.0
	Top 3	10.5
	Of Importance	24.6

¹Most Important=Ranking was 1; Top 3=Ranking was 1, 2 or 3; Of Importance=Ranking was 1–5.
Source: Authors' calculations

highlighting the issue that real estate is often compared with more traditional assets like stocks and bonds. *Effects of a Changing Labor Force* (72%) and *Environmental Regulations on Toxic Substances* (72%) were also ranked frequently in the Top 3.

As indicated previously, the broad category of *Performance Measurement* was highlighted as an important research category and several of the subtopics in this category were viewed as important by the majority of the respondents. In particular,

Exhibit 4
Subcategories Ranked by More than 50% of the Respondents as the
Most Important or within the Top 3 Research Interests¹
(ranked by the Percentage Choosing the Topic as the Most Important)

Subcategory of Research Interest	Most Important	Top 3
Tax Factors Affecting Real Estate	45.0	63.2
Effects of Structural Changes in Employment Demand	39.2	64.9
Real Estate Cycles, Their Existence and Predictability	36.8	80.1
Amount of Real Estate Appropriate in a Mixed-Asset Portfolio	35.1	60.2
Role and Impact of International Real Estate on a Pension Fund Portfolio	33.9	60.2
Measures of Risk for Real Estate Performance	32.7	66.1
Effect of Valuation Practices on Portfolio Returns	32.2	67.3
Effects of Changing Labor Force on Property-type Performance	29.8	71.9
Forecasting Methodologies for Markets, Rents, Returns, etc.	28.1	59.1
Real Estate Pricing in a Capital Market Context	25.1	74.3
Environmental Regulations Regarding Toxic Substances	22.2	71.9
Effects of Aging Population on Real Estate	19.3	50.9
Effects of Regional Migration Patterns on Real Estate	15.2	60.8
Regional/Metropolitan Area Demand Analysis	15.2	53.2
Appraisal Lags/Biases	15.2	50.3
Building Codes	14.0	57.9
Correlations of Real Estate with Other Assets	12.3	50.3
Zoning/Planning Regulations	5.8	56.1

¹Most Important=Ranking of 1; Top 3=Ranking of 1, 2 or 3.

Source: Authors' calculations

Measures of Risk for Real Estate Performance and the *Effect of Valuation Practices on Portfolio Returns* were rated in the Top 3 by 66% and 67%, respectively. While real estate has been historically touted as an investment having relatively low volatility compared to other asset classes, just how low has been the subject of recent research (Miles, Cole and Guilkey, 1990). In their study, Miles et al. used sales data from properties that comprise the Russell-NCREIF index to generate a transactions driven commercial real estate return series. Comparing the volatility of this series to stock market volatility, the authors found a risk-ratio of .66 (i.e., the volatility of the commercial real estate transaction-driven series was 66% of the stock market volatility). Using the NAREIT Equity Index, risk ratios ranging between .59 and .71 were found, while comparison with the Russell/NCREIF index resulted in risk ratios between .14 and .06, depending on the time period covered. The true volatility of real estate most likely lies somewhere between the two extremes and additional research for measuring this is a high priority for many of the survey respondents.

With respect to valuation, problems associated with appraisal-based returns have been well documented, but the lack of a continuous auction market for real estate makes appraisals a necessary and important tool. However, the potential smoothing effect from

appraisals has significant implications with respect to asset allocation models since the mean and standard deviation of the returns are critical inputs. In addition, the appraisal lag effect (appraised values lag the market in a rising market and lead the market in a declining market) can have a significant effect on the correlation of real estate returns with the returns of other asset classes. This is important since intercorrelations of returns between real estate and the other asset classes also represent critical inputs to asset allocation models. The concern over appraisal lags/biases is reflected by the fact that 50% of the survey respondents ranked it as one of the Top 3 most important issues in the area of *Performance Measurement*.

Under the broad topic area of *Demographic Changes Affecting Real Estate*, the changing labor force and its implications for real estate performance was rated as one of the Top 3 most important areas for investigation by over 70% of the survey respondents. The most salient demographic changes on the horizon include the graying of the baby boom generation, emergence of the smaller echo baby boom, a shift in life-style preferences, and the growth of minority and foreign representation in the population. By gaining a better understanding of demographic trends and their influence on property-type performance, institutional investors will be able to develop portfolio strategies that are tailored to changing market conditions.

Associated with understanding demographic trends is insight into the *Effects of Regional and Local Migration Patterns* on real estate (over 60% of survey respondents rated this subtopic as one of the Top 3 important areas for investigation). For example, one or two generations ago, we witnessed people moving to where the jobs were. Today there is a stronger emphasis on quality of life which creates the opposite trend—jobs are more likely to move to where people go. The migration to the Sunbelt in the 1980s and the more recent migration from major cities on the West and East coast to smaller cities with a higher quality of life illustrate this trend.

On a more local level, the “mallings” of America during the 1970s set the stage for the rise of suburban nodes, or so called “Edge Cities” (Garreau, 1988). What this trend portends for center city office and retail space in many major metropolitan areas could be of tremendous importance to the future of institutional investments. We have identified just a few examples of the potential impact demographic changes can have on real estate investments. The high degree of interest in this topic indicates this is an important area for future research.

Finally, there has been a growing interest in the *Effects of Structural Changes in Employment Demand* (almost 40% of respondents ranked this subtopic as Most Important). For example, technological advances have made it possible for some employees to “telecommute” which could likely result in a decrease in office space demand. Similarly, the trends of decentralization of staff, job sharing, flex-time, and home office use all seem to be increasing. While the potential effects of these trends on real estate demand and performance have yet to be charted, results from the survey show that there is clearly an interest in additional research in this area as well.

The fundamental issues listed above need to be addressed by applied and academic researchers alike. At a time when the industry is rapidly changing and real estate fundamentals will be determined by a changing demographic, sociological and technological landscape, the answers to these issues will have a profound effect on our industry going forward.

Comparison by Type of Fund

An instructive analysis of the data involved a comparison of responses segmented by type of fund. Results, however, are reported only for corporate and government funds since the Taft-Hartley responses, representing only 5% of the total sample, could not be considered representative for that group. Responses from corporate and government funds represented 45% and 40%, respectively, of the total sample.

The corporate and government funds responding to this survey differed in important ways. For example, government funds were generally larger. In fact, government funds represented 61% of all funds with more than \$5 billion in total assets whereas corporate funds represented only 27% of that group. Conversely, 66% of the funds under \$1 billion in assets were corporate funds while only 22% were government funds.

Given the differences in size, it was not surprising that government funds had more real estate holdings. As illustrated in Exhibit 5, almost 40% of the government funds had \$500 million or more invested in real estate compared to only 14% of the corporate funds. Conversely, almost 40% of all corporate funds had \$50 million or less invested in real estate compared to only 14% of the government funds. While these differences are substantial, they do not indicate whether, on a percentage basis, the two fund types had significantly different real estate allocations. This cannot be determined from the survey results as participants were not asked the percentage of real estate currently held within the investor's portfolio.⁷

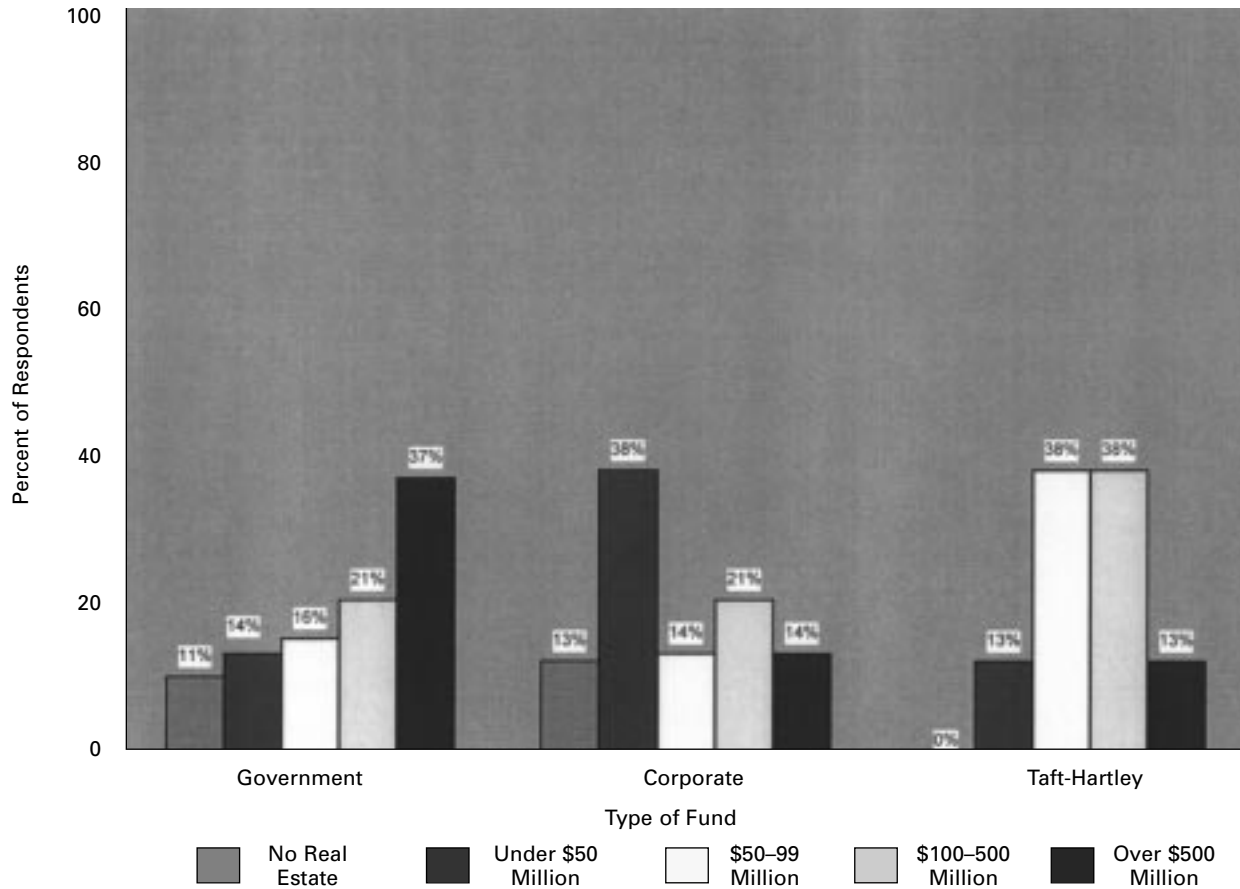
Other differences existed between corporate and government funds in terms of their in-house real estate professionals. A total of 51% of the government funds reported having dedicated in-house real estate professionals compared to only 21% of the corporate funds. Furthermore, 16% of the government funds reported having real estate research staff in-house compared to only 5% of the corporate funds.

Understanding how the corporate and government funds differ in this sample is important. It provides a basis for explaining some of the differences in the survey responses. For example, outsourcing real estate management functions by corporate entities has accelerated over the past several years as corporations have attempted to achieve greater efficiency and cost effectiveness. This could explain the lack of in-house real estate expertise. The difference could also be explained by the larger real estate holdings in pension funds set up for government employees. It may be more efficient for them to actually employ professionals who are familiar with the real estate asset class. Alternatively, it could be that government funds are more closely scrutinized by the general public or that these funds have begun to change investment strategies from commingled to discretionary fund management and need additional in-house expertise to help make investment decisions.

Broad Research Category Results

The most notable general finding in comparing responses between corporate and government funds is the high degree of convergence across virtually all research topic areas. Exhibit 6 details the broad categories that were ranked as the Most Important, Top 3, and Top 5 research interests, with the three most frequently ranked topics for each level of interest and each type of fund highlighted. The themes of *The Role of Real Estate in a Mixed-Asset Portfolio* was dominant for both fund types. More than 35% of corporate funds and 25% of government funds ranked this item as Most Important. For

Exhibit 5
Dollars within Portfolio Presently Invested in Real Estate
(by Type of Fund)



government funds, *Performance Measurement of Real Estate Assets and Portfolios* was second in terms of the frequency with which it was rated Most Important (20% compared to 8% for corporate funds). In fact, more than 77% of government respondents cited this topic as one of the Top 5 most important research topics (compared to only 58% of the corporate funds).

Exhibit 6
Percent of Respondents Ranking Broad Research Category
(by Type of Fund)¹

Broad Research Categories		Type of Fund (%)	
		Government	Corporate
The Role of Real Estate in a Mixed-Asset Portfolio²	Most Important	24.3	35.1
	Top 3	50.0	55.8
	Of Importance	57.1	67.5
Diversification within Real Estate Portfolios	Most Important	4.3	11.7
	Top 3	32.9	46.8
	Of Importance	50.0	59.7
Macroeconomic Forces Affecting Real Estate	Most Important	10.0	14.3
	Top 3	18.6	35.1
	Of Importance	40.0	55.8
Microeconomic Forces Affecting Real Estate	Most Important	5.7	3.9
	Top 3	17.1	16.9
	Of Importance	31.4	32.5
Performance Measurement of Real Estate Assets and Portfolios	Most Important	20.0	7.8
	Top 3	47.1	39.0
	Of Importance	77.1	58.4
International Real Estate's Role in a Pension Portfolio	Most Important	4.3	0.0
	Top 3	10.0	2.6
	Of Importance	22.9	11.7
Real Estate Investment Vehicles/Strategy	Most Important	10.0	10.4
	Top 3	32.9	29.9
	Of Importance	52.9	55.8
Property and Portfolio Risk Management	Most Important	8.6	5.2
	Top 3	30.0	16.9
	Of Importance	57.1	32.5
Demographic Changes Affecting Real Estate	Most Important	4.3	3.9
	Top 3	21.4	22.1
	Of Importance	42.9	46.8
Technological Changes Affecting Real Estate	Most Important	4.3	2.6
	Top 3	17.1	5.2
	Of Importance	30.0	22.1
Regulatory/Public Policy Changes Affecting Real Estate	Most Important	2.9	1.3
	Top 3	10.0	6.5
	Of Importance	18.6	18.2

¹Most Important=Ranking was 1; Top 3=Ranking was 1, 2 or 3; Of Importance=Ranking was 1-5.

²Interests are listed in the order found in the survey. Bold type indicates rankings of 50% or more.
Source: Authors' calculations

Subcategory Analysis

The responses by subcategory were for the most part similar between the two types of plans. Exhibit 7 summarizes the subcategories that were ranked 1–3 by more than 50% of the respondents and the following section highlights only those subcategories where the fund types differed substantially in their rankings of research topics.

The Role of Real Estate in a Mixed-Asset Portfolio. Responses across virtually all subcategories were similar with both fund types citing *Amount of Real Estate Appropriate in a Mixed-Asset Portfolio* as the Most Important (30% of government and 38% of corporate funds). In considering the Top 3, corporate funds remained loyal to this topic (69%) but government funds were more interested in *Correlations of Real Estate with Other Assets* (56% ranked this interest in the Top 3). This provides some evidence that many of the government funds may already have experience with the real estate asset class and its role in the portfolio and are interested in more specific details of the asset class.

Exhibit 7
Subcategories Ranked by More than 50% of the Respondents as
Most Important or within the Top 3 Research Interests
(by Type of Fund)¹

Subcategories of Research Interests		Type of Fund (%)	
		Government	Corporate
Amount of Real Estate Appropriate in a Mixed-Asset Portfolio²	Most Important	30.0	37.7
	Top 3	52.9	68.8
Correlations of Real Estate with Other Assets	Most Important	11.4	13.0
	Top 3	55.7	49.4
Recasting Real Estate Returns to be More Comparable with Stock and Bond Returns	Most Important	22.9	16.9
	Top 3	45.7	55.8
Measures of Risk for Real Estate Performance	Most Important	24.3	33.8
	Top 3	61.4	68.8
Degree of Diversification Obtainable within Real Estate Portfolios	Most Important	20.0	15.6
	Top 3	45.7	51.9
Performance Attribution	Most Important	11.4	5.2
	Top 3	27.1	50.6
Relationship of Real Estate to Macroeconomic Factors	Most Important	11.4	10.4
	Top 3	42.9	50.6
The Existence and Predictability of Real Estate Cycles	Most Important	34.3	37.7
	Top 3	81.4	79.2
Real Estate Pricing in a Capital Market Context	Most Important	30.0	24.7
	Top 3	81.4	68.8
Individual Property-type Outlooks	Most Important	15.7	23.4
	Top 3	47.1	50.6
Regional/Metropolitan Area Demand Analysis	Most Important	21.4	11.7
	Top 3	60.0	49.4

Exhibit 7 (continued)

Subcategories of Research Interests		Type of Fund (%)	
		Government	Corporate
Forecasting Methodologies for Markets, Rents, Returns, etc.	Most Important	27.1	32.5
Effect of Valuation Practices on Portfolio Returns	Most Important	25.7	37.7
	Top 3	64.3	67.5
Appraisal Lags/Biases	Most Important	20.0	11.7
	Top 3	51.4	50.6
Role and Impact of International Real Estate on a Pension Fund Portfolio	Most Important	41.4	32.5
	Top 3	64.3	66.2
Effects of Changing Labor Force on Property-type Performance²	Most Important	31.4	35.1
	Top 3	72.9	75.3
Effects of Regional Migration Patterns on Real Estate	Most Important	12.9	18.2
	Top 3	55.7	71.4
Effects of Aging Population on Real Estate	Most Important	14.3	20.8
	Top 3	54.3	48.1
Effects of Structural Changes in Employment Demand	Most Important	38.6	41.6
	Top 3	61.4	72.7
Tax Factors Affecting Real Estate	Most Important	34.3	58.4
	Top 3	52.9	77.9
Zoning/Planning Regulations	Most Important	7.1	7.8
	Top 3	61.4	57.1
Building Codes	Most Important	22.9	5.2
	Top 3	74.3	48.1
Environmental Regulations Regarding Toxic Substances	Most Important	28.6	19.5
	Top 3	77.1	72.7

¹Most Important=Ranking was 1; Top 3=Ranking was 1, 2 or 3.

²Interests are listed in the order found in the survey. Bold type indicates Top 3 percentage for each interest level and type of fund.

Source: Authors' calculations

Diversification within Real Estate. There were three subtopics in this category where the funds differed significantly with respect to how frequently they were rated in the Top 3: *Performance Attribution*, *Diversification of Nontraditional Real Estate*, and *Market Capitalization of Individual Real Estate Sectors*. Over 50% of the corporate funds rated *Performance Attribution* in the Top 3 compared to just 27% of the government funds. Conversely, government funds more frequently rated *Diversification of Nontraditional Real Estate* and *Market Capitalization of Individual Real Estate Sectors* as one of the Top 3 subtopics (30% and 29%, respectively) than did corporate funds (14% for each of these subtopics).

Macroeconomic Forces Affecting Real Estate. The *Impact of Global Capital Markets* was the only topic where there was a significant difference in the way the two funds responded. Close to 30% of the government funds rated this topic in the Top 3 while only 9% of the corporate funds ranked it in the Top 3.

Performance Measurement. Both fund types focused primarily on the issues surrounding valuation: *Effect of Valuation Practices on Portfolio Returns* and *Appraisal Lags/Biases*. However, there were some interesting differences in the other subtopics. Close to 30% of the government funds rated *Dividend Yield Reporting in Real Estate* in the Top 3 compared to only 14% of the corporate funds. Conversely, more than 32% of the corporate funds rated *REITs as a Proxy for Real Estate* in the Top 3, compared to 16% for the government funds.

Demographics. Both government and corporate funds agreed on the importance of the *Effects of Changing Labor Force on Property-type Performance*. Approximately one-third of the respondents from each fund type rated this item as Most Important and close to 75% of each group cited it within the Top 3 research areas. While both fund types believed that the *Effects of Regional Migration on Real Estate* was an important topic, almost 72% of the corporate funds rated it in the Top 3 compared to just 56% of the government funds.

Regulatory/Public Policy. While there is a significant difference in the absolute percentages, both corporate and government funds most frequently rated *Tax Factors Affecting Real Estate* as Most Important (58% and 34%, respectively). However, as shown in Exhibit 7, when considering the topics most frequently rated in the Top 3, research interests differed substantially. Approximately 78% of the corporate funds cited *Tax Factors Affecting Real Estate* compared to only 53% of the government funds.⁸ Conversely, almost 75% of the government funds ranked *Building Codes* in the Top 3, but only 48% of the corporate funds responded similarly.

Comparison by Size of Fund

When the sample is examined by fund size, several areas emerge where research interests differ. One explanation for the difference is that the larger funds have significantly more real estate in their portfolios and would therefore tend to be more knowledgeable about real estate as an investment alternative. Exhibit 8 details the present amount of real estate currently held by fund size. Results indicate that larger funds have more real estate holdings in their portfolio, with 73% of the funds over \$5 billion indicating they already own over \$500 million in real estate. Furthermore, 77% of these largest funds have dedicated in-house real estate professionals and 27% employ in-house real estate research staff. Therefore, these larger funds have greater access to real estate expertise than do the funds under \$5 billion—only 2% of the smallest funds and none of the medium-size funds have any formal in-house real estate research capability.

Broad Research Categories

We posit that larger funds, having greater experience with the asset class, are more likely to be interested in specific issues impacting the performance of existing real estate investments whereas smaller funds are more likely to be interested in the more basic questions about real estate as an asset class, both within a real estate portfolio and on a mixed-asset basis. Evidence of this can be found in Exhibit 9. Of the largest funds, 21% cite *Macroeconomic Factors Affecting Real Estate* most frequently as the most important

Exhibit 8 Dollars within Portfolio Presently Invested in Real Estate (by Size of Fund)

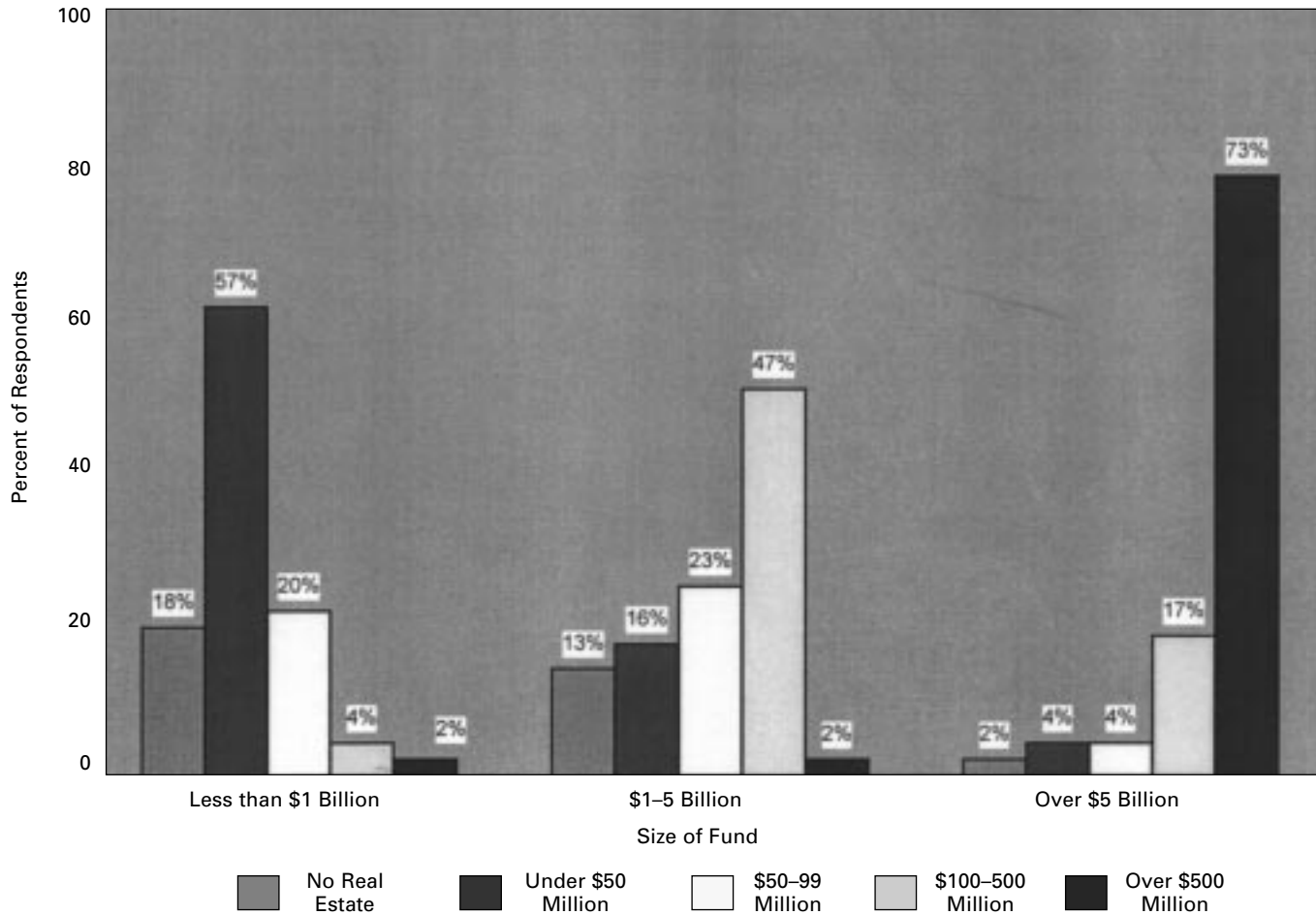


Exhibit 9
Percent of Respondents Ranking Broad Research Categories
(by Size of Fund)¹

Research Categories		Size of Fund (in billions of \$'s)		
		Less than \$1	\$1–4.9	\$5 or More
The Role of Real Estate in a Mixed-Asset Portfolio²	Most Important	43.1	32.3	15.4
	Top 3	49.0	56.5	34.6
	Of Importance	70.6	61.3	51.9
Diversification within Real Estate Portfolios	Most Important	13.7	3.2	5.8
	Top 3	51.0	33.9	32.7
	Of Importance	68.6	43.5	48.1
Macroeconomic Forces Affecting Real Estate	Most Important	7.8	9.7	21.2
	Top 3	23.5	22.6	34.6
	Of Importance	49.0	38.7	57.7
Microeconomic Forces Affecting Real Estate	Most Important	3.9	1.6	7.7
	Top 3	17.6	16.0	44.2
	Of Importance	23.5	29.0	44.2
Performance Measurement of Real Estate Assets and Portfolios	Most Important	13.7	16.1	11.5
	Top 3	49.0	41.9	34.6
	Of Importance	74.5	66.1	61.5
International Real Estate's Role in a Pension Portfolio	Most Important	0.0	1.6	3.9
	Top 3	3.9	6.5	9.6
	Of Importance	11.8	21.0	15.4
Real Estate Investment Vehicles/Strategy	Most Important	7.8	12.9	7.7
	Top 3	27.5	30.7	28.8
	Of Importance	58.8	53.2	46.2
Property and Portfolio Risk Management	Most Important	3.9	8.1	7.7
	Top 3	15.7	22.6	28.8
	Of Importance	37.3	38.7	51.9
Demographic Changes Affecting Real Estate	Most Important	0.0	1.6	11.5
	Top 3	19.6	22.6	36.5
	Of Importance	39.2	43.6	61.5
Technological Changes Affecting Real Estate	Most Important	0.0	0.0	0.0
	Top 3	2.0	11.3	19.2
	Of Importance	15.7	27.4	32.7
Regulatory/Public Policy Changes Affecting Real Estate	Most Important	0.0	3.2	3.9
	Top 3	7.8	9.7	7.7
	Of Importance	15.7	24.2	13.5

¹Most Important=Ranking was 1; Top 3=Ranking was 1, 2 or 3; Of Importance=Ranking was 1–5.

²Interests are listed in the order found in the survey. Bold type indicates rankings of 50% or more.

Source: Authors' calculations

broad research topic and 44% indicate *Microeconomic Factors Affecting Real Estate* as being one of their Top 3 research interests. Close to two-thirds of the largest funds ranked both *Demographic Changes Affecting Real Estate* and the *Performance Measurement of Real Estate Assets and Portfolios* as one of the Top 5 research areas. All of these research areas are focused on specific aspects of a real estate investment.

Conversely, both of the smaller funds (under \$1 billion and \$1–4.9 billion) rated the more general topic of *The Role of Real Estate in a Mixed-Asset Portfolio* most frequently as their number one research interest—43% and 32%, respectively. These smaller funds varied when the Top 3 research interests were cited with the very smallest funds shifting towards an interest in *Diversification within Real Estate Portfolios* (51%) while the medium-size firms focused on the general subject of *The Role of Real Estate in a Mixed-Asset Portfolio* (57%). When the Top 5 research interests are considered, there is more consensus among the three different fund sizes—greater than half cited *Performance Measurement of Real Estate Assets and Portfolios*.

Subcategory Analysis

A detailed examination of the subcategory responses indicated only four areas where the top research interest responses differed substantially by size of fund which are detailed below. In all of the other areas, the top research subcategories were the same, regardless of fund size. Exhibit 10 summarizes the subcategories that were ranked within the Top 3 research interests by 50% or more of the respondents.

As with the broad categories, the major differences between the three categories of fund size can be partially explained by the amount of experience and expertise the plan sponsors have had with the real estate asset class. For example, in the broad category *Macroeconomic Forces Affecting Real Estate*, it is apparent that the larger funds are more knowledgeable about the asset class. They are more interested in the complicated issue of

Exhibit 10
Subcategories Ranked by More than 50% of the Respondents as Most
Important or within the Top 3 Research Interests
(by Size of Fund)¹

Subcategories of Research Interests		Less than Billion (%)	\$1–4.9 Billion (%)	Over \$5 Billion (%)
Amount of Real Estate Appropriate in a Mixed-Asset Portfolio²	Most Important	41.2	32.3	30.8
	Top 3	72.6	56.5	51.9
Correlations of Real Estate with Other Assets	Most Important	9.8	9.7	15.4
	Top 3	58.8	43.6	51.9
Recasting Real Estate Returns to be More Comparable with Stock and Bond Returns	Most Important	21.6	12.9	21.2
	Top 3	43.1	45.2	51.9
Measures of Risk for Real Estate Performance	Most Important	33.3	38.7	26.9
	Top 3	68.6	66.1	67.3
Degree of Diversification Obtainable within Real Estate Portfolios	Most Important	17.7	12.9	19.2
	Top 3	52.9	40.3	51.9
Real Estate Cycles, Their Existence and Predictability	Most Important	39.2	45.2	26.9
	Top 3	86.3	80.7	75.0
Real Estate Pricing in a Capital Market Context	Most Important	23.5	19.4	34.6
	Top 3	60.8	79.0	86.5
Regional/Metropolitan Area Demand Analysis	Most Important	9.8	11.3	25.0
	Top 3	41.2	51.6	67.3

Exhibit 10 (continued)

Subcategories of Research Interests		Less than Billion (%)	\$1–4.9 Billion (%)	Over \$5 Billion (%)
Forecasting Methodologies for Markets, Rents, Returns, etc.	Most Important	35.3	27.4	25.0
	Top 3	54.9	62.9	61.5
Effect of Valuation Practices on Portfolio Returns	Most Important	33.3	40.3	25.0
	Top 3	68.6	74.2	55.8
Appraisal Lags/Biases	Most Important	17.7	12.9	13.5
	Top 3	58.8	53.2	38.5
Role and Impact of International Real Estate on a Pension Fund Portfolio	Most Important	23.5	33.9	42.3
	Top 3	60.8	56.5	63.5
Open-ended vs. Closed-ended vs. Separate Accounts	Most Important	33.3	14.5	7.7
	Top 3	52.9	41.9	11.5
Reducing Ownership Risks through Lease Language	Most Important	15.7	16.1	19.2
	Top 3	27.5	40.3	50.0
Effects of Changing Labor Force on Property-type Performance	Most Important	33.3	25.8	34.6
	Top 3	68.6	66.1	86.5
Effect of Regional Migration Patterns on Real Estate²	Most Important	13.7	14.5	19.2
	Top 3	62.7	53.2	71.2
Effects of Aging Population on Real Estate	Most Important	21.6	17.7	17.3
	Top 3	47.1	53.2	51.9
Comparison of Demographic Forecasting Techniques	Most Important	7.8	30.7	28.8
	Top 3	37.3	53.2	38.5
Effects of Structural Changes in Employment Demand	Most Important	41.2	32.3	48.1
	Top 3	60.8	59.7	76.9
Tax Factors Affecting Real Estate	Most Important	41.2	51.6	42.3
	Top 3	58.8	61.3	69.2
Zoning/Planning Regulations	Most Important	5.9	3.2	11.5
	Top 3	52.9	59.7	61.5
Building Codes	Most Important	7.8	19.4	15.4
	Top 3	49.0	64.5	61.5

¹Most Important=Ranking was 1; Top 3=Ranking was 1, 2 or 3.

²Interests are listed in the order found in the survey. Bold type indicates Top 3 percentage for each interest level and size of fund.

Source: Authors' calculations

Real Estate Pricing in a Capital Market Context (35% rated this area of research as the most important) whereas both the medium and small firms were interested in a more basic question of the *Existence and Predictability of Real Estate Cycles* (45% and 38%, respectively).

This difference in experience with the real estate asset class is also apparent in the category of *Real Estate Investment Vehicles/Strategies*. Given the smaller funds' lack of in-house real estate expertise, they are not typically buying the asset class directly. Instead, they are more interested in understanding which type of real estate investment vehicles would be most appropriate for their portfolios. The most frequently cited

research interest for the smallest of funds was *Open-ended vs. Closed-ended vs. Separate Accounts*. The medium-size firms indicated a strong interest in how to invest in the asset class and were most interested in the *Potential Role of REITs in a Pension Portfolio*. On the other hand, the larger funds were most interested in *Real Estate Sales and Exit Strategies*. However, these larger funds also showed similar levels of interest in the *Role of a Core vs. Opportunity Portfolio* and the *Potential Role of REITs in a Pension Portfolio*. The identification of these subcategories by the larger funds tends to suggest a greater sophistication and broader experience with the asset class.

Within the broad category *Microeconomic Factors Affecting Real Estate*, respondents from all three fund sizes cited *Forecasting Methodologies for Markets, Rents, Returns, etc.* as the most important subcategory of research interest. However, the largest funds also frequently ranked *Regional/Metropolitan Area Demand Analysis* as an important area for research.

Finally, there are some slight differences in research interests by fund type when the category of *Demographic Changes Affecting Real Estate* is examined. The largest and smallest funds are most interested in the *Effects of Changing Labor Force*—with about one-third of each group citing this subcategory as the Most Important. However, the medium-size firms rated the *Comparison of Demographic Forecasting Techniques* most frequently as their top research interest in this subcategory.

In-House Real Estate Expertise

It is entirely probable that some of the differences noted above are unrelated to either the size or type of fund, but rather to some other attribute such as the amount of investment experience a fund has with the real estate asset class. For example, funds that have held real estate in a mixed-asset context since the early 1970s could be expected to have a vastly different perspective on the asset class than a fund that recently began to hold real estate investments in its portfolio. Furthermore, one might expect plan sponsors that have in-house real estate professionals and real estate research staff to have different real estate research interests than those who depend entirely on outside consultants for their real estate investment decisions.

Exhibit 11 illustrates that when results are analyzed by considering those respondents with and without real estate professionals on staff, the broad research interests vary. For the Top 3 broad research categories there was little difference between the overall rankings but this is not the case with the Top 5 research interests. *The Role of Real Estate in a Mixed-Asset Portfolio* was most frequently ranked as Most Important followed by *Performance Measurement of Real Estate Assets and Portfolios*, and *Diversification within Real Estate Portfolios*. When the Top 5 research interests are considered, those funds that have in-house real estate professionals are most concerned with *Performance* (68.3%), *Demographic Changes Affecting Real Estate* (58.3%), *The Role of Real Estate in a Mixed-Asset Portfolio* (53.5%), and *Macroeconomic Forces Affecting Real Estate* (53.3%). Funds without real estate professionals also ranked many of the same research interests highly but they added *Real Estate Investment Vehicles/Strategy* (56.2%) and *Diversification within Real Estate Portfolios* (55.2%) within their Top 5.

To summarize the different research interests for plans with and without in-house professionals, Exhibit 12 details those subcategories where over 50% of the respondents ranked the topic within the Top 3 and where there was at least a 10% difference between

Exhibit 11
Percent of Respondents Ranking Specific Research Category with and
without In-House Real Estate Professionals
(Broad Research Categories)¹

Research Category		With Real Estate Professionals	Without Real Estate Professionals
The Role of Real Estate in a Mixed-Asset Portfolio²	Most Important	30.0	30.5
	Top 3	45.0	56.2
	Of Importance	53.3	65.7
Diversification within Real Estate Portfolios	Most Important	8.3	6.7
	Top 3	36.7	40.0
	Of Importance	48.3	55.2
Macroeconomic Forces Affecting Real Estate	Most Important	13.3	12.4
	Top 3	28.3	25.7
	Of Importance	53.3	44.8
Microeconomic Forces Affecting Real Estate	Most Important	6.7	2.9
	Top 3	21.7	15.2
	Of Importance	41.7	26.7
Performance Measurement of Real Estate Assets and Portfolios	Most Important	13.3	14.3
	Top 3	38.3	43.8
	Of Importance	68.3	66.7
International Real Estate's Role in a Pension Portfolio	Most Important	3.3	1.0
	Top 3	11.7	3.8
	Of Importance	20.0	14.3
Real Estate Investment Vehicles/Strategy	Most Important	5.0	12.4
	Top 3	30.0	28.6
	Of Importance	46.7	56.2
Property and Portfolio Risk Management	Most Important	5.0	7.6
	Top 3	25.0	21.0
	Of Importance	48.3	39.1
Demographic Changes Affecting Real Estate	Most Important	8.3	1.9
	Top 3	33.0	21.9
	Of Importance	58.3	41.9
Technological Changes Affecting Real Estate	Most Important	0.0	0.0
	Top 3	13.3	9.5
	Of Importance	30.0	22.9
Regulatory/Public Policy Changes Affecting Real Estate	Most Important	3.3	1.9
	Top 3	6.7	9.5
	Of Importance	15.0	20.0

¹Most Important=Ranking was 1; Top 3=Ranking was 1, 2 or 3; Of Importance=Ranking was 1–5.

²Interests are listed in the order found in the survey. Bold type indicates Top 3 percentage for funds with and without real estate professionals.

Source: Authors' calculations

Exhibit 12
Percent of Respondents Ranking Specific Subcategories with and without In-House Real Estate Professionals*

Subcategory of Research Interest		With Real Estate Professionals (%)	Without Real Estate Professionals (%)
Amount of Real Estate Appropriate in a Mixed-Asset Portfolio	Most Important	30.0	37.1
	Top 3	51.7	64.8
Investigation of Real Estate's Liquidity Compared to Other Assets	Most Important	5.0	12.4
	Top 3	18.3	49.5
Measures of Risk for Real Estate Performance	Most Important	33.3	33.3
	Top 3	75.0	62.9
Real Estate Pricing in a Capital Market Context	Most Important	31.7	21.9
	Top 3	91.7	66.7
Regional/Metropolitan Area Demand Analysis	Most Important	23.3	10.5
	Top 3	60.0	49.5
Effect of Valuation Practices on Portfolio Returns	Most Important	25.0	38.1
	Top 3	58.3	71.4
Appraisal Lags/Biases	Most Important	11.7	16.2
	Top 3	36.7	58.1
Role and Impact of International Real Estate on a Pension Fund Portfolio	Most Important	43.3	27.6
	Top 3	66.7	56.2
Reducing Ownership Risks through Lease Language	Most Important	21.7	14.3
	Top 3	50.0	33.3
Effects of Changing Labor Force on Property-type Performance	Most Important	21.7	38.2
	Top 3	80.0	69.5
Effects of Aging Population on Real Estate	Most Important	16.7	20.0
	Top 3	45.0	54.3
Effects of Structural Changes in Employment Demand	Most Important	51.7	33.3
	Top 3	80.0	57.1

*where percentage responding is over 50% and the rankings varied by more than 10%

¹Most Important=Ranking was 1; Top 3=Ranking was 1, 2 or 3.

²Interests are listed in the order found in the survey. Bold type indicates Top 3 percentage for funds with and without real estate professionals.

Source: Authors' calculations

the two subgroups. The most striking differences are the high level of interest in *Real Estate Pricing in a Capital Market Context* and the *Effects of Structural Change in Employment Demand* (80%) for those funds with real estate professionals while those without are most interested in the *Effects of Valuation Practices* (71.4%) and the *Amount of Real Estate Appropriate in a Mixed-Asset Portfolio* (64.8%).

When the rankings of the research subcategories are considered individually only a few areas were substantially different. First, when the subcategory of *Macroeconomic Forces Affecting Real Estate* is considered, the plans with in-house expertise ranked *Real Estate*

Pricing in a Capital Market Context (almost 92% ranked this subcategory within the Top 3 research interests), whereas those funds without real estate professionals were more interested in the basic question of timing *Real Estate Cycles* (81%). When the plans were asked various things about the broad category *Real Estate Investment Vehicles/Strategy*, the funds with real estate professionals were most interested in the *Potential Role of REITs in a Pension Portfolio* (41.7%), *Real Estate Sales and Exit Strategies* (46.7%), and the *Role of a Core vs. Opportunistic Portfolio* (38.3%)—all evidence of their experience with the asset class. The funds with no real estate professionals were primarily interested in the fundamental question of how to invest in real estate—*Open-Ended vs. Closed-Ended vs. Separate Accounts*.

Summary

Despite all of the recent research devoted to the role of real estate in a pension portfolio, the results of this plan sponsor survey indicate that many investors want additional research in order to be convinced that real estate should be an important component of their investment portfolios. With the exception of the largest funds, the most frequently cited broad research interest for the aggregate sample, as well as government and corporate funds, was *The Role of Real Estate in a Mixed-Asset Portfolio*.

As evidenced in this paper, there is considerable divergence when subtopics are considered within the entire sample and when responses are examined by size and type of fund. For the aggregate sample, respondents ranked five of the subtopics relatively closely as their number one research interest in each of the broad areas. However, the most consistently ranked subtopic appears to be *Real Estate Cycles and Their Predictability*. When separated by size and type of fund, the largest funds (which typically tend to be government funds) are generally more interested in subtopics relating to the performance of real estate, whereas smaller funds tended to show more interest in basic questions of how much real estate and which vehicle to use to make the investment.

Two basic recommendations come from this research. First, survey findings should be used to guide the type of research conducted as plan sponsors are indicating an unsatisfied need. Furthermore, the results can be used as a benchmark for documenting how research interests are changing over time as plan sponsors gain experience with the real estate asset class. Therefore, an on-going survey program would help mold future research agendas and guide future funding efforts.

Second, and perhaps more important, it is not lost on the authors nor on many readers that there has actually been a significant amount of research already completed on many of the salient topics identified in the survey as primary areas for further investigation. One issue that was not addressed in the survey that could shed some light on why institutional investors continue to question research topics that have already been studied is to ask the plan sponsors how existing research is presently being used. Particularly, is it that investors do not have access to the literature? Are the journal articles unreadable or too long and technical for pension fund investors? Or, is it that they have the journal articles but find them impenetrable or unactionable?⁹

Unfortunately, these questions were not asked. From the survey responses, however, it appears that there currently is no mechanism to ensure key research findings are disseminated to the institutional investor. To help facilitate the transfer of knowledge from the academic arena to the investment community, we would recommend the on-

going publication of "seminal" readings in real estate investment (similar to the selected readings published by the Institute of Chartered Financial Analysts relating to various asset classes) which are updated annually. This is needed to clearly communicate the practical implications of real estate research findings to the plan sponsor community. An additional resource that may help to disseminate real estate research is the new *Journal of Real Estate Portfolio Management*. This publication solicits manuscripts on all aspects of real estate investments and portfolio management and gives preference to empirical work relevant to the real estate practitioner.

Appendix

Survey of Plan Sponsor Research Interests

Introduction

This survey is designed to identify those topics that are of greatest interest to the real estate investment community. *The results will be used to help guide future research efforts that are intended to help the investment community better understand the asset class and its performance characteristics. As such, your participation is very important in that it will help shape critical research agendas. Please return your completed survey in the stamped envelope provided no later than December 18, 1992.*

The survey is divided into three sections. Section 1 presents broad research categories and asks you to rank them in order of importance to you. Section 2 provides the opportunity to identify the most important research topics within the broader areas. Section 3 asks for descriptive information to be used in interpreting survey results. Finally, Section 4 is for your comments or for additional topic areas that you feel are important, but were omitted from this survey.

After you have completed the survey, please place it in the postage paid envelope provided and mail it back to the National Council of Real Estate Investment Fiduciaries (NCREIF) at the following address:

National Council of Real Estate Investment Fiduciaries
909 A Street
Tacoma, Washington, 98402

To receive a copy of the survey results, which will be presented at the joint NCREIF/PREA conference in Dallas on March 24–26, please provide your mailing address:

Section 1. Broad Research Categories

Presented below is a sampling of broad research categories that are often discussed in today's market environment. After reading each one carefully and deciding which are most important to you, please *rank order* from 1 to 5 your top five (5) picks with "1" representing the most important topic. If there are other categories that have not been included, but which you believe are important, please supply them below and rank them accordingly.

- A. The Role of Real Estate in a Mixed-Asset Portfolio (Stocks, Bonds, etc.)
- B. Diversification within Real Estate Portfolios
- C. Macroeconomic Forces Affecting Real Estate (e.g., International Trade, Capital Markets)
- D. Microeconomic Forces Affecting Real Estate
- E. Performance Measurement of Real Estate Assets and Portfolios
- F. International Real Estate's Role in a Pension Portfolio
- G. Real Estate Investment Vehicles/Strategy (e.g., REITs, Passive vs Active Strategies)
- H. Property and Portfolio Risk Management
- I. Demographic Changes Affecting Real Estate
- J. Technological Changes Affecting Real Estate
- K. Regulatory/Public Policy Changes Affecting Real Estate
- L. Other: _____

Section 2. Category-Specific Topics

This section allows for the identification of more specific subtopics within broader research categories. Under each broad category listed below is a subset of more narrowly focused subtopics. *Within each of the broad categories*, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

I. *The Role of Real Estate in a Mixed-Asset Portfolio*

- A. How Much Real Estate is Appropriate in a Mixed-Asset Portfolio
- B. Asset Allocation in Real Estate Utilizing Modern Portfolio Theory
- C. Correlations of Real Estate with Other Asset Classes
- D. Recasting Real Estate Returns to be More Comparable with Stock and Bond Returns
- E. Investigation of Real Estate's Liquidity Compared to Other Asset Classes
- F. Real Estate's Market Capitalization Compared to Other Asset Classes
- G. The Role of Securitized Real Estate in a Mixed-Asset Portfolio
- H. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

II. *Diversification within the Real Estate Asset Class*

- A. Relationship of Different Property-type Returns and Their Impact on a Real Estate Portfolio
- B. Diversification Benefits of Nontraditional Real Estate (i.e., special use-properties)
- C. Market Capitalization of Various Real Estate Sectors
- D. Measures of Risk for Real Estate Performance
- E. Degree of Diversification Obtainable within Real Estate Portfolios
- F. Diversification by Manager
- G. Economic vs Geographic Diversification
- H. Performance Attribution
- I. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

III. *Macroeconomic Forces*

- A. Relationship between Real Estate Performance and Plan Liabilities
- B. Relationship of Real Estate Performance to Macroeconomic Factors (Foreign and Domestic)
- C. Capital Flows In and Out of the Asset Class
- D. Real Estate Cycles, Their Existence and Predictability
- E. Real Estate Pricing in a Capital Market Context (e.g., factors affecting cap rates)
- F. Impact of Global Capital Markets (e.g., interest rate/current rate competition for foreign and domestic funds)
- G. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

IV. *Microeconomic Forces*

- A. Individual Property-type Outlooks
- B. Supply Side Constraints (Legislated, Physical, etc.)
- C. Rental Rate Forecasts
- D. Tenant Credit Analysis
- E. Regional/Metropolitan Area Demand Analysis
- F. Effects of Just-in-Time Inventory Practices on Demand for Warehouse Space
- G. Viability of Different Retail Formats (community centers, power centers, regional malls)
- H. Forecasting Methodologies for Markets, Rents, Returns, etc.
- I. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

V. *Performance Measurement*

- A. Effect of Valuation Practices on Portfolio Returns
- B. Dividend Yield Reporting in Real Estate
- C. Appraisal Lags/Biases
- D. The Need and/or Utilization of Rental Rate Indexes
- E. Disaggregation of the Russell-NCREIF Index (e.g., separation of performance characteristics of individual properties of the Russell-NCREIF Index)
- F. REITs as a Proxy for Equity Real Estate Performance
- G. The Need for and/or Benefit of Transaction-based Return Indexes
- H. Applicability of Association for Investment Management and Research (AIMR) Performance Presentation Standards on Real Estate Managers
- I. Performance Measurement Standards in Other Countries (e.g., U.K., Australia)
- J. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

VI. *International Real Estate*

- A. The Role and Impact of International Real Estate on a Pension Fund Portfolio
- B. Foreign Investment Restrictions
- C. Capital Market Factors (e.g., interest-rate and exchange-rate risks)
- D. Impact of International Trade Developments on Domestic Real Estate Performance
- E. Free Trade Agreements and Their Impact on International Markets
- F. Performance Measurement Issues and Sources in Other Countries
- G. Real Estate Market Studies in Other Countries
- H. Securitized Real Estate Opportunities in Other Countries
- I. Impact of Global Financial Market Policies on Domestic and Foreign Real Estate
- J. Specific Countries of Interest:
1. _____ 2. _____ 3. _____
- K. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

VII. *Investment Vehicles/Strategy*

- A. Potential Role of REITs in a Pension Portfolio
- B. Open-ended vs. Closed-ended Funds vs. Separate Accounts

- C. Passive vs. Active Strategies (e.g., real estate derivatives)
- D. The Role of a Core vs. Opportunistic Portfolio
- E. Securitization of Real Estate Debt or Equity
- F. Real Estate Sales and Exit Strategies
- G. Liquidity Issues and Opportunities
- H. Foreign vs. Domestic Investment Vehicles
- I. Use of Leverage
- J. Equity vs. Debt
- K. Distressed Real Estate (e.g., Resolution Trust Corp., Real Estate Owned by Banks)
- L. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

VIII. *Property and Portfolio Risk Management*

- A. Enforcing Seller Representations and Warranties
- B. Identifying Non-insurable Disaster Risks
- C. Selecting Prudent Liability Insurance
- D. Compliance Audits for ERISA
- E. Tenant Credit Enhancements
- F. Engineering vs. Insurance: Effect on Investment Returns
- G. Using Environmental Insurance Products
- H. Analyzing Local and Regional Regulatory Risks
- I. Construction Warranties
- J. Reducing Ownership Risks through Lease Language
- K. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

XI. *Demographics*

- A. Effects of a Changing Labor Force on Property-type Performance
- B. Effects of Changes in Household Structure on Real Estate
- C. Effects of Regional Migration Patterns on Real Estate
- D. Effects of an Aging Population on Real Estate
- E. Effects of Immigration Patterns on Real Estate
- F. Comparison of Demographic Forecasting Techniques
- G. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

X. *Technological Changes Affecting Real Estate*

- A. Building Systems
- B. Transportation (e.g., global air cargo)
- C. Communications
- D. Construction Costs/Techniques
- E. Maintenance Costs/Techniques
- F. Effects of Change in Manufacturing/Industrial Production Processes
- G. Effect of Structural Changes in Employment Demand (decentralization of staff, employee time sharing, flex-time, home office use)
- H. Other: _____

Within the broad category below, rank order (1=Most Important) the three (3) specific subtopics that are of most importance to you. If there are subtopics you would like to add, please do so and rank them accordingly.

XI. Regulatory/Public Policy

- A. Tax Factors Affecting Real Estate
- B. Zoning/Planning Regulations
- C. Building Codes (e.g., Americans with Disabilities Act (ADA))
- D. Environmental Regulations Regarding Toxic Substances (e.g., asbestos)
- E. Other: _____

Section 3. Descriptive information

In each of the categories listed below, please circle the choice which is most appropriate. This information will be used solely to help interpret survey results.

- A. Size of Fund: 1. below \$1 billion
 2. between \$1 billion and \$4.9 billion
 3. between \$5 billion and \$9.9 billion
 4. above \$10 billion
- B. Type of Fund: 1. Government
 2. Corporate
 3. Taft-Hartley
- C. Dollars Currently Invested in Real Estate:
 1. none
 2. below \$50 million
 3. between \$50 million and \$99 million
 4. between \$100 million and \$500 million
 5. over \$500 million
- D. Does your organization have dedicated, in-house real estate professionals?
 1. Yes 2. No
- E. If you answered "Yes" to D. above, does your organization have in-house real estate research capabilities?
 1. Yes 2. No

Section 4. Comments

This section is devoted to your specific comments and, as such, is a critical part of the overall survey. Please feel free to address *any* issue related to this survey—its purpose, contents, structure, etc. In addition, if you have any opinions as to who should be commissioned to undertake the research agenda that derives from this survey, how it might be funded and how the results of the research should be disseminated, please let us know. Attach an additional page if you need more room. Your participation in the survey process is greatly appreciated.

Comments:

Notes

¹Also see this research for a historical summary of the institutional investor's movement into real estate investments.

²A copy of the survey can be found in the Appendix.

³However, if the survey is readministered in the future, interval scale questions may be used to see if different results would be obtained if a different style of questions was used.

⁴Furthermore, another factor influencing results could be the experiences and biases of the particular individuals completing the survey. Unfortunately, this factor was not controlled for in this survey and if a follow-up survey is completed, respondents should be asked to provide their job titles, their institutions and departments, and the number of years (if any) they have worked with real estate investments.

⁵Furthermore, the survey was designed by a committee. Clearly this approach is not ideal and if the survey is repeated, any weaknesses in the design will be corrected based on our experiences from the initial administration of the survey.

⁶Due to space limitations, for all of the analysis of the subcategories we provide only those research interests where a 1, 2 or 3 ranking were given by at least 50% of the respondents in the paper. Full results are available from the authors upon request.

⁷To increase the response rate, survey respondents were told results were confidential so which funds responded is unknown. With this information we could have ascertained the real estate allocation of each fund to determine if this truly varied by type of fund. Bajtelsmit and Worzala (1992) did find a slight difference in real estate allocations, with corporate funds holding an average of 4.71% in direct equity real estate while government funds held on average 3.78% in real estate. Their survey was also done in 1992.

⁸Since pension funds are tax-exempt for income tax purposes, the intent of this question was to get at the impact of property taxes affecting real estate. For very large, institutional investments in volatile markets this expense can be a significant part of the success of a particular investment so their interest is not surprising.

⁹If the survey is repeated, questions focused on the usability of existing research should be added.

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