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WORKING PAPER
A STUDY OF THE APPRAISAL PRACTICES
FOR PENSION FUND OWNED REAL ESTATE ASSETS

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INTRODUCTION

In 1974 Congress passed the Employee Retirement Income Security Act (ERISA) covering a broad range of issues with regard to pension funds. A section of the legislation called for diversification of pension funds' portfolio into investment vehicles other than the traditional stocks and bonds. Income producing real estate assets were a natural investment area for pension funds to diversify their portfolios. [1] Data is not available on the total real estate investment by pension funds, however, a Pension World survey in June of 1985 of firms that manage real estate portfolios for pension sponsors indicated total pension fund real estate assets for the 97 firms responding of over 181 billion dollars. [2]

Pension fund investment in real estate has included direct investment in real estate and investment with real estate asset management firms. A real estate asset management firm could hold real estate assets for a pension sponsor in a segregated account, a closed fund with pooled capital from several pension sponsors or a commingled real estate fund (CREF). The investment can be in the form of equity, joint venture, debt, participating or convertible debt or some combination. A segregated account isolates the individual pension fund's investment with an asset

1/ For a thorough discussion of reasons for pension funds' movement to real estate see Eagle, 1980.

2/ Pension World, 1985, the questionnaire was sent to 535 firms.

manager, the pension fund owns each individual property interest in the segregated account. Closed funds and CREFs both involve the purchase of a security in the form of a share in the fund by the pension sponsor, the asset manager would then purchase and manage real estate assets with the capital raised. Closed funds typically identify the real estate assets to be owned, specify a holding period and do not allow the pension sponsor to increase or decrease their investments over the holding period. A CREF allows the pension shareholders to make periodic investments or withdrawals from the fund based upon a current valuation of the real estate assets being held in the fund.

Unlike publicly traded stocks and bonds, whose current market value can be ascertained at almost anytime, pension fund real estate assets must be valued periodically to determine total pension fund assets in relationship to future obligations, to measure asset managers' performance and to set the exit and entry value for CREF's. The valuation process has generally involved an annual appraisal of each real estate asset by an independent outside fee appraiser and quarterly reviews by real estate asset managers' staffs.

With the growth of real estate investments in pension fund portfolios has come a concern about the valuation process for real estate assets. [3] Since real estate appraisal is, at best, an estimate of what a property would sell for and not its actual 'value' - which can only be determined by putting the property on the market for sale - any mistake in fact,

3/ Martin, Miles, October, 1984, and Roulac, 1982.

assumption, technique or calculation could cause the 'estimate' to vary substantially from the 'value.' In late 1984 the Homer Hoyt Institute funded the Real Estate and Urban Land Economics Department of the Graduate School of Business at the University of Wisconsin to conduct an independent study of pension fund valuation procedures. Consolidated Capital, through the Pension Real Estate Association (PREA), [4] matched the grant for the study.

This paper is a preliminary report of the findings and recommendations of the research team. The introduction will be followed by an explanation of the methodology used in the study combined with a data summary, the survey research results of the study and finally the recommendations of the research team including a letter of engagement [5] for the procurement of outside appraisal services.

4/ PREA is an association of real estate asset managers who manage for pension sponsors and related firms.

5/ The final report will also include a statement of appraisal protocols and policy.

RESEARCH QUESTION, METHODOLOGY AND SUMMARY DATA

The question addressed by this study is whether the current practices between real estate asset managers and independent fee appraisers lead to consistently accurate valuations of pension fund owned real estate assets? If these practices do not lead to consistent valuations then to develop a standard appraisal policy statement that would communicate from the executive board of the fund management to the investor certain rules that will be observed in the appraisal process, a standard set of appraisal protocols defining the relationship between the appraiser and client and a standard letter of engagement format with a set of minimum provisions for preparing the appraisal.

To evaluate the current practice in the valuation of real estate a letter was sent to pension fund real estate asset managers by the research team requesting that they complete a questionnaire, and forward it and any existing written appraisal policy and/or letter of engagement currently in use along with annual reports of the asset manager and representative appraisals of two of their properties under management for pension fund sponsors. While the study was partially funded by PREA, to avoid potential bias, the correspondence was sent to both PREA members and non-PREA member asset managers.

The data collected resulted in two data bases: the computation of the data from the questionnaire filled out by the asset managers about their current practices of hiring an outside

appraiser and performing in-house reviews and the results from a systematic review of the appraisals received from the asset managers. A total of 255 companies were initially identified as potential respondents. Of these, 19 were returned with no listing for the firm, 70 responded that their firms did work with pension funds but not in the area of asset management of real estate, and two firms worked together in the management of real estate assets. Of the remaining 165 firms, responses were received from 46 or almost 28 percent. Of the 46, two were discarded because of the high percentage of unanswered questions.

Exhibits 1 through 5 summarize the make up of the companies surveyed and the make up of their individual funds. Without adjusting for zero entries for any respondent, the firms that answered the questionnaire manage 169 funds with an asset value of over \$18 billion and have annual management fees of over \$90 million. Of the 169 funds, 69 were closed funds or just over 40 percent, 41 were segregated accounts or almost 25 percent, 20

EXHIBIT 1
DATA SUMMARY FOR QUESTIONNAIRE OF APPRAISAL POLICIES
TYPE FUND MANAGED, ASSET SIZE AND FEES

	NO. FUNDS	ASSETS \$ MM	FEES \$ M
No. of open end commingled funds	20	7129	46862
No. of closed funds	69	5632	31443
No. of segregated accounts	41	4888	8682
No. of mortgage funds	5	0	496
No. of joint venture funds	18	31	1385
No. of part. or conv. mtge funds	8	248	1541
No. of other	8	693	0
TOTAL	169	18621	90409

were CREFs, just short of 12 percent and 18 represented joint venture funds, 10.5 percent. The other 21 funds were either a form of debt fund or other fund type.

Adjusting the data for zero entries dropped the number of funds to 81 with assets of \$13.6 billion and management fees of \$86.5 million. While there are twice as many closed funds, their average asset size is less than a third of the CREFs. Segregated account funds were also more numerous than CREFs but their average asset size was one-fifth that of the CREFs. Management fees were almost identical between the closed fund and CREFs, Segregated accounts had a significantly lower management fee average of .42 percent of assets.

EXHIBIT 2
DATA SUMMARY FOR QUESTIONNAIRE OF APPRAISAL POLICIES
TYPE FUND MANAGED, ASSET SIZE AND FEES
EXCLUDING ZERO ENTRIES IN EITHER ASSETS OR MGMT FEES

	NO. CO'S.	NO. FUNDS	ASSETS \$ MM	FEES \$ M
No. of open end commingled funds	14	17	6756	46862
No. of closed funds	13	35	4471	29727
No. of segregated accounts	7	25	2053	8682
No. of mortgage funds	0	0	0	0
No. of joint venture funds	1	1	31	165
No. of part. or conv. mtge funds	2	3	240	1045
No. of other	0	0	0	0
TOTAL	37	81	13551	86481

	AV ASSETS \$ MM	AV FEES \$ M	FEES/ ASSETS
No. of open end commingled funds	397	2757	0.69 %
No. of closed funds	128	849	0.66 %
No. of segregated accounts	82	347	0.42 %
No. of mortgage funds			
No. of joint venture funds	31	165	0.53 %
No. of part. or conv. mtge funds	80	348	0.44 %
No. of other			
TOTAL	167	1068	0.64 %

Over one-half of the firms responding, 19 of 37, have total assets under \$100 million, however five have assets in excess of \$1 billion. Fifteen of 38 firms responding manage one fund and

EXHIBIT 3
DATA SUMMARY FOR QUESTIONNAIRE OF APPRAISAL POLICIES
SUMMARY OF ASSET SIZE OF RESPONDENTS

MILLIONS OF \$	# FIRMS
ZERO	7
>0 <100	19
100 <200	4
200 <300	1
300 <400	0
400 <500	2
500 <600	3
600 <700	2
700 <800	1
800 <900	0
900 <1000	0
>1000	5

29 firms manage less than 5 funds, however 4 firms manage at least 10 separate funds. The number of properties under management also varied greatly with 22 firms managing 14 or fewer properties while 6 manage in excess of 50.

EXHIBIT 4
DATA SUMMARY FOR QUESTIONNAIRE OF APPRAISAL POLICIES
SUMMARY OF # FUNDS MANAGED AND # PROPERTIES MANAGED

# OF FUNDS	# FIRMS	# OF PROP.	# FIRMS
0	6	0	5
1	15	0- 4	6
2	4	5- 9	8
3	6	10-14	8
4	4	15-19	2
5	1	20-24	4
6	1	25-29	2
7	2	30-34	2
8	1	35-39	0
9	0	40-44	1
10	2	45-49	0
>10	2	>50	6

Office buildings were owned by more firms than any other property type and more office buildings were owned (379 of the 1,278 properties, 30 percent) followed by industrial buildings, warehouses and shopping centers. Other property types, apartments, hotels and motels, mixed use structures, acreage and miscellaneous property types accounted for 198 of the 1,278 properties or 15.5 percent.

EXHIBIT 5
DATA SUMMARY FOR QUESTIONNAIRE OF APPRAISAL POLICIES
TYPE PROPERTIES OWNED

	CO'S	# PROP	AVE
Number of apts owned	5	76	15
Number of office bldgs owned	37	379	10
Number of shopping centers owned	27	167	6
Number of industrial bldgs owned	21	301	14
Number of warehouse bldgs owned	19	233	12
Number of hotels/motels	8	29	4
Number of mixed use structures owned	6	7	1
Number of ag land owned	2	10	5
Number of spec acreage owned	3	15	5
Other	14	61	4
TOTAL		1,278	

Exhibit 6 details the number of appraisals required, 1076, and their costs for the asset managers for 1984. Adjusting for nonresponse the 26 firms answering expended over \$3 million on 867 appraisals, an average cost of \$3,506. The average is for both original appraisals and update appraisals in subsequent years which, since the data is collected, should be much less expensive.

A total of 71 appraisals have been received from asset management firms. They have been divided into two data groups, 43 original appraisals and 28 update appraisals. Of these four of the original appraisals were discarded; two because they

represented property being appraised for sale [6] and the other two were short form appraisals of convertible mortgages. Two properties have two originals in the data set; each done by a different appraisal firm. Of the 28 updates received, six are excluded from the data set because the original appraisal was not received. This paper will concern itself with the original appraisals only, leaving the updates to another study.

EXHIBIT 6
DATA SUMMARY FOR QUESTIONNAIRE OF APPRAISAL POLICIES
NUMBER OF APPRAISALS AND COSTS

Number of interests req outside appraisals	1,076
Actual cost expended	3,123,000
Number of diff firms used	206
Average cost per appraisal	2,902
Observations excluding zero entries	26
Number of appraisals	867
Actual cost	3,040,000
Average cost	3,506

Exhibit 7 and 8 detail the property type and year the appraisals were performed. While it is surprising that only three appraisals on industrial buildings were received, the figures for office buildings, warehouses and shopping centers are in line with the ownership patterns seen earlier. There is an almost even spread in appraisal dates between 1982, 83 and 84 with just five prior to or after those dates. Nine of the appraised properties are in California, eight in Texas, four in Florida and three in Illinois. The other 15 are geographically spread from Rhode Island to Washington state and Minnesota to Louisiana.

6/ One, a condominium conversion, the other an industrial lot sale appraisal.

EXHIBIT 7
SUMMARY OF DATA FROM CHECK LIST OF APPRAISALS RECEIVED
APPRAISAL BY PROPERTY TYPE

PROPERTY TYPE	NUMBER OF APPRAISALS
Apartments	1
Office buildings	15
Shopping centers	7
Industrial buildings	3
Warehouse buildings	<u>13</u>
Total	39

EXHIBIT 8
SUMMARY OF DATA FROM CHECK LIST OF APPRAISALS RECEIVED
APPRAISALS BY YEAR PERFORMED

YEAR	NUMBER OF APPRAISALS
1980	1
1981	2
1982	10
1983	12
1984	12
1985	2

The research team would have preferred both more questionnaires and appraisals in the data set. There were three reasons that the response rate was kept down; the length of the questionnaire, 14 pages; the proprietary nature of the data requested, including appraisals; and research on appraisals is a sensitive issue. The sensitivity of the issue was probably the most important factor; some members of PREA and the National Council of Real Estate Investment Fiduciaries (NCREIF) [7] felt that the research should not be conducted by a public university because any negative opinions could cut the flow of funds from

7/ NCREIF, like PREA, is an association of real estate asset managers for pension funds. Its membership is much smaller but the members make up the largest asset managers in terms of asset size. Many of the firms are members of both associations.

pension funds. An alternative opinion, held by the research team, is that a standardization of the appraisal process that would provide more reliable measures of value may help the flow of funds to the asset managers. Never the less, with the dispersion by asset size of the managers, and property type and geographical location for the properties appraised it is felt that the sample received is representative of the state-of-the-art in the appraisal of pension fund real estate assets.

ANALYSIS OF QUESTIONNAIRE
FILLED OUT BY ASSET MANAGERS

The following analysis from the questionnaire filled out by 44 pension fund asset managers will be aimed directly at the managers' responses as they relate to the hiring of an outside appraiser for the original valuation of a real estate asset. [8] The analysis will encompass four areas of inquiry:

1. existing policy in the organization
2. factors that lead the asset manager to hire an appraisal firm
3. information supplied to the appraiser
4. attempts to control the appraisal process by the asset manager

This section of the paper is a reporting of the data gathered, the significance of the data, for other than informational value, will become apparent when the appraisals are analyzed in light of the asset managers' responses and appraisal theory.

Of the 44 respondents, 21 had a written appraisal policy at least some of the time (17 all the time), five have an unofficial written policy and five others have a policy at least some of the time. Eleven have no written policy concerning the hiring of, or control of the appraiser or the appraisal process. Of the 21

8/ The questionnaire contained information on the original appraisal, updates by the same appraiser and the in-house review process. With over two hundred data points on this questionnaire and over three hundred on the check list of appraisals, to limit the length of this paper, this restriction was deemed appropriate. Analysis and conclusions of the balance of the study will be included in future works.

with a written policy, 13 use a letter of engagement for the hiring of the appraisal firm. A letter of engagement from the appraisal firm is used by 11 firms at least part of the time and the pension sponsors for these 44 firms have never provided a letter of engagement and only five have a written policy from a pension sponsor [9] regarding the valuation process.

In the process of hiring an outside appraiser, it is evident that a professional designation from one of the appraisal associations is of utmost importance. Thirty firms stated that it was required by their organization (in some instances at the insistence of the pension sponsor) and nine additional firms do not require a designation but a designated appraiser is usually used. Only two firms stated that they preferred an analyst other than a designated appraiser.

The asset managers were asked to rank from one to five the important considerations in hiring an outside appraiser. The results of using a weighted score of five for the most important factor to one for the fifth most important factor are included in Exhibit 9.

EXHIBIT 9
RANK OF MOST IMPORTANT FACTOR IN HIRING
AN OUTSIDE APPRAISAL FIRM

	SCORE	RANKED FIRST
Importance of national firm	81	9
Importance of local firm	165	22
Importance of nationally specialized firm	62	3
Importance of no. of designated appraisers	44	2
Importance of firm you have worked with	127	6
Importance of cost of appraisal	70	1
Importance of referral	72	2
Other	35	3

9/ While it was not asked, it can be presumed that each asset manager has multiple pension sponsors.

By far, asset managers rank the importance of a local firm (a weighted score of 165) as the most important consideration in hiring an appraiser. One half (22) of the firms responding considered this the most important item, another quarter (11) ranked it second, two third, two fourth and one ranked it fifth. Only six of the 44 asset managers failed to rank the importance of a local firm. The importance of a firm that the asset manager had worked with ranked second (a weighted score of 127) with only five asset managers failing to rank it as important. The third most important consideration was the importance of a national firm (a weighted score of 81). Nine of the managers ranked it the most important factor and 13 others considered it important enough to rank. Initially, the low score for the importance of a designated appraiser was surprising with the results mentioned above. However, it appears in answering this question, the asset managers assumed that they would hire a designated appraiser and then ranked the most important factors. This theory is born out by the fact that of the 71 appraisals received, 67 were signed by an MAI or SREA. Cost, which did not fair well on the weighted score, was the third item in terms of the times ranked in the top five; 75 percent of the firms (33) ranked cost as one of the five most important factors. Cost only appears to be important if the first two factors are met.

Specialization by property type was considered important by almost half of the asset managers (21). Direct specialization with hotels/motels, (75 percent of the firms that have hotels in their funds deemed specialization important) and warehouse buildings (32 percent of the firms that have warehouse buildings

in their fund deemed specialization important) were the most significant specializations required.

To summarize, it appears that asset managers are hiring a designated appraiser with local routes in the subject properties community that they have worked with before and for certain property types require specialization.

Information supplied to the appraiser in the majority of the cases is coming from the asset management firm, secondarily from the property management firm and only in a few instances from the Certified Public Accounting firm that performs the audit. Exhibit 10 indicates the frequency with which selected information is provided to the appraiser.

EXHIBIT 10
FREQUENCY OF INFORMATION SUPPLIED TO THE APPRAISER

	ALL THE TIME	NEVER PROVIDED
gross revenue	30	2
operating expenses	30	2
BTU usage	23	5
KW hour usage	23	4
reimbursables collected	31	2
tenant improvements amortized	27	3
leasing commissions amortized	26	4
leasing comm payable	25	4
rent delinquencies	31	2
space rented but not occupied	31	2
CAM charges	33	2
relative reimbursables collected	28	2
non real estate income	31	2

Additional information that is available to the appraiser and its frequency of availability is included in Exhibit 11.

EXHIBIT 11
 INFORMATION THAT IS AVAILABLE TO THE APPRAISER

	ALL THE TIME	MOST OF THE TIME	SOME OF THE TIME	NEVER
architectural review	29	4	6	2
structural engr audits	29	3	6	3
energy audits	27	2	8	4
thermography studies	25	3	5	6
legal counsel	19	0	7	12

Any attempt by the asset manager to control the appraisal process may be as a result of a desire to specify the definition of value or which specific real estate parcels or interests are to be valued separately or to limit the appraiser to only those techniques and/or assumptions that the asset manager views as relevant for the valuation of the property. A starting point of what the asset manager wants out of the appraisal must start with the definition of rights to be valued. The following question was asked as part of the asset managers' questionnaire:

11. Which of the following represents, in terms of definition of interest to be appraised and definition of value, full disclosure to the investors in your fund?
 - a. Would you report only the net investment value of a property encumbered by existing leases, benefited by assumable financing and other entitlements, and including personal property, cash reserves, OR
 - b. Would you report fair market value as defined by the institute, assuming a cash sale and then report the net investment value which could be attributed to assumable financing, existing leases, personal property or intangible assets.
 - c. Do you give the appraiser direction as to the definition of value to be applied and any segregation of interest such as assumable financing, leasehold encumbrances, or non real estate assets to be valued separately.

The results from question number 11 are split; of the 34 who answered, 16 would report net investment value only and 18 would report both market value and then net investment value. Nineteen of the asset managers indicated they provide the appraiser with the definition of value and segregation of interests to be valued separately. Assets that are to be valued separately are listed in Exhibit 12. Along with land and buildings, surplus land, leasehold values and the value of assumable financing are valued separately most often.

EXHIBIT 12
SEGREGATION OF INTERESTS
TO BE VALUED SEPARATELY

	ALWAYS	MOST TIMES	SOME TIMES	NO
land	29	1	5	7
surplus land	18	3	11	5
bldg/structures	27	2	7	6
working capital	2	1	4	27
personal ppty	2	1	15	18
fncg pkg (if transf)	14	2	11	10
existing lseholds	17	3	10	7
amortizing assets	4	2	10	20
intangible assets	1	0	6	27
other	2	0	1	7

With regard to controlling techniques and/or assumptions, Exhibit 13 depicts the tabulation of the asset managers' responses to a series of questions regarding techniques and assumptions to be used in the appraisal process. There is a great disparity in the answers: while over 88 percent of the asset managers require the appraiser to identify comparable properties and identify terms of sale, only 9 percent limit the appraisers qualifying and limiting conditions, and 25 percent (11) limit techniques or methods used, of these 11 the predominant comment was to require discounted cash flow analysis,

EXHIBIT 13
ASSET MANAGER'S CONTROL OF TECHNIQUES
AND OR ASSUMPTIONS

	YES	% YES	NO
Supply appraiser with a range of inflation adjustment	14	40.0	21
Appraiser sets own percentage adjustments	35	94.6	2
Supply appraiser with GIM or NIM or other formula	4	9.3	39
Put limits on methods and techniques to be used	11	25.6	32
Limit qualifying & limiting conds	4	9.1	40
Reserve right to audit appraiser files	10	22.7	34
Require appraiser to specify terms of sale and define and identify comparables	39	88.6	5
Control conflict between cash and accrual accounting	18	47.4	20
Appraiser supplied with cash flow format	5	11.4	39
Appraiser allowed to use their own spread sheet	35	87.5	5

and while 40 percent supply the appraiser with a range of inflation adjustments the appraiser is allowed the freedom to establish the rates 95 percent of the time. Significantly, over 47 percent are attempting to control the potential conflicts between cash flow forecasts and historical accrual accounting methods. Finally, questions were asked regarding the appraisal review processes. Twenty asset managers always have their CPA firms review the appraisals for reasonableness of financial projections, while three do most of the time and six some of the time. Fourteen never have their CPA review the appraisal. In addition, 36 of 40 have an established appraisal review process by a combination of property managers (involved 80.5 percent of the time), the investment committee (involved

42.9 percent of the time), and the pension sponsor's account manager (involved 11.4 percent of the time).

The next section of this paper will analyze the results of the check list prepared on the 39 original appraisals provided by the asset managers. The results of the asset managers' responses to the questionnaire, along with appraisal theory, will be used as one of the guides in judging the appraisals.

ANALYSIS OF ORIGINAL APPRAISALS RECEIVED

The following analysis of the 39 original appraisals received in the study will attempt to cover three areas:

1. Explain the data gathered as a result of the study
2. Uncover any discrepancies between the content of the appraisals and appraisal theory
3. Detail any discrepancies between the content of the appraisals and what the asset managers expect according to the questionnaire discussed in the last section.

The discussion will follow the normal appraisal sequence, covering general information, followed by the market and marketability section, land valuation and cost approach, the market approach, the income approach and finally overall evaluation of the appraisals. The individual appraisals will then be scored on their content and techniques used and conclusions drawn from the questionnaire and appraisal sections will be made.

All 39 of the original appraisals are full narrative reports, a summary of property type, location, size and valuation is contained in Exhibit 14. Thirty-three stated that their objective was to appraise the leased fee of the subject property, the other six appraised the fair market value of the subject property. All but one appraisal valued the subject as defined.

EXHIBIT 14

SUMMARY OF THE APPRAISALS RECEIVED IN THE PREA APPRAISAL STUDY

PROPERTY TYPE	CITY	ST	DATE	# UNITS	VALUE \$MM	VAL/UNIT	# UPDATES
1 SHOPPING CENTER	SUN CITY	CA	8503	85058	4.300	51	0
2 OFFICE/WAREHOUSE	DALLAS	TX	8407	202236	4.100	20	0
3 SHOPPING CENTER	DURHAM	NC	8411	64052	4.550	71	0
4 APARTMENTS	HOUSTON	TX	8210	545	18.000	33028	0
5 SHOPPING CENTER	COLORADO SP	CO	8301	250804	8.500	34	0
6 OFFICE BUILDING	BELLVUE	WA	8409	82894	8.000	97	0
7 OFFICE/WAREHOUSE	MOUNTAIN VI	CA	8312	119041	9.000	76	0
8 OFFICE BUILDING	SACRAMENTO	CA	8307	50701	5.900	116	0
9 OFFICE/WAREHOUSE	SO SAN FRAN	CA	8412	67058	3.765	56	0
10 OFFICE/WAREHOUSE	NAPERVILLE	IL	8502	40500	1.050	26	0
11 INDUSTRIAL BUILDING	ELK GROVE	IL	8409	82620	2.075	25	0
12 OFFICE BUILDING	PLEASTON	CA	8312	50820	7.900	155	0
13 OFFICE BUILDING	SAN FRAN	CA	8312	25267	6.550	259	0
14 OFFICE/WAREHOUSE	NILES	IL	8405	61675	1.620	26	0
15 OFFICE BUILDING	LONG BEACH	CA	8303	54800	2.610	48	0
16 OFFICE/WAREHOUSE	MEMPHIS	TN	8409	586642	11.500	20	0
17 SHOPPING CENTER	NEW SMYRNA	FL	8410	104434	5.000	48	0
18 OFFICE BUILDING	FORT WORTH	TX	8404	239070	15.750	66	0
19 OFFICE BUILDING	WARWICK	RI	8312	61273	3.660	60	1
20 OFFICE/WAREHOUSE	NASHVILLE	TN	8207	23875	0.591	25	1
21 INDUSTRIAL BUILDING	OMAHA	NE	8212	47577	1.040	22	1
22 INDUSTRIAL BUILDING	SANATA CLARA	CA	8309	120400	4.800	40	1
23 OFFICE BUILDING	ORLANDO	FL	8412	247609	24.500	99	1
24 OFFICE/WAREHOUSE	GRAND PRAIR	TX	8208	100000	2.880	29	0
25 OFFICE/WAREHOUSE	GRAND PRAIR	TX	8409	100000	2.880	29	0
26 OFFICE BUILDING	ADDISON	TX	8309	121190	9.750	80	1
27 OFFICE/WAREHOUSE	SPRINGFIELD	VA	8303	105600	3.348	32	1
28 SHOPPING CENTER	DAYTONA BCH	FL	8406	402176	46.100	115	1
29 OFFICE BUILDING	ATLANTA	GA	8303	197870	7.750	39	1
30 OFFICE BUILDING	CAMBRIDGE	MA	8206	118711	14.100	119	1
31 OFFICE/WAREHOUSE	TEMPE	AR	8109	88582	3.135	35	1
32 OFFICE BUILDING	KNOXVILLE	TN	8007	49731	3.630	73	2
33 OFFICE BUILDING	ORLANDO	FL	8312	124800	5.300	42	1
34 OFFICE BUILDING	METHIRIE	LA	8207	111199	7.950	71	3
35 OFFICE/WAREHOUSE	HOUSTON	TX	8112	168387	3.170	19	1
36 OFFICE/WAREHOUSE	HOUSTON	TX	8212	168387	3.100	18	1
37 OFFICE BUILDING	IRVINE	CA	8312	34767	5.650	163	2
38 SHOPPING CENTER	MINNETONKA	MN	8206	57861	4.600	80	0
39 SHOPPING CENTER	BURNSVILLE	MN	8206	66142	3.200	48	2

Exhibit 11 in the last section indicated that studies and access to information on the subject property were available to the appraiser the majority of the time, legal counsel being the lowest with the information never provided by 27 percent of the asset managers. Of the 39 appraisals reviewed, a total of one structural engineering study was cited by the appraiser and none referenced architectural reviews, energy audits, thermography studies or assistance from the clients' counsel. Either the studies are not as available as the asset managers indicated or the studies were available and the appraiser either did not ask for them, did not use them, or used them and failed to reference them.

The review of the market and marketability section included a tabulation of demographic data presented in the appraisals, a tabulation of information on the subject properties competition, and a tabulation of data on the subject properties market; the last two being the indication of supply and demand the ingredients to scarcity, one of the 'Factors of Value' in appraisal theory. [10] Exhibit 15 indicates the data that was presented in the appraisals for selected demographics for current, past (time series), and future projections. Of the 210 (35 appraisals X 6 data items) potential listings of data in the three categories, data was provided for current levels, 81 (38.6 percent) times, for past or time series data 54 (25.7 percent) times and for future projections 8 (3.8 percent) times. Of the total potential data entries of 630 for the three categories they

10/ American Institute of Real Estate Appraisers (AIREA), p. 31 & 32.

EXHIBIT 15
NUMBER OF APPRAISALS THAT
PRESENTED DEMOGRAPHIC DATA

	CURRENT	PAST	PROJECTIONS
population	30	22	6
employment general	11	8	0
employment by industry	17	7	1
household income	11	8	0
construction permits	10	8	0
other	2	1	1

note: four appraisals did not present a regional analysis

were provided 143 (23.4 percent) times, a remarkably low figure given the availability of current and past data and the less available but prevalent data on future projections and the emphasis that appraisal theory places on such information:

"General data are essential in valuation because they provide a background against which to place specific properties being appraised; (2) supply information from which possible trends affecting land values can be inferred and figures for appraisal calculations within the three approaches can be derived; and (3) form a basis for judgments about highest and best use, reconciliation of value indications within the approaches, and the final estimate of defined value (emphasis added). [11]

Data on the supply of competitive space was gathered from the regional, community, and neighborhood sections of the report, as well as from the income section in the determination of market rents. Exhibit 16 indicates the number of competing properties that were specifically identified. In three cases the competing properties identified represented the total population of competition, not surprising since most of the subject

11/ Ibid. p 107.

EXHIBIT 16
NUMBER OF COMPETING PROPERTIES
SPECIFICALLY IDENTIFIED

NO. OF PROP.	NO. OBSER.
0	2
2	1
3	2
4	9
5	6
6	2
7	3
8	3
9	2
10	3
11	3
15	1
34	1
50	1
AVERAGE	8.4

properties were in relatively large metropolitan areas. Of the 38 appraisals that recognized competing properties all included data on the competition's rent structure but just over half (20, 52.6 percent) provided data on the competition's vacancy rate. In determining the earning power for a subject property AIREA recognizes seven forms of data that are necessary, the fourth is "actual vacancy levels for the subject and competitive properties" (emphasis added). [12] Not including data on the competition's vacancy level makes a thorough supply and demand analysis impossible and it would seem to make the estimation of the subject property's projected occupancy, at best, an estimate that is not well supported by documentation and, at worst, a guess at what might happen in the future.

12/ Ibid., p.351.

Of importance to the supply analysis and the determination of the subject's vacancy rate is current and projected supply. [13] The number of competitive properties under construction along with current competition would make up the projected future supply. They add to the available space and often, because they are new construction, are superior to the subject. In only 15 (38.5 percent) appraisals was there a mention of projects under construction.

Of a more subjective nature each appraisal was judged as to whether the information provided about the supply of competitive space was used in the valuation process and whether it should have been. In seven (23.3 percent) of the appraisals, the information was specifically used in the valuation process while it should have been used in 30 of the appraisals. Twenty-three of the appraisals did not explicitly use information on the supply of competitive space in the valuation process.

Demand for space is usually calculated through either defining a primary trade area and estimating its size and then projecting a capture rate or from historical absorption rates for various types of space, and then a projection can be made about future absorption levels. Of 39 appraisals, 11 (28.2 percent) identified the primary trade area and the size of the market and 8 (20.5 percent) identified historical absorption rates. A total of 19 (48.7 percent) made an estimate of the demand for the space they were valuing. Only 8 discussed current and future economic

13/ Ibid., p. 361.

factors and their impact on demand and, of the 31 appraisals that it was judged should have used current and future demand in the appraisal process, only 3 (9.7 percent) actually did explicitly use estimates of demand or economic conditions relative to demand to adjust the valuation. The three sets of data: general data on the region, the level of competitive supply; and, the level of demand, are the keys to the economic environment in which the subject property must compete. The majority of the the appraisals under study did not use this data effectively in their valuation.

Each of the appraisals were scored on a point basis (5=excellent, 4=good, 3=average, 2=fair and 1=poor, a zero entry indicated that the appraisal did not contain this analysis). The scores for the 39 appraisals under study were:

EXCELLENT	1
GOOD	6
AVERAGE	15
FAIR	12
POOR	5
NO ANSWER	0

Of the 39 appraisals in the study, 32 performed a cost approach to value, however, in only one of these did the cost approach add to the valuation. The valuation of the land, as part of the cost section, is valuable added data concerning the market comparison approach to value. The asset managers, in the questionnaire, indicated that this area was one that they made specific requirements, namely to identify comparable properties and specify terms of sale.

Exhibit 17 details the analysis of the comparable properties for both the land valuation and market approaches to value. A

market derived land value was presented in 32 appraisals and a separate market comparison section for the subject in 36, or a total of 68 observations. Both valuations averaged between six and seven comparables, with four (16.2 percent), five (23.5 percent) and six (16.2 percent) being the most frequent.

Comparable properties were identified over 92 percent of the time but of the combined total of 68 market comparison approaches, only 27 (39.7 percent) specifically identified terms of sale. Over 60 percent did not mention terms of sale and yet of the elements to be considered in making comparisons, terms of sale is listed first in appraisal literature. [14] Over 88 percent of the asset managers required that the comparable properties be identified and terms of sale be specified. Of the 27 who identified terms of sale, 8 specifically adjusted for terms of sale, 5 were all cash sales and 14 (51.9 percent) made an assertion that adjustments were made for terms of sale but the reader was unable to replicate the results of the analysis. In making overall adjustments to both the land valuation and market comparison section almost 90 percent used the same process of asserting that adjustments had been made without specifying other than direction what the adjustments were. Traditional appraisal theory asserts that there are two ways to make adjustments [15] in percentages or in dollars.[16] Appraisal theory does not

14/ Ibid., p. 314.

15/ Contemporary theory asserts that a point score method is better, see Ratcliff, 1972.

16/ AIREA p. 317.

allow an analyst to assert that an adjusted price of so many dollars per square feet is the value of the comparable. The reader might have been more comfortable with the adjustment process if a statistical tool (e.g., mean, standard deviation or regression analysis) had been used to statistically check the results and/or measure the dispersion of the comparables, however this was not done in any of the 68 market comparison approaches.

The failure of some appraisals to identify terms of sale or, if identified, to fail to adjust for them and the adjustments made by assertion rather than by process that could be duplicated by the reader led to a relatively low rating of the market comparison approach with 55 of the 68 failing to receive a rating above average and 20 receiving either fair or poor ratings. It is unfortunate that the market approach overall was at best average because "(w)hen adequate data are available, the sales comparison approach is usually considered the most accurate and reliable appraisal approach." [17] With 32 of the market comparison approaches for the subject property having four or more comparables, adequate data would seem to have been available.

17/ Ibid., p. 331.

EXHIBIT 17
MARKET COMPARISON APPROACH TO VALUE

	LAND		SUBJECT		COMBINED	
	OBS.	% TOT	OBS.	% TOT	OBS.	% TOT
Market comparison included	32	82.1	36	92.3	68	87.2
Comparables specifically identified	28	87.5	35	97.2	63	92.7
Number of comparables						
2	1	3.3	1	2.8	2	2.9
3	0		3	8.3	3	4.4
4	5	15.6	6	16.7	11	16.2
5	11	34.4	5	13.9	16	23.5
6	5	15.6	6	16.7	11	16.2
7	2	6.3	4	11.1	6	8.8
8	4	12.5	3	8.3	7	10.3
9	1	3.3	2	5.6	3	4.4
10	0		2	5.6	2	2.9
11	0		2	5.6	2	2.9
13	2	6.3	1	2.8	3	4.4
17	0		1	2.8	1	1.5
21	1	3.3	0		1	1.5
AVERAGE	6.5		6.6		6.6	
Terms of sale identified	7	21.9	20	55.6	27	39.7
Adjustments for terms						
Yes	0		8	40.0	8	29.6
All cash sales	3	42.9	2	10.0	5	18.5
No, ignored	4	57.1	10	50.0	14	51.9
Adjustments for terms were						
Specifically computed	0		4	50.0	4	50.0
An assertion that adjust. were made	0		4	50.0	4	50.0
Overall adjustments were						
Calculated--\$ per difference	4	12.5	3	8.3	7	10.3
An assertion that adjust. were made	28	87.5	33	91.7	61	89.7
Rating of market comparison						
Excellent	0		2	5.6	2	2.9
Good	5	15.6	6	16.7	11	16.2
Average	19	59.4	16	44.4	35	51.5
Fair	5	15.6	9	25.0	14	20.6
Poor	3	9.4	3	8.3	6	8.8

Since all 39 appraisals under study are on income producing properties, the income section of the appraisal received the most attention. Because different techniques of converting income estimates to a value conclusion require different data, the techniques themselves will be explored first and then the data provided to arrive at the value indication will be analyzed. Exhibit 18 details the frequency of each of the techniques used in converting income projections to value estimates in the appraisals under study. By far, discounted cash flow and direct

EXHIBIT 18
INCOME SECTION TECHNIQUES USED

	NO.	% TOT
Discounted cash flow	28	71.8
Direct capitalization	24	61.5
Backdoor type analysis	2	5.1
Band of investment	1	2.6
Other-- i.e. Building residual	2	5.1

note: percentage will not add to 100 percent because multiple techniques were used in some appraisals

capitalization were the preferred technique. Of those using multiple techniques (14 appraisals), 13 preferred one method over the other (the other stated no preference), 11 of these preferred discounted cash flow and 2 preferred direct capitalization over discounted cash flow. It is amazing that 11 of the appraisals did not perform a discounted cash flow analysis and two others preferred direct capitalization over discounted cash flow. Particularly, since 36 of the 39 properties have multiple tenants on relatively short term leases.

In arriving at their income estimate 29 of the appraisals relied on the existing leases on the subject property and ten

used market rents exclusively (six of the ten were under construction as new or substantially remodeling at the time of the appraisal). Exhibit 19 depicts whether separate estimates of various revenue and expense categories should have been made and, if they should have been, if they were. Separate estimates are necessary when discounted cash flow is used because different revenue and expense categories occur at different times.

EXHIBIT 19
ESTIMATION OF INCOME

REVENUE CATEGORY	SHOULD HAVE SEPARATE EST	DID HAVE SEPARATE EST
base rent	39	38
overage rent	6	6
cam	9	6
escalators	13	10
reimbursables	23	15
EXPENSE CATEGORY		
tenant impr	34	10
leasing commissions	34	17
programmed refurb	22	15

Overall, there was more consistency in handling income than expenses with separate estimates not being made when they should have been in only nine of 89 times. The expenses were not estimated separately over half the time, 48 of 90. For these categories, if discounted cash flow is used, the timing of both income and the outlay of cash for expenses must be estimated. Exhibit 20 indicates how many times these categories of income and expenses were adjusted to match their cash flow pattern. Expenses were adjusted for cash flow more often than income and only two appraisals recognized the fact that income, other than base rents, is not usually known, therefore, until well into and often after the end of the year, therefore, thus, this income

tends to trail the receipt of base rents. Likewise, while accounting standards would amortize leasing commissions and tenant improvements over the length of the lease, to get an accurate estimate of cash flow their actual expenditure date, when the lease is renewed, must be estimated. An estimate was made as to the date and amount of the expenditure in nine of the appraisals. It can be argued that 11 of these did not include a discounted cash flow statement and thus could not have made such an estimate. The very reason that they did not make the estimate in using direct capitalization provides the justification that they should have performed a discounted cash flow analysis with tenant improvements and leasing commissions taken into account.

EXHIBIT 20
INCOME AND EXPENSES ADJUSTED FOR CASH FLOW

INCOME CATEGORY	SHOULD HAVE BEEN ADJUSTED	WAS ADJUSTED
overage rent	6	0
cam	9	1
escalators	12	0
reimbursables	21	1
EXPENSE CATEGORY		
tenant impr	36	9
leasing commissions	36	9
programmed refurb	14	5

Rent concessions were mentioned in five of the appraisals but were used in adjusting current income in only three and future income in only two cases.

For those appraisals that used discounted cash flow, the future level of both income and expenses had to be estimated. Virtually all of the appraisals tied future levels of income to

market rents combined with anticipated lease renewals. Both expenses and market rents were assumed to increase on a percentage per year basis. Exhibit 21 details the percentages used for each. For both income and expenses, the most commonly used rate was six percent, 13 of 24 for income and 11 of 20 for expenses. In only two cases did the analyst link the growth rate used to some index, like the Consumer Price Index or by past history of rent escalation for the property type. The reader was asked to accept the appraiser's judgment on this assumption that is so critical to the valuation. In no case was the growth rate in income linked to the market supply of competitive space. Even in periods of relatively rapid inflation, rent increases are difficult to pass on in areas of excess supply of space. Only one appraiser calculated what the total occupancy cost in the future for the tenant as a result of their growth assumption for rents.

EXHIBIT 21
ASSUMED GROWTH RATE IN INCOME AND EXPENSES

GROWTH RATE	OBS.	OBS.
0	14	19
1	0	0
2	0	0
3	0	1
4	0	0
5	6	3
6	13	11
7	3	3
8	2	2

note: zero entries included 11 appraisals that did not use discounted cash flow

While there was little doubt that the appraisers had been supplied actual operating histories for the properties in question, in only eight cases were they presented in either the body of the text or in appendices. Other historical data such as energy usage, reimbursables collected, leasing commissions, and tenant improvements were never mentioned.

Because of the special nature of tenant improvements and leasing commissions additional data was gathered on these items (for discounted cash flow to adequately estimate the flow of expenditures for commissions and tenant improvements and to estimate some deduction to normalized income for each if direct capitalization is used). Lease renewals should have been anticipated in 36 of the 39 appraisals. Of the 36, 26 (72 percent) actually did recognize renewals. Leasing commissions were estimated adequately for 18 of these 26, while one estimate was too low and seven ignored them all together. Appraisal theory [18] states that leasing commissions, other than initial expenditures, which are in the capital budget, should be included in the operating statement. [19] Tenant improvements were adequately estimated 11 times (42 percent) and ignored the other 15 times. Appraisal theory again would require these to be estimated in the operating statement. [20]

18/ This author must take exception with AIREA policy in stating that commissions can be deducted in the year payable or expensed over the lease term (AIREA p. 365.). An estimate of cash flow must estimate when the cash expenditure is made and never use accrual accounting techniques.

19/ AIREA p. 365).

20/ Ibid., p. 369.

There was a disparity in the handling of reimbursable expenses in the appraisals. Of the 23 appraisals that had reimbursable expenses, 13 included the reimbursement in income and the expense in the expense section, 10 netted the two out and thus did not put them in the income statement. Appraisal theory is very clear on the handling of reimbursables, they are to be included in income and deducted in expenses. [21] To net them out, as 43 percent of the appraisals did, overstates income because it assumes that expenses are reimbursed for all space when, in effect, the reimbursement can only be anticipated for rented space, no reimbursement will come from vacant space.

"The percentage (of vacancy) varies according to the type and characteristics of the physical property, the quality of the tenancy, **current and projected supply and demand relationships**, and the general and local economic conditions (emphasis added)." [22] All appraisals were examined to determine if the estimated vacancy rate was in line with historical operating results, the competitive supply for that type space, and the market demand for that type space. Exhibit 22 summarizes the results.

EXHIBIT 22
VACANCY RATE ESTIMATION ANALYSIS

VACANCY--	YES	NO	DATA NOT PROVIDED
In line with hist. data	29	9	0
In line with market supply	20	6	12
In line with market demand	21	3	14

21/ Ibid., pp. 360 & 361.

22/ Ibid., p. 361.

While 74 percent of the appraisals estimated the vacancy rate in line with historical data over 40 percent were not in line with market supply and/or demand or the information was not provided to ascertain if it was in line. The shortcomings mentioned earlier in the market and marketability analysis are of primary concern when estimates of vacancy losses are made.

Reserves for replacement and additions to the capital account is the last area to be covered in arriving at an estimate of net operating income. Only 23 of the 39 appraisals made an estimate for replacements, two others specifically mentioned that it was in their estimate of repairs and maintenance. Of these, only one actually tried to estimate when major expenditure might occur, the balance used a reserve account deduction.

Each of the components of the operating statement was rated, as to technique and content. Exhibit 23 gives the results of these ratings:

EXHIBIT 23
RATING OF THE COMPONENTS TO
NET OPERATING INCOME

CATEGORY	EXCEL.	GOOD	AVER.	FAIR	POOR
Estimation of market rents	8	25	4	0	2
Gross revenue	1	19	13	4	2
Vacancy rate	3	9	13	3	9
Expenses	3	22	11	0	2
Alterations and replacements	0	2	23	2	11

Exhibit 24 gives tabulations of the capitalization rates, discount rate, and projection periods used in the appraisals. Of the 24 appraisals that used direct capitalization, 22 used a rate above 9 percent but below 11 percent. The 24, using direct capitalization, averaged 9.8 percent. There was a greater range

in the selection of the discount rate, ranging from a low of 12 percent to above 17 percent with a central tendency in the 14 to 15 percent range. The 28 appraisals that used discounted cash flow had an average discount rate of 14.6 percent. By far, a ten year projection is favored, 23 of the 28 used ten years.

EXHIBIT 24
CAPITALIZATION RATES, DISCOUNT RATES AND PROJECTION PERIODS

CAPITALIZATION RATE	RATE OBS.	DISCOUNT RATE	RATE OBS.	PROJECTION PERIOD YEARS	PERIOD OBS.
0	15	0	11	0	11
8	1	12	3	4	1
9	9	13	4	5	1
10	13	14	9	10	23
11	1	15	5	11	2
AVERAGE	9.8	16	4	15	1
		17	3	AVERAGE	9.9
		AVERAGE	14.6		

note: zero entry indicates technique not used
actual rates were at least the stated rate

Of the 28 appraisals that used discounted cash flow, three did not include their estimates of income over time and simply stated what the present values of the cash flows and reversion was without giving the supporting data and, as a result, the calculations could not be verified. The other 26 were verified with a computer cash flow program and all were calculated correctly.

All but two of the appraisals assumed end-of-year cash flows, the other two, prepared by the same firm, assumed mid year cash flows, a procedure, whether right or wrong, that will lead properties being appraised by that firm to have a higher value relative to firms that assume an end-of-year cash flow.

In determining the resale price, 24 of the 28 capitalized

the projection of income at the end of the holding period, 15 used the first year of the new owner and 9 the last year of the current owner. The capitalization rates are shown in Exhibit 25. This capitalization rate tended to be higher than the one used in direct capitalization, averaging 10.3 percent, with 13 of the 24 in the 10 percent range.

EXHIBIT 25
CAPITALIZATION RATES USED IN
DETERMINING RESALE PRICE

RATE	OBS.
0	15
8	1
9	4
10	13
11	4
12	1
13	1
AVERAGE	10.3

note: zero entry indicates technique not used
actual rates were at least the stated rate

The determination of the discount rate and the determination of the resale price are critical in discounted cash flow. They were rated in a similar fashion as the rankings already presented, the results are in Exhibit 26. The method used in determining the resale price did not rate well with 11 (39 percent) rated poor and 10 others as average with none excellent. The discount rate (if no discounted cash flow analysis then the capitalization rate) received almost 50 percent excellent or good ratings but 18 percent were poor. Also included in Exhibit 26 is the overall rating of the income approach, and the overall rating of the appraisal.

EXHIBIT 26
RATING OF THE APPRAISAL

CATEGORY	EXCEL.	GOOD	AVER.	FAIR	POOR
Discount rate	5	11	12	0	5
Resale price	0	7	15	0	11
Income section	1	12	12	5	9
Overall appraisal	1	10	15	10	3

The person reviewing the appraisals was asked if they would hire this appraiser based on this report. The results were: without reservation, 7 (18 percent); with some directions and instructions, 19 (49 percent); and, no, 13 (33 percent).

Exhibit 27 summarizes the rankings given to the various sections of the appraisal reports. The sections with the highest average score are the determination of market rents, gross revenue and expenses, all with an average score above three, a good rating. The sections with the lowest average score was the determination of resale price with an average of 2.11 just slightly above average. Those sections that show the most variability are the determination of the discount rate (standard deviation of 1.40), the overall opinion of the appraisal

EXHIBIT 27
SUMMARY OF RATINGS OF APPRAISAL SECTIONS

RATING OF	POOR	FAIR	AVER	GOOD	EXCEL	NA	AVE.	ST DEV
Market analysis	5	12	15	6	1	0	2.64	0.99
Land valuation	3	5	19	5	0	7	2.81	0.82
Market approach	3	9	16	6	2	3	2.86	0.99
Market rents	2	4	0	25	8	0	3.85	1.04
Gross revenue	2	4	13	19	1	0	3.33	0.90
Vacancy losses	9	3	13	9	3	2	2.84	1.28
Expense section	2	11	0	22	3	1	3.34	1.15
Alterations, repl.	11	2	23	2	0	1	2.42	0.98
Discount rate	5	12	0	11	5	6	2.97	1.40
Resale price	11	10	0	7	0	11	2.11	1.20
Income approach	5	9	12	12	1	0	2.87	1.08
Overall opinion	10	15	0	10	4	0	2.56	1.39
Total	68	96	111	134	28	31		
% of possible	14.5	20.5	23.7	28.6	6.0	6.6		

(standard deviation of 1.39), the vacancy loss determination (standard deviation of 1.28) and the determination of the resale price (standard deviation of 1.20).

The actual scores that each appraisal received are summarized in Exhibit 28. The percentage score allows for comparison; those appraisals that omitted a section(s) will appear to be rated lower than those completing all sections, the percentage adjusts for 31 instances that a ranking could not be given. The average appraisal received a percentage score of 58.1 percent with a standard deviation of 13.2. The first appraisal received the highest score (89.1 percent) and the thirty first the lowest (31.7 percent). The exhibit also breaks the percentage score out by property type. Shopping centers on average scored highest and industrial buildings lowest.

Exhibit 29 contains the distribution of the appraisal percentage score of their ratings. The bulk of the appraisals, 26 or two-thirds fell between 50 and 79 percent, only two were above and eleven below. It is a sad commentary that over 28 percent of the appraisals received had an average percentage score of under 50 percent of their potential score and that only two (5 percent) ranked above 80 percent.

EXHIBIT 28
INDIVIDUAL APPRAISAL RATINGS BY PROPERTY TYPE

APPR. #	SCORE	OBS	% OF TOTAL	AVERAGE	ST DEV	APART.	BLDG	CTR	BLDG	WARHSE
1	49	11	89.09	4.45	0.82			89.09		
2	34	12	56.67	2.83	1.11					56.67
3	40	12	66.67	3.33	0.65			66.67		
4	38	12	63.33	3.17	0.94	63.33				
5	29	12	48.33	2.42	1.24			48.33		
6	41	12	68.33	3.42	0.90		68.33			
7	21	10	42.00	2.10	1.37					42.00
8	25	10	50.00	2.50	1.08		50.00			
9	17	10	34.00	1.70	0.67					34.00
10	37	12	61.67	3.08	1.24					61.67
11	22	10	44.00	2.20	0.92				44.00	
12	34	11	61.82	3.09	0.83		61.82			
13	33	11	60.00	3.00	0.77		60.00			
14	23	12	38.33	1.92	1.16					38.33
15	34	11	61.82	3.09	1.14		61.82			
16	25	10	50.00	2.50	1.08					50.00
17	42	12	70.00	3.50	0.80			70.00		
18	48	12	80.00	4.00	0.85		80.00			
19	23	10	46.00	2.30	1.25		46.00			
20	26	10	52.00	2.60	0.84					52.00
21	28	12	46.67	2.33	1.23				46.67	
22	29	11	52.73	2.64	1.03				52.73	
23	23	12	38.33	1.92	1.38		38.33			
24	28	11	50.91	2.55	1.04					50.91
25	47	12	78.33	3.92	0.79					78.33
26	35	11	63.64	3.18	1.17		63.64			
27	29	12	48.33	2.42	1.08					48.33
28	26	11	47.27	2.36	1.03			47.27		
29	36	10	72.00	3.60	1.07		72.00			
30	31	9	68.89	3.44	1.01		68.89			
31	19	12	31.67	1.58	1.16					31.67
32	32	11	58.18	2.91	0.94		58.18			
33	35	11	63.64	3.18	0.98		63.64			
34	42	12	70.00	3.50	0.80		70.00			
35	30	11	54.55	2.73	1.10					54.55
36	32	11	58.18	2.91	1.30					58.18
37	42	12	70.00	3.50	0.67		70.00			
38	40	12	66.67	3.33	1.15			66.67		
39	44	12	73.33	3.67	0.98			73.33		
AVE.	32.54		58.08			63.33	62.18	65.91	47.80	50.51
ST. DEV.			13.15			0.00	10.77	14.53	4.47	12.47

EXHIBIT 29
DISTRIBUTION OF PERCENTAGE SCORES

30-39	4
40-49	7
50-59	9
60-69	11
70-79	6
80-89	2

With the necessity of estimating so many items in the course of an appraisal, the probability of reaching an exact point value estimate that is accurate is highly unlikely. At each stage in the process when a value estimate was made, an inquiry was made if a range of values was given or only a point estimate was made. The results of that inquiry are in Exhibit 30. With only 19 value estimates expressed as a range and 183 as point estimates, using a range can hardly be called an established trend. Significantly, in the 36 appraisals that did a market approach, eight expressed their value estimate in terms of a range.

EXHIBIT 30
SUMMARY OF VALUATION METHODS USED

	POINT EST.	RANGE	NO EST.
Overall value	39	0	0
Cost approach	31	1	7
Market approach	27	8	4
Direct capitalization	22	2	15
Band of investment	1	0	38
Backdoor approach	0	2	37
Discounted Cash flow	25	3	11
Other	2	0	37
Income approach	36	3	0
Total	183	19	149

One of the more interesting inquiries was, of those appraisals that did a discounted cash flow and included the cash flow forecast (27), what would the compound annual growth rate

have to be for net operating income over the holding period. [23] Exhibit 31 contains the results of that inquiry, along with the first and last years vacancy rate [24] Of the 27 appraisals, 18 (66.7 percent) had an annual compound growth rate above six

**EXHIBIT 31
CALCULATION OF ANNUAL COMPOUND GROWTH RATE OF NOI**

APP	YEAR 1 NOI	LAST YEAR NOI	HOLDING PERIOD	GROWTH RATE	VACANCY YR 1	VACANCY LAST
1	389,316	668,890	10	6.20	10.00	10.00
2	453,592	710,380	10	5.11	6.00	6.00
3	466,400	618,000	11	2.85	9.50	5.00
4	1,034,646	3,124,940	10	13.07	44.30	5.00
6	744,244	1,355,796	10	6.89	11.00	5.00
10	105,000	136,000	11	2.62	5.00	5.00
12	699,285	1,383,296	10	7.87	13.85	5.00
13	540,993	928,044	10	6.18	12.50	3.00
14	143,306	143,306	4	0.00	0.00	0.00
15	753,199	995,853	10	3.15	0.00	0.00
17	403,933	714,686	10	6.55	5.00	5.00
18	908,992	2,489,316	10	11.84	22.30	8.00
19	360,592	680,194	10	7.31	3.50	3.50
21	74,870	175,326	10	9.92	25.00	5.00
23	1,930,000	4,157,000	10	8.90	0.00	0.00
25	252,500	310,609	10	2.33	0.00	8.00
27	351,542	450,322	5	6.39	5.00	5.00
28	3,724,032	7,359,114	10	7.86	2.60	2.60
29	140,877	330,260	10	9.93	5.00	5.00
30	645,000	2,145,900	10	14.29	0.00	0.00
31	277,600	419,894	15	3.00	2.00	2.00
33	435,614	652,908	10	4.60	0.00	0.00
34	471,455	1,266,050	10	11.60	8.00	8.00
36	253,328	510,519	10	8.10	6.00	6.00
37	575,023	856,781	10	4.53	2.00	5.00
38	459,000	992,000	10	8.94	3.00	3.00
39	374,600	640,800	10	6.15	17.00	7.00

23/ The calculation was to take the n-1 route of the net operating income in the last year divided by the net operating income in the first year minus one.

24/ Large differences in the vacancy rate between the first and last year of the appraisal could result in a calculated growth rate that made no sense.

percent, five were from 3 to 6 percent and four were below 3 percent. Seven of the 18 appraisals with the highest assumed growth rates, had a higher vacancy rate in the first year than the last, the other 11 had identical vacancy rates in the first and last year. While there is no doubt that for most income properties, net operating income will increase over time, but to sustain a compound growth rate in excess of 6 percent for a 10-year period might be viewed as speculative and for the two appraisals that had a growth rate in excess of 10 percent for a ten year period is approaching on the impossible. The majority of the appraisals, performed from 1981 to 1985, were on buildings constructed in the 1960's and 1970's so that the income stream was well seasoned.

The period from 1981 to 1985 saw a dramatic drop in the rate of inflation and in interest rates. The growth rates for income and expenses, discount rates and capitalization rates should mirror this drop and they should decline. Exhibits 32 through 36 tabulate the growth rates, discount rates, capitalization rates and the capitalization rate used to establish the resale price by the year the appraisal was completed. It appears that regardless of the inflation rate or the level of the interest rate that income goes up by 6 percent per year. Expenses are not quite as consistent, but still tend to stay around the 6 percent growth rate. Probably the single most remarkable appraisal had the income increasing by 9 percent per year and expenses at 3 percent -- apparently inflation only affects income and not costs. The capitalization rate increased slightly over the three years that there was a representative sample of observations (1982 through

1984); from 9.40 to 9.71 percent. During that same period the discount rate dropped on average from 15.13 to 13.67 percent. The two combined are contradictory in that the discount rate falling will cause an increase in the value estimate while the capitalization rate going up will cause a decrease in value. The rate used to capitalize income at the end of the holding period stayed fairly constant, at 10 percent.

**EXHIBIT 32
RATE OF GROWTH OF INCOME BY DATE OF APPRAISAL**

RATE	1980	1981	1982	1983	1984	1985
5	0	0	4	1	1	0
6	0	0	1	5	5	2
7	0	0	1	1	1	0
8	0	0	2	0	0	0
9	0	1	0	0	0	0
AVERAGE	0	9.00	6.13	6.00	6.00	6.00

**EXHIBIT 33
RATE OF GROWTH OF EXPENSES BY DATE OF APPRAISAL**

RATE	1980	1981	1982	1983	1984	1985
3	0	1	0	0	0	0
5	0	0	2	1	0	0
6	0	0	1	5	4	1
7	0	0	2	0	1	0
8	0	0	2	0	0	0
AVERAGE	0	3.00	6.57	5.83	6.20	6.00

**EXHIBIT 34
CAPITALIZATION RATE BY DATE OF APPRAISAL**

RATE	1980	1981	1982	1983	1984	1985
8	0	0	0	1	0	0
9	1	1	3	2	2	0
10	0	1	2	4	5	1
11	0	0	0	1	0	0
AVERAGE	9.00	9.50	9.40	9.63	9.71	10.00

EXHIBIT 35
DISCOUNT RATE BY DATE OF APPRAISAL

RATE	1980	1981	1982	1983	1984	1985
12	0	1	0	1	1	0
13	0	0	1	1	2	0
14	0	0	2	1	5	1
15	0	0	2	2	1	0
16	0	0	1	2	0	1
17	0	0	2	1	0	0
AVERAGE	0	12.00	15.13	14.75	13.67	15.00

EXHIBIT 36
FINAL VALUE CAPITALIZATION RATE BY DATE OF APPRAISAL

RATE	1980	1981	1982	1983	1984	1985
8	0	0	0	1	0	0
9	0	0	2	2	0	0
10	0	0	2	1	8	2
11	0	0	1	3	0	0
12	0	0	1	0	0	0
13	0	0	1	0	0	0
AVERAGE	0	0	10.57	9.86	10.00	10.00

The rate used to establish the resale price by capitalizing the income at the end of the holding period was investigated with respect to the rate and whether the appraisal used the income from the last year of the holding period or the income from the first year of new ownership. The results seem to indicate that those using the last year of the holding period are the more conservative on two counts. First, in only one case was net operating income held constant over the holding period, in all other appraisals net operating income was increased over the holding period, thus using the first year of new ownership will result in the use of a higher income. Secondly, on average, those using the last year of the holding period used a higher

capitalization rate, 10.67 percent against 9.80 percent on average, see Exhibit 37. The impact of this assumption can best be demonstrated with an example: assume that income is increasing at 6 percent per year and that income for the last

EXHIBIT 37
FINAL VALUE CAPITALIZATION RATE BY WHICH INCOME CAPITALIZED

RATE	LAST YEAR	FIRST YEAR
8	0	1
9	1	3
10	4	9
11	2	2
12	1	0
13	1	0
AVERAGE	10.67	9.80

year of the holding period is \$100,000. Using the 10.67 rate results in a final estimated sale price of \$964,320. If we use the income of the first year of new ownership, \$106,000, and the capitalization rate of 9.80 percent, the resulting sale price is \$1,081,632 some 12.2 percent higher or, with these assumptions, a \$117,313 higher resale price per \$100,000 of net operating income. With a ten year holding period and a discount rate of 15 percent there would be an increase in present value of \$30,000 per one hundred thousand of income. The correct method would be based on the available data. The appraiser would have to determine if comparable properties' net income was historical, indicating the last year of the holding period **must** be used, or a projection, indicating that the first year of new ownership **must** be used. Unfortunately, the determination of the resale price was the section of the appraisals that had the worst rating and it is virtually impossible to tell if the comparable properties income, if given at all, is historical or a projection. In any

case, if income is assumed to be increasing and the historical income and sales price are known, then the calculated capitalization rate based on projections must be higher than the one calculated on historical records. From this sample, the opposite is true.

The initial question that was asked was: Is the practice currently in use between asset managers and independent fee appraisers providing consistently accurate valuations of the real estate assets? Based upon the results of this study the answer must be no. Appraisers are not giving the asset managers what they ask for and in many cases are not following prescribed appraisal theory. That is not to say that there were not good appraisals in the 39 reviewed, there were some excellent works. But, there were enough with serious flaws to suggest that a standardized letter of engagement might add to the consistency of the valuation process and provide asset managers with a better product for the money expended. Following is a preliminary draft of a letter of engagement. It is important to remember that the engagement letter in and of itself is not sufficient, it only sets the minimum provisions for preparing the appraisal. Without a standard appraisal policy, to set rules that will be observed in the appraisal process and a standard set of appraisal protocols [25] defining the relationship between the appraiser and his client, the letter of engagement will lose much of its value.

25/ The complete set of documents will be completed for presentation at PREA's May 20 meeting.

DRAFT OF PROPOSED LETTER OF ENGAGEMENT

The proposed letter of engagement, Exhibit 38, for procuring appraisal services for the original appraisal [26] of a real estate asset owned by or on behalf of pension funds is designed to allow the asset manager flexibility in defining the assignment of the independent fee appraiser and yet allow for consistency in the valuation of pension fund real estate assets. The letter is not intended to tie the hands of the professional appraiser as to their independence in the appraisal process but rather to assure that the finished product follows guidelines approved by the Professional Asset Managers Association and accepted appraisal theory.

The letter is heavily footnoted for clarification, explanation based on the asset manager's response to the questionnaire and the analysis of the appraisals submitted by the asset managers, and recommendations of the research team. [27]

The letter of engagement is divided into four sections:

1. Specifications of the assignment--including the purpose of the appraisal and definitions of value and real estate interests to be valued.
2. Appraisal protocols--setting responsibilities for leases, engineering data and cash flow preparation.
3. Appraisal methodology--a statement of the minimum content, techniques to be used, and required data to be submitted.
4. Appraisal business arrangements--those items concerning the contractual hiring of the appraisal firm.

26/ The letter will be expanded to include subsequent update appraisals in the future.

27/ It remains to be seen whether the notes will be required in the final engagement letter but for discussion purposes they were included.

EXHIBIT 38
DRAFT OF A STANDARD LETTER OF ENGAGEMENT

Date

Name and Address

Re:

Dear

We would like to engage your services for the appraisal of the referenced property to determine the fair market value of the interests owned by _____ as of _____, 19___. The appraisal shall be prepared in accordance with the definitions, specifications and requirements laid out in this letter. Your signature accepting this assignment witnesses your agreement with the terms as stated.

SPECIFICATIONS OF THE ASSIGNMENT

The purpose of the appraisal assignment is: [1]

- a. Basis for investment share unit value
- b. Basis for evaluation of management performance
- c. Basis for monitoring buy-sell transactions
- d. Inspection of the property and independent review of leases
- e. Other _____

The assignment is to estimate the market value of the subject property as defined by AIREA.

The property rights to be valued are the fair market value as defined by AIREA, assuming a cash sale and then report the net investment value which could be attributed to assumable financing, existing leases, personal property or intangible assets. [2]

- 1/ Select one or more of the alternatives.
- 2/ Because of the split by the asset managers in what interests are to be valued; as an alternative: The property rights to be valued are the net investment value of the property encumbered by existing leases, benefited by assumable financing and other entitlements, and including personal property. While either definition of interest to be valued will result in the same final valuation, the one included in the body of the letter is recommended by the research team. It allows for an evaluation of managements performance over time. Effective management would be closing the gap between investment value and unencumbered market value.

Valuation of the following assets, where applicable, shall be made:

- | | |
|---|---|
| 1. Land | 7. Existing leaseholds |
| 2. Surplus land | 8. Amortizing assets
such as tenant improvements |
| 3. Buildings | 9. Intangible assets |
| 4. Working capital | 10. Other_____ |
| 5. Personal property | _____ |
| 6. Financing package
(if transferable) | _____ |

APPRAISAL PROTOCOLS

Appraisal protocols relate to which party will be supplying data and assumptions for the appraisal. The following matrix details the data required, key assumptions to be made, and the party responsible for supplying the information.

ITEM	APPRAISER	ASSET MANAGER	PROPERTY MANAGER	CPA FIRM	OTHER
Lease abstracts					
Adjusting accounting records from accrual to cash flow					
Cash flow format					
Cash flow forecast					
Engineering assumptions					
Holding period					
Growth rate for market rents [a]					
Growth rate for expenses [a]					
Vacancy rate [b]					
Discount rate [c]					
Capitalization rate resale assumption [d][3]					
Income capitalization rate is to be applied to [e][1]					

- a If supplied by the appraiser, the report should include thorough documentation based on the cost of living index, historical growth rates for this property type in this market or other verifiable indices. If provided for the appraiser then a footnote regarding who provided the assumption is sufficient.
 - b If supplied by the appraiser the vacancy rate should be supported by a combination of current, past and projections of demographic data tied to measures of market supply and demand and historical operating results that fully document and support the projected vacancy level (these sections of the appraisals studied were generally lacking in this respect). If provided for the appraiser then a footnote regarding who provided the assumption is sufficient.
 - c If supplied by the appraiser, the report should include complete documentation regarding the rates currently being used for similar properties by similar investment groups, or other verifiable indications of the rate. If provided for the appraiser then a footnote regarding who provided the assumption is sufficient.
 - d If provided by the appraiser, the report should include at least three market sales, either cash or cash equivalent, and historical operating results or forecasts of operations that can be verified and presented in such a way that the reader can replicate the determination of the capitalization rate. If provided for the appraiser then a footnote regarding who provided the assumption is sufficient.
 - e If the capitalization rate was determined from actual operating results of the comparable property then the rate should be applied against the last year of the forecast. If, however, the rate was determined using future projections of income, then the income of the first year of the new ownership will be capitalized. If provided for the appraiser then a footnote regarding who provided the assumption is sufficient.
- 3/ It is strongly recommended by the research team that the capitalization rate for the determination of resale price be based on comparable sales actual operating results and be applied against the income of the last year of the holding period. Historical operating results are far superior to an others unverifiable projection of future income.

APPRAISAL METHODOLOGY

Other than where the client or client's agents have supplied data or assumptions appraisal practice as prescribed by the professional associations should be followed. Concerning the three approaches to value the following should be adhered to:

1. The cost approach--optional unless the data is needed for insurance purposes.
 - a. In valuing the land as if vacant, follow the procedure prescribed below in the market comparison approach.
 - b. The cost of the building new should be taken from one of the cost estimating services, adjusted for time and geographic location, or from a local engineer or architect with cost estimating experience on this type property.
 - c. Estimates of depreciation should be detailed and fully documented so that the reader could arrive at the same estimate after reading the report and inspecting the property.
2. The market comparison approach must be completed and fully documented or an explanation of the nonapplicability of the approach because of lack of comparable sales.
 - a. At least three comparable sales must be analyzed with a full description of the property and the transaction, including terms of sale.
 - b. If the sales are noncash transactions then the price must be adjusted to a cash equivalent price. The adjustments must be specifically identified so that the reader can replicate the calculations to arrive at the same value.
 - c. The appraisal should discuss the units of comparison to be used in the approach.
 - d. Justification and explanation for each adjustment for comparability must be documented so that it can be replicated by the reader.
 - e. Value conclusions should be reported as a range to reflect potential error in available information or interpretation.
3. An income approach to value must be performed with discounted cash flow using cash accounting before taxes. Refer to the protocols section as to who will provide key data and assumptions.
 - a. The historical operating results, where applicable, of, at least, the previous year must be provided in the report. If historical operating results are in terms of accrual accounting, they should be adjusted, with full documentation, to reflect actual cash transactions and not accruals. [4]
 - b. The projection of cash flow shall be presented for the entire holding period, with appropriate assumptions explicitly stated and either documented or referenced as to source.

- c. Cash flows should be assumed to occur at the end of each year. [5]
- d. The cash flow and resulting present value of the project should be unbundled and presented in five parts:
 - 1) An annuity for the holding period equal to the cash throw off of the first year's projections.
 - 2) The present value of the increases to cash throw-off over the first year's projection.
 - 3) The present value of the actual valuation arrived at in this study (to be added to the income approach once the valuation is made).
 - 4) The present value of any reduction of indebtedness over the holding period.
 - 5) The present value of the difference between the resale price (net) and the valuation (see # 3).
- e. Key financial ratios including distributable cash as a percentage of original cash equity, and as a percentage of current net worth, expense ratios, the implied annual compound growth rate of net income for the holding period, and other indices of investment performance should be calculated.

4/ In particular the appraiser should be conscious of historical rent concessions given and the impact on recognized income, the recognition of overage rent, escalators, and reimbursables should reflect when the income is realized on a cash basis. The estimation of leasing commissions and tenant improvements should reflect when those expenditures will actually be made.

5/ While arguments can be made for mid year discounting, each fund and the industry must become totally consistent in this respect for there to be any hope in comparing fund values. The convention is overwhelmingly in favor of end of the year discounting (37 of 39 appraisals).

APPRAISAL BUSINESS ARRANGEMENTS

It is my understanding that the fee for this assignment will not exceed \$ _____ and that this fee includes an allowance for technical assistance of \$ _____ to cover _____.

It is my understanding that _____ from your office will conduct the appraisal and that the report will be signed by _____.

_____ copies of the appraisal shall be completed and delivered to our offices at _____ no later than _____. Should the appraisal not be delivered on or before this date, a penalty of _____ per working day will be deducted from your fee. In addition, we understand that you and all personnel involved in the appraisal will be available for a review meeting within _____ days of the delivery of the final report.

We understand that your firm carries and will continue to carry, insurance for errors and omissions in the amount of \$ _____.

Our fund manager _____ and building manager _____ will be available to you for meetings regarding your assignment and the gathering of necessary documents.

Documents that will be made available to the appraiser and where they are available include: [7]

6/ Technical assistance could include but not be limited to the hiring of engineers, architects or legal counsel to review the property and/or documents relevant to the assignment.

7/ These would include historical operating results, legal documents such as title reports, lease abstracts or other contracts defining interests, relevant zoning ordinances, building codes, code violations or nonconforming waivers and maps, photos, floor plans and graphics.

Documents that are to be included in the final report will include but not be limited to: [8]

Standard terminology as contained in _____
_____ [9] shall be used in the report,
the ethical standards of _____
_____ [10] shall be adhered to and the controls as
presented in R 41 (b) concerning self-contained reports or
listing of reports incorporated by reference shall be followed.

We understand that your firm maintains the right to review and
approve printer's copies of any portion of the appraisal report
published or quoted in any public materials, prospectus or
circulars.

If you are in agreement with the above, please sign and return
the original to my attention.

Sincerely,

Accepted by _____
Title _____
Date _____

8/ These would include legal documents such as title reports,
lease abstracts or other contracts defining interests,
relevant zoning ordinances, building codes, code violations
or nonconforming waivers and maps, photos, floor plans and
graphics.

9/ As an example: **The Appraisal of Real Estate**, The American
Society of Real Estate Appraisers, eighth edition, Chicago,
Illinois, 1983.

10/ As an example: Ethical standards published by the American
Institute of Real Estate Appraisers or the Society of Real
Estate Appraisers.

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