

JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

VII. INDUSTRY EDUCATIONAL COURSES - LONG TERM

G. Australian Lecture Series

7. "Real Estate Investment Analysis", Fifth
Module

FIFTH MODULE

REAL ESTATE INVESTMENT ANALYSIS

Presented By

Professor James A. Graaskamp, Ph.D., CRE, SREA
University of Wisconsin School of Business

FIRST HOUR

I. STRATEGIC PARAMETERS

Investment planning begins with certain strategic limitations and objectives of the investor which are well defined, systematic, and rational, as well as certain attitudes about the future which represent a less well defined web of bias controlling selection. These biases may, nevertheless, be rational anticipations about social, political, technological, or historical trends.

There is a hierarchy of real estate investment strategy screens which are always implicit in investor attitudes which are better utilized if they are made explicit as investors debate within their team or in the silence of their own den as to thrust of their real estate efforts.

A. Personality, religious persuasion, or logic lie behind investor attitudes about the future, particularly perceptions of long-term socio-economic trends for which forecasting is impossible and for which contingent events lead to alternative outcomes for our society whose broad, structural outlines we take for granted.

1. America and the threat of expropriation, progressive isolation of war.
2. The American response to the energy question.
3. The American response to the resource conservation question.
4. The American response to demographic shifts affecting housing, education, size of work force, community growth, etc.

5. The American response to shortage of capital in an era when most problems require capital intensive solutions.
 6. The American response to the dilemma of incentive for expertise versus income stability for those without skills.
- B. In approaching real estate investment, the investor has to make a couple of clear axioms from which he proceeds to operate:
1. Does portfolio theory and reasonable market efficiency of the securities market extend to real estate or does real estate have a great necessity and opportunity for those willing to incur the expense of property selection?
 2. Is the investor going to be an activist providing some levels of expertise and investment product creation or is he a passivist who will provide only capital.
- C. Given some investor mindset to the above factors and other anxieties, it is possible to formulate both broad strategic and selective tactical criteria. Such criteria should be developed in a systematic way in a general rank order of importance suggested as follows:
1. Political exposure
 2. Degree of market control
 3. Management intensiveness
 4. Financial attributes from which investment classification can be drawn.
 5. Alternative decision points and liquidity
 6. Income tax strategy
 7. Estate planning and tax implications
- D. The non-financial aspects of a business must be understood before the numbers make any sense and before risk can be identified or evaluated. Thus,

the criteria in Section C can be expanded as follows:

1. Political exposure
 - a. Land use controls
 - b. Price controls (rent control, agricultural parity, FMR, etc.
 - c. Subsidy of effective demand
 - d. Controls of supply costs (wages, building codes, specifications, etc.)
2. Degree of market control
 - a. Control of customer (contract, terrain, creation of tenancy)
 - b. Reciprocity
 - c. Monopolistic control of supply
 - d. Profile of consumer through market research
3. Management intensiveness
 - a. Development skills for the emerging real estate enterprise
 - b. Operating skills
 - c. Fungibility vs. personality (restaurant formulas vs. culinary)
 - d. Mortality of skills
4. Financial attributes
 - a. Trading property
 - b. Emerging developemnt or technology investment
 - c. Special situation investments
 - d. Cash return investments
 - e. Purchasing power preservation through tax shelter and retail indices
 - f. Financial position in terms of any of the above relative to liquidity, control, and time line
5. Alternative decision points and liquidity
 - a. Sunk cost of search and acquisition
 - b. Investment escape alternatives
 - c. Capacity for investment procrastination
 - d. Liquidity

6. Income tax strategy

- a. Regulatory trade-offs
- b. Shift from single conduit to split between operating profit centers and capital gain centers
- c. Erosion of general tax subsidy and substitution of selective national priority incentive

7. Estate planning

- a. Continuity of management
- b. Liquidity for tax and bequest requirements
- c. Gradual loss of the stepped-up basis
- d. Careful separation of business associations and family involvements

REAL ESTATE INVESTMENT ANALYSIS

Presented By

Professor James A. Graaskamp, Ph.D., CRE, SREA
University of Wisconsin School of Business

SECOND HOUR

II. FINANCIAL PARAMETERS AND ANALYSIS

The forecasting of future money returns to a present investment is the ultimate business problem and the dynamics of these problems explains the actions of consumer, producer, and the society.

- A. An investment in a bond can be defined as to when it begins in time, when it is sold, when coupons are collectible, and total costs and total receipts under alternative outcomes. Thus, yield is easily computed and risk depends on whether you can rely on the promisor.
- B. Real estate financial forecasting seldom enjoys such a rigid set of financial specifications and therefore seldom enjoys conservative conditions of certainty. An investment in real estate really means somebody "bought" a set of assumptions.
 - 1. Risk is the potential variance between assumptions and realizations between proforma prospects and the historical balance sheet and P&L statements.
 - 2. Degree of professionalism is measured, ultimately, by the care with which assumptions are made and supported by careful research.
- C. Basic cash flow analysis depends on four essential set of assumptions:
 - 1. Schedule of cash outlays (capital costs and expenses.)
 - 2. Schedule of cash receipts (periodic and reversions).
 - 3. Net cash flows for each period (negative and positive).
 - 4. Devices for comparison of alternatives

5. However, it quickly becomes apparent when accounting for the dollars "in and out" that not all dollars are the same. Some are current expenses while others represent acquisition of assets and many are shared with local and federal government through various tax processes.
- D. A single period proforma is the first test of financial parameters.
1. A given purchase price can be converted to a necessary rent level in the market (Front Door Approach, see Exhibit 1).
 2. A given market rent level can be converted to a justified capital budget (Back Door Approach, see Exhibit 2).
 3. While lenders prefer debt cover ratios for back door approach, equity investors should prefer risk orientated Default Ratio Approach (Exhibit 3).
- E. Basic elements of proforma can then be expanded over time to include the following assumptions:
1. Definition of desired profit centers
 2. Definition of time line over which events will still take place
 3. Assumptions on the capital budget and sequence of source and application of funds.
 - a. Direct construction or purchase cost
 - b. Indirect and capitalized carrying cost
 4. Financial plan
 - a. Credit amounts and terms
 - b. Equity amounts and terms
 - c. Holding power

EXHIBIT 1

Figure 8
Loan to Cost Ratio Approach
(Frontdoor Approach)

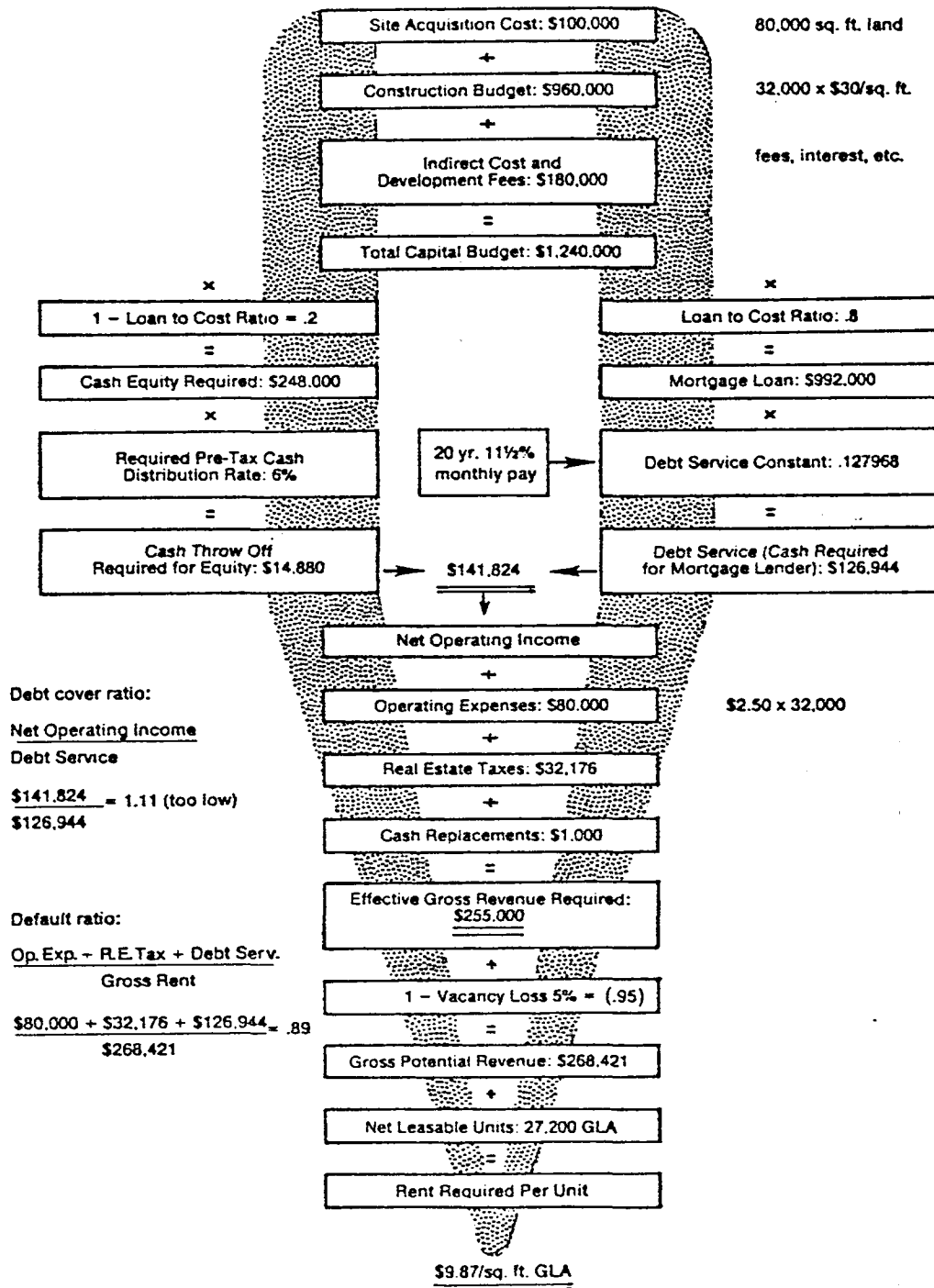


Figure 9
Debt Cover Ratio Approach
(A Backdoor Approach)
Lender's Point of View

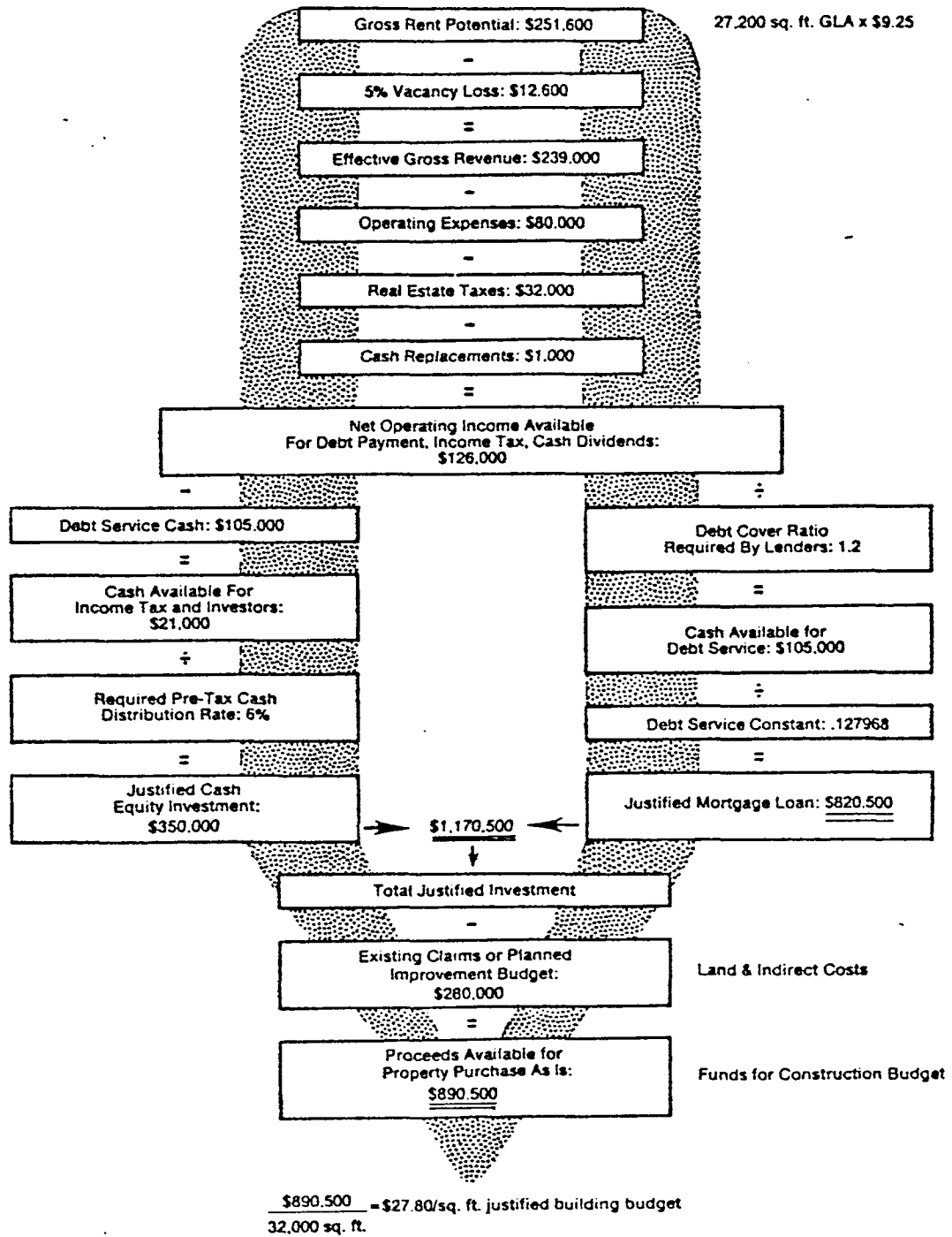
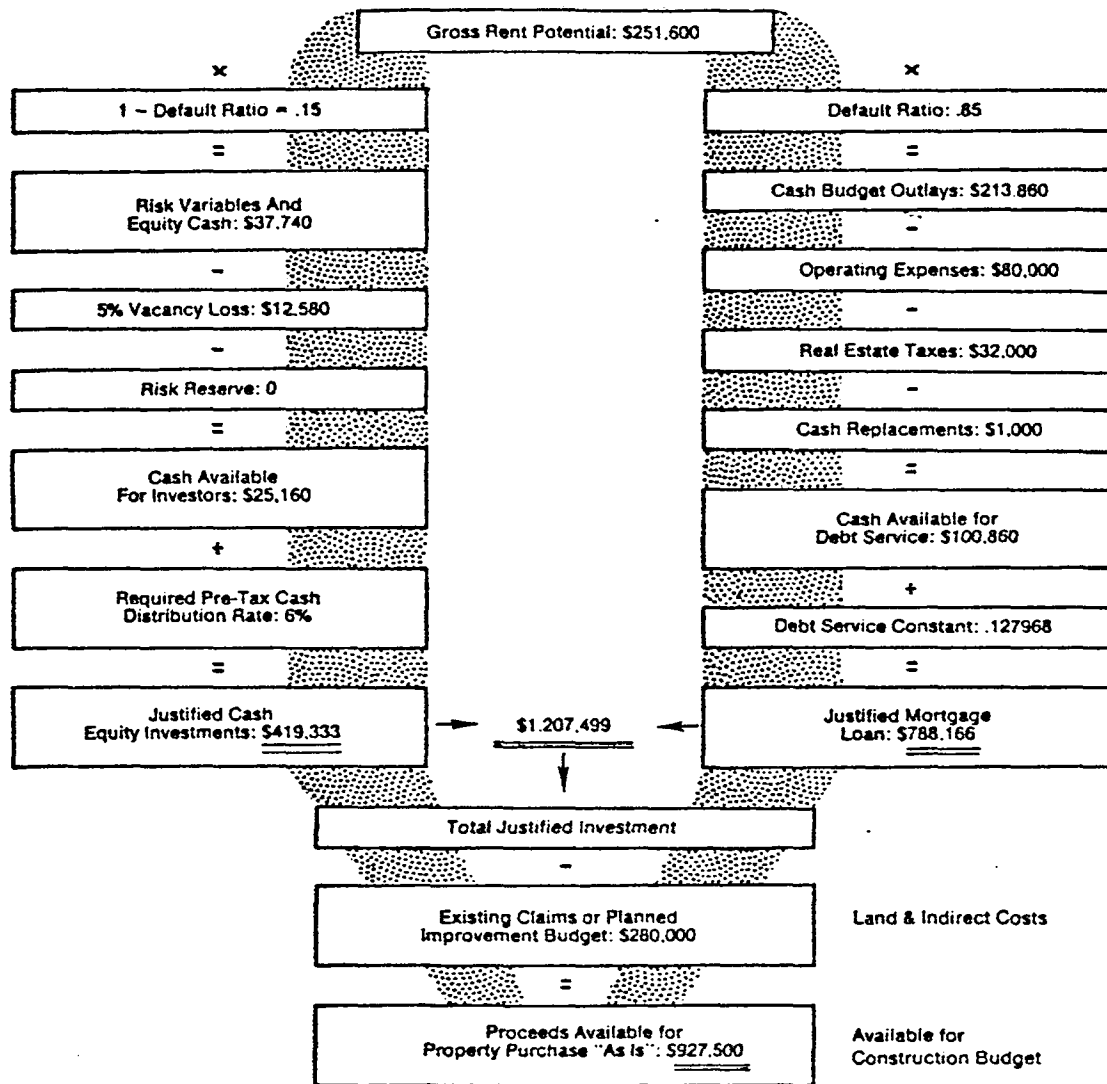


EXHIBIT 3

Figure 10
Default Ratio Approach
(Another Backdoor Approach)
Developer's Point of View



\$37/sq. ft. of gross area for justified building budget

5. Profits classified as to type and tax
 - a. Cash from operations
 - b. Cash from capital gains
 - c. Cash surplus from financing
 - d. Cash from tax savings on other income
 6. Selected measures of profitability
 - a. Definition of investment
 - b. Definition of profit
 - c. Selected ratios of profit to investment
 7. Selected measures of risk
 - a. Payback periods
 - b. Capacity for variance
 - c. Variance controls
- E. For a rental investment property, the general format for determining after-tax cash flows for each period or year would generally be as follows:

PART I. ANNUAL (PERIODIC) RETURNS TO INVESTORS

1. Estimate potential gross cash income; Cash income from space sales
2. Deductions from potential gross
 - a. Normal vacancy
 - b. Seasonal income loss
 - c. Collection losses
 - d. Franchise fees, deposits returned, etc.
3. Add "other" income from service sales
4. Derive effective gross income
5. Deduct operating expenses (on expected cash outlay without accrual reserves)
 - a. Fixed expenses
 - b. Variable expenses
 - c. Repairs and maintenance
 - d. Replacements

6. Derive net_operating_income (NOI)
7. Deduct annual_debt_service
 - a. Contract interest
 - b. Supplementary variable interest
 - c. Principal amortization
8. Derive cash_throw-off
9. Add back principal_payments_and_replacements
10. Deduct tax_depreciation_allowance
11. Derive taxable_income
12. Determine marginal_income_tax on real estate income
13. Deduct income tax from cash throw-off (H)
14. Derive after-tax_cash_flow
15. Add tax_savings_on_other_income (if K is negative)
16. Add surplus_from_refinancing
17. Derive spendable_after-tax_cash

PART II. RESALE (REVERSION) RETURNS TO INVESTOR

1. Estimated_resale_price (end of period)
2. Deduct broker's commission and other transaction_costs
3. Derive effective_gross_proceeds from sale

4. Deduct all credit claims outstanding (end of period)
 - a. Short and long term note balances due
 - b. Prepayment penalties
 - c. Deduct equity shares to non-owner interest
5. Derive pre-tax reversion to equity
6. Deduct tax claims on ownership interest
 - a. Deduct capital gains tax
 - b. Deduct income tax on disallowed accelerated depreciation
 - c. Deduct surtax on taxable preferential income
7. Derive after-tax resale proceeds to investor

(See Exhibit 4)

- G. Financial risk is the variance between proforma budgets and historical accounting of results. Since loss of assets or of income expectations from static perils can be minimized by means of insurance devices for prediction and leveling of shock losses, financial risk management then becomes a matter of shaping incentives to reduce dynamic risks and provide a cushion or tolerance for surprise in the financial parameters of the enterprise.
- H. The first level of risk analysis are gross statements of the maximum potential loss and the cushion for partial losses.
 1. The loan to value ratio is an inexact measure of the maximum potential loss to the lender to a presumed salvage value of an asset. One minus the LTV plus the amount of personal guarantee is the measure of the borrower's maximum potential loss.
 2. Financial judgment expects that the maximum potential loss would be only a fraction of net worth of either party.

EXHIBIT 4

P R O F O R M A
INVESTMENT ANALYSIS OF

FOR

DEMO.PROBLEM

- R E P O R T S E C T I O N N U M B E R 1 PAGE 1 -
=====

* GROSS RENT	\$ 74368.	* RATE OF GROWTH OF GROSS RENT	0.0000
* EXPENSES	\$ 4738.	* RATE OF GROWTH OF EXPENSES	0.0000
* R E TAXES	\$ 5868.	* RATE OF GROWTH OF R E TAXES	0.0000
* INCOME TAX RATE	0.5000	PROJECT VALUE GROWTH OF	5.0000
* VACANCY RATE	0.0688	WORKING CAPITAL LOAN RATE	0.1200
EQUITY DISCOUNT	0.0970	EXTRAORDINARY EXPENSES	\$ 0.
RESALE COST	0.0650	REINVESTMENT RATE	0.0700
WKG CAPITAL RS \$	0.	CAPITAL RESER INTEREST RATE	0.0000
INITIAL COST \$	429674.	INITIAL EQUITY REQUIRED	\$ 107419.

ALL '*' VALUES ARE AVERAGE AMOUNTS FOR HOLDING PERIOD. OF 5 YRS.

- R E P O R T S E C T I O N N U M B E R 2 PAGE 1 -
=====

C O M P O N E N T S U M M A R Y

TITLE	PCT. DEPR	BEGIN USE	USEFUL LIFE	DEPR METHOD	COST	SCH
LAND	0.00	1	0.	0	\$ 87304.	0
IMPROVEMENTS	0.90	1	33.	4	\$ 342370.	0

M O R T G A G E S U M M A R Y

TITLE	INTR RATE	BEGIN YR.	END YR.	TERM	ORIG BALC	PCT VALUE
FIRST MORTGAGE	0.0942	1	27	27	\$ 322254	0.750

P R O F O R M A
INVESTMENT ANALYSIS OF

FOR
DEMO.PROBLEM

R E P O R T S E C T I O N N U M B E R 3

PAGE 1

CASH FLOW ANALYSIS

	1979	1980	1981	1982
1 GROSS RENT	74368.	74368.	74368.	74368.
2 LESS VACANCY	5114.	5114.	5114.	5114.
3 LESS REAL ESTATE TAXES	5868.	5868.	5868.	5868.
4 LESS EXPENSES	4738.	4738.	4738.	4738.
5 NET INCOME	58648.	58648.	58648.	58648.
6 LESS DEPRECIATION	15562.	14855.	14180.	13535.
7 LESS INTEREST	30903.	30638.	30346.	30025.
8 TAXABLE INCOME	12183.	13155.	14122.	15088.
9 PLUS DEPRECIATION	15562.	14855.	14180.	13535.
10 LESS PRINCIPAL PAYMENTS	2634.	2899.	3191.	3512.
11 CASH THROW-OFF	25111.	25111.	25111.	25111.
12 LESS TAXES	6091.	6578.	7061.	7544.
13 LESS RESERVES AT 730.000	730.	730.	730.	730.
14 CASH FROM OPERATIONS	18290.	17803.	17320.	16837.
15 WORKING CAPITAL LOAN(CUM B)	0.	0.	0.	0.
16 DISTRIBUTABLE CASH AFR TAX	18290.	17803.	17320.	16837.
17 TAX SAVING ON OTHER INCOME	0.	0.	0.	0.
18 SPENDABLE CASH AFTER TAXES	18290.	17803.	17320.	16837.

CASH FLOW ANALYSIS

=====	1979	1980	1981	1982
MARKET VALUE				
19 BY METHOD - 5 - AT 0.0000	429674.	429674.	429674.	429674.
20 LESS RESALE COST	27929.	27929.	27929.	27929.
21 LESS LOAN BALANCES	319621.	316722.	313531.	310019.
22 PLUS CUM. CASH RESERVES	730.	1460.	2190.	2920.
23 B/4 TAX NET WORTH	82854.	86483.	90404.	94646.
24 CAPITAL GAIN (IF SOLD)	-18591.	-9254.	83.	9421.
25 CAPITAL GAINS TAX	-3718.	-1851.	17.	1884.
26 TAX PREFERENCE TAX	0.	0.	0.	0.
27 INCOME TAX ON EXCESS DEP	3112.	5871.	8292.	10391.
28 TOTAL TAX ON SALE	1253.	4946.	8309.	12275.
29 AFTER TAX NET WORTH	81601.	81537.	82095.	82370.

YEAR OF ANALYSIS

=====	1979	1980	1981	1982
BEFORE TAX RATIO ANALYSIS				
30 RETURN ON NET WORTH B/4 TAX	0.0051	0.3469	0.3357	0.3247
31 CHANGE IN NET WORTH B/4 TAX	-24565.	3629.	3921.	4242.
32 CASH RTN ON ORIG CASH EQUIY	0.2338	0.2338	0.2338	0.2338
33 PERCENT ORIG EQUITY PAYBACK	0.1703	0.3360	0.4972	0.6540
34 PRESENT VALUE OF PROJECT	420678.	437887.	453529.	467748.

REPORT SECTION NUMBER 6
=====

PAGE 1

YEAR OF ANALYSIS

===== 1979 1980 1981 1982

AFTER TAX RATIO ANALYSIS

=====

35	RETURN ON NEW WORTH AFT TAX	-0.0701	0.2174	0.2193	0.2084
36	CHANGE IN NET WORTH AFT TAX	-25818.	-63.	558.	276.
37	CASH RTN ON ORIG CASH EQUIY	0.1703	0.1657	0.1612	0.1567
38	PERCENT ORIG EQUITY PAYBACK	0.1703	0.3360	0.4972	0.6540
39	PRESENT VALUE OF PROJECT	413317.	421485.	429041.	435362.

40	NET INCOME-MARKET VALUE RTO	0.1365	0.1365	0.1365	0.1365
41	LENDER BONUS INTEREST RATE	0.0000	0.0000	0.0000	0.0000
42	DEFAULT RATIO	0.5936	0.5936	0.5936	0.5936

REPORT SECTION NUMBER 7
=====

PAGE 1

YEAR OF ANALYSIS

===== 1979 1980 1981 1982

MODIFIED INTERNAL RATE OF RETURN ANALYSIS

=====

RETURN ANALYSIS WITHOUT SALE

=====

41	CUM. AFT TAX SPENDABLE CASH	18290.	37373.	57309.	78158.
44	MOD. I.R.R. ON ORIG EQUITY	-0.8297	-0.4102	-0.1889	-0.0764
45	MOD. I.R.R. ON CUM. EQUITY	-0.8297	-0.4102	-0.1889	-0.0764

RETURN ANALYSIS WITH SALE

=====

46	CUM. CASH LESS ORIG EQUITY	-7528.	11492.	31985.	53110.
47	CUM. CASH LESS CUM. EQUITY	-7528.	11492.	31985.	53110.
48	MOD I.R.R. ON ORIG EQUITY	-0.0701	0.0521	0.0908	0.1057
49	MOD I.R.R. ON CUM. EQUITY	-0.0701	0.0521	0.0908	0.1057

REPORT SECTION

SENSITIVITY ANALYSIS

ANALYSIS YEAR IS 2 = 1980

DEFAULT RATE - NEEDED -	0.8300	0.8300	0.8300	0.8300
DEFAULT RATE - ACTUAL -	0.7979	0.7979	0.7979	0.7979
DIFFER -	0.0321	0.0321	0.0321	0.0321

TO CHANGE THE DEFAULT RATE .01
CHANGE ANY ONE OF THE FOLLOWING

CASH OUTLAYS		1979	1980	1981	1982
REAL ESTATE TAXES	BY	0.0917	0.0917	0.0917	0.0917
TOTAL EXPENSES	BY	0.1135	0.1135	0.1135	0.1135
FIXED EXPENSES	BY	0.1135	0.1135	0.1135	0.1135
VARIABLE EXPENSES	BY	0.0000	0.0000	0.0000	0.0000
TOTAL INTEREST PMTS.	BY	0.0181	0.0182	0.0184	0.0186
TOTAL PRINCIPAL PMTS.	BY	0.2119	0.1926	0.1750	0.1590
WORKING CAPITAL LOAN	BY	0.0000	0.0000	0.0000	0.0000
GROSS INCOME	BY	-0.0080	-0.0080	-0.0080	-0.0080
FIXED INCOME	BY	-0.0080	-0.0080	-0.0080	-0.0080
VARIABLE INCOME	BY	0.0000	0.0000	0.0000	0.0000

COMPONENTS		1979	1980	1981	1982
INITIAL INVESTMENT	BY	0.0917	0.0917	0.0917	0.0917
LAND	BY	0.4452	0.4452	0.4452	0.4452
IMPROVEMENTS	BY	0.1033	0.1033	0.1033	0.1033
ENTREPRENEURIAL SKIL	BY	-0.9866	-0.9866	-0.9866	-0.9866

MORTGAGES		1979	1980	1981	1982
FIRST MORTGAGE	BY	0.0166	0.0166	0.0166	0.0166

REPORT SECTION

=====

SENSITIVITY ANALYSIS

=====

ANALYSIS YEAR IS 2 = 1980

TO CHANGE CASH RETURN BEFORE TAXES BY 1000.
CHANGE ANY ONE OF THE FOLLOWING

CASH OUTLAYS		1979	1980	1981	1982
REAL ESTATE TAXES	BY	0.0415	0.0415	0.0415	0.0415
TOTAL EXPENSES	BY	0.0514	0.0514	0.0514	0.0514
FIXED EXPENSES	BY	0.0514	0.0514	0.0514	0.0514
VARIABLE EXPENSES	BY	0.0000	0.0000	0.0000	0.0000
TOTAL INTEREST PMTS.	BY	0.0082	0.0082	0.0083	0.0084
TOTAL PRINCIPAL PMTS.	BY	0.0760	0.0872	0.0792	0.0720
WORKING CAPITAL LOAN	BY	0.0000	0.0000	0.0000	0.0000
GROSS INCOME	BY	0.0045	0.0045	0.0045	0.0045
FIXED INCOME	BY	0.0045	0.0045	0.0045	0.0045
VARIABLE INCOME	BY	0.0000	0.0000	0.0000	0.0000

COMPONENTS		1979	1980	1981	1982
=====					
INITIAL INVESTMENT	BY	0.0415	0.0415	0.0415	0.0415
LAND	BY	0.2015	0.2015	0.2015	0.2015
IMPROVEMENTS	BY	0.0468	0.0468	0.0468	0.0468
ENTREPRENEURIAL SKIL	BY	-0.4466	-0.4466	-0.4466	-0.4466

MORTGAGES		1979	1980	1981	1982
=====					
FIRST MORTGAGE	BY	0.0075	0.0075	0.0075	0.0075

3. Conventional wisdom of the lender is that the pain of loss for the equity position will be sufficient to generate payment in almost all events or that the guarantees will be adequate to reduce minimum loss to zero.

4. Net income ratio:

$$\frac{\text{Net income}}{\text{Purchase price} + \text{additional cost} - \text{Overall rate or cap rate}} \text{ should reveal danger of reversed leverage}$$

5. The fallacy of such first level, over-simplified regulatory ratios is that value is the same as cash, that paper capital is as significant as cash available to meet the monthly payment, and that investor incentives are found solely or primarily below the net income level.

- I. Second level ratios begin to analyze and measure the relationship of specific assumptions one to another and in a way which provides relative measures of incentive, importance, and contribution to financial insecurity.

1. Construction loan to marginal cash cost of the borrower is such a balance sheet test ratio. The increment in risk of maximum loss for the borrower is the increase in his maximum potential loss as a result of financing the project.

2. Debt cover ratio:

$$\frac{\text{Net operating income}}{\text{Debt service}}$$

3. Default ratio:

$$\frac{\text{Operating expenses} + \text{real estate taxes} + \text{short term debt} + \text{interest} + \text{principal payments}}{\text{Gross rent}}$$

4. Payback ratio:

Cumulative spendable cash
 Original budget - original debt
 + amount of personal guarantees

5. Spendable cash = distributable cash from operations + refinancing surplus + tax savings to other income + cash profits for services rendered.

6. All of these second level ratios assume a revenue stream called effective gross rent will simply be reallocated by the natural heirarchy of the income statement. That premise involves the major assumption of any enterprise, i.e., there are an adequate number of customers who prefer and who can afford the enterprise product.

J. Third level risk ratios are those which link the space-time product to the money-time reflections in balance sheets and P & L statements. These ratios require some primary research.

1. Building efficiency ratio:

Gross leasable area Usable area
 Gross building area or Gross leasable area

or

Gross leasable area Rentable area
 Total site area or Usable area

or

Building surface area
 Gross leasable area

2. Vacancy ratio:

$$\frac{\text{Space unit} \times \# \text{ of units} \times \text{rental payment periods per year} \times \text{turnover rate} \times \text{rental payments lost} \times \text{rent}}{\# \text{ of units} \times \# \text{ of payments} \times \text{rent per period}} = (\text{gross rent})$$

1-bedroom apartments x 20 x 50% turnover
x 1 month lost x \$200/mo.

$$\frac{20 \times 50\% \times 1 \times 200}{20 \times 12 \times 200}$$

$$\frac{2000}{48000} = \frac{1}{24} = 4.2\%$$

3. Absorption rate:

$$\frac{\text{Units sold or leased per period}}{\text{Total supply of units available for sale or lease}}$$

4. Capture rate:

$$\frac{\text{Units in specific project sold or leased per period}}{\text{Total competitive units sold or leased per period}}$$

5. Sensitivity models or tables permit measurement of a change in one variable as compared to all other variables to establish the parameters of tolerance or to identify the most useful areas for further modification of the financial structure.

6. A significant weakness of second level ratios is the fact that they do not deal with time or the opportunity costs of money for comparison of investments with alternative patterns of cash outlays and receipts.

K. Third level ratios modify comparisons for the influence of time, between one period and another or for cumulative periods of time. Prospective rates of return compare one time period with another while retrospective rates are concerned

with cumulative results. Probability models display the frequency distribution over time of alternative outcomes when certain variables are permitted to vary according to some pattern and parameter.

Prospective rates

1. Return on net worth before tax:

$$\frac{\text{Cash throw-off} + \text{change in net worth}}{\text{Net worth at end of previous period}}$$

2. Return on net worth after tax:

$$\frac{\text{Spendable cash} + (\text{change in net worth} - \text{change in taxes on sale or transfer})}{\text{Net worth at end of previous period} - \text{taxes on sale or transfer}}$$

3. Cash on cash before taxes:

$$\frac{\text{Cash throw-off}}{\text{Total cash budget less original debt}}$$

4. Cash on cash after tax:

$$\frac{\text{Distributable cash} + \text{tax savings to other income}}{\text{Total cash budget less original debt}}$$

Retrospective rates

5. Internal rate of return is that rate which makes the net present value difference between the present value of outlays and the present value of receipts equal to zero.
6. The modified internal rate of return (weighted average portfolio return) is the internal rate of return which makes the net present value difference of the outlays discounted at the opportunity cost of money and the cumulative receipts compounded at the reinvestment rate equal to zero. (The only difference between MIRR and the financial management rate of return FMRR is that the latter uses an average cost of

capital rather than recognizing short-term financing of deficit operations.)

7. Profitability index:

$$\frac{\text{Net present value of return}}{\text{Total cost of acquisition}}$$

8. Net cumulative cash after taxes less original investment with and without resale proceeds after taxes on sale or transfer.

L. Sensitivity analysis involves fine tuning of controllable variables and testing of tolerance of project for variance or surprise. There are many computer systems which permit testing of physical plan (Exhibit 5) or tax and finance implications (Exhibit 6).

M. New attempts to create real estate indexes of performance by property type over time are now experimental.

1. Problems in accounting standardization.
2. Problems in accounting/appraisal interface.
3. Problems in appraisal standard practice.

EXHIBIT 5

24

INPUT DATA LISTING

BUILDING ID 1
DATE 3 11 79

TITLES

TITLES SHOPPING CENTER CASE STUDY

SQ FT IN TRACT 255698.00

RUN NO. 1

CONSTRUCTION-SHELL	0. SQ FT AT \$ 0.	\$
CONSTRUCTION-INTERIOR	0. SQ FT AT \$ 0.	\$
TOTAL BUILDING COST	60242. SQ FT AT \$ 19.69	\$
GRADE PARKING 654.55SQFT	275.00SPACES @ \$ 0.50	

STRUCT. PKING 0. SQFT 0. SPACES @ \$ 0.

LANDSCAPING 0.
FF AND E 0.

RESTAURANT 74538.00

FEES
ARCHITECTURE 0.
ENGINEERING 0.
LOAN FEES 20000.00
CLOSING COSTS 0.
TAXES AND INS 0.
OPTIONAL TITLE OPTIONAL EXPENSES
LEASING FEES 10640.00

CONSTRUCTION INTERIM RATE 10.000 PCT
CONSTRUCTION PERIOD 8 MONTHS
LAND INTERIM RATE IS 0. PCT
255698.00 SQUARE FEET AT \$ 1.30

INTERIM RATE 0. PCT FOR 0. MONTHS

COST PER MONTH 0. FOR 0. MONTHS

OTHER LAND COSTS 0.

CONSTRUCTION COST ESTIMATE

SHOPPING CENTER CASE STUDY

DATE: 3/11/ 79

BLDG: 1

RUN : 1

CONSTRUCTION COSTS

DOLLARS

TOTAL BUILDING COST	60242. SQ FT AT \$ 19.69	\$ 1186165.
GRADE PARKING	275. SPACES AT \$ 327.	90001.
RESTAURANT		74538.

SUBTOTAL CONSTRUCTION	1350704.
-----------------------	----------

LOAN ORIGATION FEES	AT 1.5 PCT	20000.
LEASING FEES	AT 0.8 PCT	10640.

CUMULATIVE SUBTOTAL	1381344.
---------------------	----------

INTERIM INTEREST-CONSTRUCTION		
\$ 1381344. AT 10.0 PCT FOR 8 MONTHS COMPOUNDED		52820.

TOTAL CONSTRUCTION COSTS	1434164.
--------------------------	----------

LAND COSTS

255698. SQ FT AT \$ 1.30	332407.
INTERIM INTEREST-LAND	

TOTAL LAND COST	332407.
-----------------	---------

TOTAL LAND AND CONSTRUCTION COST	1766571.
----------------------------------	----------

PRO FORMA CASH FLOW TABLE

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS		PAGE	1 OF 12
SITE :	255698. SQUARE FEET	DATE	3-11- 79
BUILDING :	60242. SQUARE FEET	BLDG	1
EFFICIENCY:	100.00 PCT(60242. SQ FT)		
LOAN RATIO:	75.00 PCT OF \$ 1766571.		
LOAN :	\$ 1324929.		
EQUITY :	\$ 441643.		
FINANCING :	27. YEARS 9.625 PCT		
OTR INCOME:	\$ 0. ANNUALLY	RUN	1
EXPENSES :	\$ 0.77 PER SQ FT		

ANNUAL CASH FLOWS

	VACANCY ALLOWANCE				
	3.00 PCT	3.77 PCT	4.00 PCT	5.00 PCT	6.00 PCT
RENTAL RATES					
ANNUAL \$/SQ FT					
\$ 3.25	5641.	4134.	3683.	1726.	-232.
\$ 3.50	20250.	18626.	18142.	16033.	13925.
\$ 3.67	30184.	28482.	27973.	25762.	23551.
\$ 3.75	34859.	33119.	32600.	30341.	28081.
\$ 4.00	49467.	47612.	47058.	44648.	42238.

BREAKEVEN RENTAL RATES

	VACANCY ALLOWANCE				
	3.00 PCT	3.77 PCT	4.00 PCT	5.00 PCT	6.00 PCT
RENTAL RATES					
ANNUAL \$/SQ FT					
	3.15	3.18	3.19	3.22	3.25

PRO FORMA CASH FLOW TABLE

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS	PAGE	2 OF 12
SITE : 255698. SQUARE FEET	DATE	3-11- 79
BUILDING : 60242. SQUARE FEET	BLDG	1
EFFICIENCY: 100.00 PCT(60242. SQ FT)		
LOAN RATIO: 75.00 PCT OF \$ 1766571.		
LOAN : \$ 1324929.		
EQUITY : \$ 441643.		
FINANCING : 27. YEARS 9.625 PCT		
VACANCY : 3.77 PCT OF LEASEABLE		
QTR INCOME: \$ 0. ANNUALLY	RUN	1

ANNUAL CASH FLOWS

ANNUAL EXPENSE RATES PER SQ FT

	\$ 0.70	\$ 0.77	\$ 0.80	\$ 0.90	\$ 1.00
RENTAL RATES					
ANNUAL \$/SQ FT					
\$ 3.25	8351.	4134.	2326.	-3698.	-9722.
\$ 3.50	22843.	18626.	16819.	10795.	4771.
\$ 3.67	32698.	28482.	26674.	20650.	14626.
\$ 3.75	37336.	33119.	31312.	25288.	19264.
\$ 4.00	51829.	47612.	45805.	39780.	33756.

BREAKEVEN RENTAL RATES

ANNUAL EXPENSE RATES PER SQ FT

	\$ 0.70	\$ 0.77	\$ 0.80	\$ 0.90	\$ 1.00
RENTAL RATES					
ANNUAL \$/SQ FT					
	3.11	3.18	3.21	3.31	3.42

PRO FORMA CASH FLOW TABLE

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS		PAGE	3 OF 12
SITE :	255698. SQUARE FEET	DATE	3-11- 79
BUILDING :	60242. SQUARE FEET	BLDG	1
EFFICIENCY:	100.00 PCT(60242. SQ FT)		
LOAN RATIO:	75.00 PCT OF \$ 1766571.		
LOAN :	\$ 1324929.		
EQUITY :	\$ 441643.		
VACANCY :	3.77 PCT OF LEASEABLE		
GTR INCOME:	\$ 0. ANNUALLY	RUN	1
EXPENSES :	\$ 0.77 PER SQ FT		

ANNUAL CASH FLOWS

FINANCING PARAMETERS

27. YEARS	27. YEARS	27. YEARS	30. YEARS	25. YEARS
9.62 PCT	9.75 PCT	10.00 PCT	10.25 PCT	9.50 PCT

RENTAL RATES
ANNUAL \$/SQ FT

\$ 3.25	4134.	2716.	-135.	-453.	3109.
\$ 3.50	18626.	17208.	14358.	14039.	17601.
\$ 3.67	28482.	27063.	24213.	23894.	27456.
\$ 3.75	33119.	31701.	28851.	28532.	32094.
\$ 4.00	47612.	46194.	43343.	43025.	46587.

BREAKEVEN RENTAL RATES

FINANCING PARAMETERS

27. YEARS	27. YEARS	27. YEARS	30. YEARS	25. YEARS
9.62 PCT	9.75 PCT	10.00 PCT	10.25 PCT	9.50 PCT

RENTAL RATES
ANNUAL \$/SQ FT

3.18	3.20	3.25	3.26	3.20
------	------	------	------	------

PRO FORMA CASH FLOW TABLE

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS

PAGE 4 OF 12

SITE :	255698. SQUARE FEET	DATE	3-11- 79
BUILDING :	60242. SQUARE FEET	BLDG	1
LOAN RATIO:	75.00 PCT OF \$ 1766571.		
LOAN :	\$ 1324929.		
EQUITY :	\$ 441643.		
FINANCING :	27. YEARS 9.625 PCT		
VACANCY :	3.77 PCT OF LEASEABLE		
QTR INCOME:	\$ 0. ANNUALLY	RUN	1
EXPENSES :	\$ 0.77 PER SQ FT		

ANNUAL CASH FLOWS

BUILDING EFFICIENCY (PCT OF GROSS)

99.60 PCT 100.00 PCT 102.92 PCT 106.24 PCT 109.56 PCT
LOAN TO COST RATIO

70.00 PCT 72.00 PCT 75.00 PCT 78.00 PCT 80.00 PCT

RENTAL RATES
ANNUAL \$/SQ FT

\$ 3.25	17708.	12993.	3563.	4134.	8278.
\$ 3.50	33586.	28390.	17998.	18626.	23194.
\$ 3.67	44383.	38860.	27813.	28482.	33336.
\$ 3.75	49464.	43787.	32432.	33119.	38109.
\$ 4.00	65342.	59184.	46867.	47612.	53025.

BREAKEVEN RENTAL RATES

BUILDING EFFICIENCY (PCT OF GROSS)

99.60 PCT 100.00 PCT 102.92 PCT 106.24 PCT 109.56 PCT
LOAN TO COST RATIO

70.00 PCT 72.00 PCT 75.00 PCT 78.00 PCT 80.00 PCT

RENTAL RATES
ANNUAL \$/SQ FT

2.97	3.04	3.19	3.18	3.11
------	------	------	------	------

PRO FORMA CASH FLOW TABLE

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS	PAGE	5 OF 12
SITE : 255698. SQUARE FEET	DATE	3-11- 79
BUILDING : 60242. SQUARE FEET	BLDG	1
EFFICIENCY: 100.00 PCT(60242. SQ FT)		
FINANCING : 27. YEARS 9.625 PCT		
VACANCY : 3.77 PCT OF LEASEABLE		
GTR INCOME: \$ 0. ANNUALLY	RUN	1
EXPENSES : \$ 0.77 PER SQ FT		

ANNUAL CASH FLOWS

LOAN TO COST RATIO

	70.00 PCT	72.00 PCT	75.00 PCT	78.00 PCT	80.00 PCT
RENTAL RATES					
ANNUAL \$/SQ FT					
\$ 3.25	13326.	9649.	4134.	-1382.	-5059.
\$ 3.50	27819.	24142.	18626.	13111.	9434.
\$ 3.67	37674.	33997.	28482.	22966.	19289.
\$ 3.75	42312.	38635.	33119.	27604.	23927.
\$ 4.00	56804.	53127.	47612.	42096.	38420.

BREAKEVEN RENTAL RATES

LOAN TO COST RATIO

	70.00 PCT	72.00 PCT	75.00 PCT	78.00 PCT	80.00 PCT
RENTAL RATES					
ANNUAL \$/SQ FT					
	3.02	3.08	3.18	3.27	3.34

PRO FORMA CASH FLOW TABLE

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS	PAGE	6 OF 12
SITE : 255698. SQUARE FEET	DATE	3-11- 79
BUILDING : 60242. SQUARE FEET	BLDG	1
EFFICIENCY: 100.00 PCT(60242. SQ FT)		
LOAN RATIO: 75.00 PCT OF \$ 1766571.		
LOAN : \$ 1324929.		
EQUITY : \$ 441643.		
REVENUE : \$ 3.67 PER SQ FT		
OTR INCOME: \$ 0. ANNUALLY	RUN	1
EXPENSES : \$ 0.77 PER SQ FT		

ANNUAL CASH FLOWS

FINANCING PARAMETERS

27. YEARS	27. YEARS	27. YEARS	30. YEARS	25. YEARS
9.62 PCT	9.75 PCT	10.00 PCT	10.25 PCT	9.50 PCT

VACANCY RATES

3.00 PCT	30184.	28766.	25915.	25597.	29159.
3.77 PCT	28482.	27063.	24213.	23894.	27456.
4.00 PCT	27973.	26555.	23704.	23386.	26948.
5.00 PCT	25762.	24344.	21494.	21175.	24737.
6.00 PCT	23551.	22133.	19283.	18964.	22526.

BREAKEVEN RENTAL RATES

FINANCING PARAMETERS

27. YEARS	27. YEARS	27. YEARS	30. YEARS	25. YEARS
9.62 PCT	9.75 PCT	10.00 PCT	10.25 PCT	9.50 PCT

VACANCY RATES

3.00 PCT	3.15	3.18	3.23	3.23	3.17
3.77 PCT	3.18	3.20	3.25	3.26	3.20
4.00 PCT	3.19	3.21	3.26	3.27	3.20
5.00 PCT	3.22	3.24	3.29	3.30	3.24
6.00 PCT	3.25	3.29	3.33	3.34	3.27

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS

PAGE 7 OF 12

SITE	:	255698. SQUARE FEET	DATE	3-11- 79
BUILDING	:	60242. SQUARE FEET	BLDG	1
EFFICIENCY:		100.00 PCT(- 60242. SQ FT)		
LOAN RATIO:		75.00 PCT OF \$ 1766571.		
LOAN	:	\$ 1324929.		
EQUITY	:	\$ 441643.		
REVENUE	:	\$ 3.67 PER SQ FT		
VACANCY	:	3.77 PCT OF LEASEABLE		
OTR INCOME:	\$	0. ANNUALLY	RUN	1

ANNUAL CASH FLOWS

FINANCING PARAMETERS

27. YEARS	27. YEARS	27. YEARS	30. YEARS	25. YEARS
9.62 PCT	9.75 PCT	10.00 PCT	10.25 PCT	9.50 PCT

EXPENSE RATES
ANNUAL \$/SQ FT

	-----	-----	-----	-----	-----
\$ 0.70	32698.	31280.	28430.	28111.	31673.
\$ 0.77	28482.	27063.	24213.	23894.	27456.
\$ 0.80	26674.	25256.	22406.	22087.	25649.
\$ 0.90	20650.	19232.	16381.	16063.	19625.
\$ 1.00	14626.	13208.	10357.	10039.	13601.

BREAKEVEN RENTAL RATES

FINANCING PARAMETERS

27. YEARS	27. YEARS	27. YEARS	30. YEARS	25. YEARS
9.62 PCT	9.75 PCT	10.00 PCT	10.25 PCT	9.50 PCT

EXPENSE RATES
ANNUAL \$/SQ FT

	-----	-----	-----	-----	-----
\$ 0.70	3.11	3.13	3.18	3.19	3.12
\$ 0.77	3.18	3.20	3.25	3.26	3.20
\$ 0.80	3.21	3.23	3.28	3.29	3.23
\$ 0.90	3.31	3.34	3.39	3.39	3.33
\$ 1.00	3.42	3.44	3.49	3.50	3.44

31

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS

PAGE 8 OF 12

SITE	:	255698. SQUARE FEET	DATE	3-11- 79
BUILDING	:	60242. SQUARE FEET	BLDG	1
LOAN RATIO:		75.00 PCT OF \$ 1766571.		
LOAN	:	\$ 1324929.		
EQUITY	:	\$ 441643.		
FINANCING	:	27. YEARS 9.625 PCT		
REVENUE	:	\$ 3.67 PER SQ FT		
VACANCY	:	3.77 PCT OF LEASEABLE		
DTR INCOME:	:	\$ 0. ANNUALLY	RUN	1

ANNUAL CASH FLOWS

BUILDING EFFICIENCY (PCT OF GROSS)

99.60 PCT 100.00 PCT 102.92 PCT 106.24 PCT 109.56 PCT
LOAN TO COST RATIO

70.00 PCT 72.00 PCT 75.00 PCT 78.00 PCT 80.00 PCT

EXPENSE RATES
ANNUAL \$/SQ FT

\$ 0.70	49003.	43340.	32013.	32698.	37676.
\$ 0.77	44383.	38860.	27813.	28482.	33336.
\$ 0.80	42403.	36940.	26013.	26674.	31476.
\$ 0.90	35803.	30540.	20013.	20650.	25276.
\$ 1.00	29203.	24140.	14013.	14626.	19076.

BREAKEVEN RENTAL RATES

BUILDING EFFICIENCY (PCT OF GROSS)

99.60 PCT 100.00 PCT 102.92 PCT 106.24 PCT 109.56 PCT
LOAN TO COST RATIO

70.00 PCT 72.00 PCT 75.00 PCT 78.00 PCT 80.00 PCT

EXPENSE RATES
ANNUAL \$/SQ FT

\$ 0.70	2.90	2.97	3.12	3.11	3.04
\$ 0.77	2.97	3.04	3.19	3.18	3.11
\$ 0.80	3.00	3.07	3.22	3.21	3.14
\$ 0.90	3.11	3.17	3.32	3.31	3.25
	3.21	3.28	3.43	3.42	3.35

PRO FORMA CASH FLOW TABLE

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS	PAGE	9 OF 12
SITE : 255698. SQUARE FEET	DATE	3-11- 79
BUILDING : 60242. SQUARE FEET	BLDG	1
EFFICIENCY: 100.00 PCT(60242. SQ FT)		
FINANCING : 27. YEARS 9.625 PCT		
REVENUE : \$ 3.67 PER SQ FT		
VACANCY : 3.77 PCT OF LEASEABLE		
QTR INCOME: \$ 0. ANNUALLY	RUN	1

ANNUAL CASH FLOWS

LOAN TO COST RATIO

	70.00 PCT	72.00 PCT	75.00 PCT	78.00 PCT	80.00 PCT
EXPENSE RATES					
ANNUAL \$/SQ FT					
\$ 0.70	41891.	38214.	32698.	27183.	23506.
\$ 0.77	37674.	33997.	28482.	22966.	19289.
\$ 0.80	35867.	32190.	26674.	21159.	17482.
\$ 0.90	29842.	26165.	20650.	15135.	11458.
\$ 1.00	23818.	20141.	14626.	9110.	5434.

BREAKEVEN RENTAL RATES

LOAN TO COST RATIO

	70.00 PCT	72.00 PCT	75.00 PCT	78.00 PCT	80.00 PCT
EXPENSE RATES					
ANNUAL \$/SQ FT					
\$ 0.70	2.95	3.01	3.11	3.20	3.26
\$ 0.77	3.02	3.08	3.18	3.27	3.34
\$ 0.80	3.05	3.11	3.21	3.31	3.37
\$ 0.90	3.16	3.22	3.31	3.41	3.47
\$ 1.00	3.26	3.32	3.42	3.51	3.58

PRO FORMA CASH FLOW TABLE

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS		PAGE	10 OF 12
SITE :	255698. SQUARE FEET	DATE	3-11- 79
BUILDING :	60242. SQUARE FEET	BLDG	1
EFFICIENCY:	100.00 PCT(60242. SQ FT)		
REVENUE :	\$ 3.67 PER SQ FT		
VACANCY :	3.77 PCT OF LEASEABLE		
OTR INCOME:	\$ 0. ANNUALLY	RUN	1
EXPENSES :	\$ 0.77 PER SQ FT		

ANNUAL CASH FLOWS

LOAN TO COST RATIO

70.00 PCT 72.00 PCT 75.00 PCT 78.00 PCT 80.00 PCT

FINANCING

27.YR 9.62PCT	37674.	33997.	28482.	22966.	19289.
27.YR 9.75PCT	36350.	32636.	27063.	21491.	17777.
27.YR 10.00PCT	33690.	29899.	24213.	18527.	14736.
30.YR 10.25PCT	33393.	29593.	23894.	18195.	14396.
25.YR 9.50PCT	36717.	33013.	27456.	21900.	18196.

BREAKEVEN RENTAL RATES

LOAN TO COST RATIO

70.00 PCT 72.00 PCT 75.00 PCT 78.00 PCT 80.00 PCT

FINANCING

27.YR 9.62 PCT	3.02	3.08	3.18	3.27	3.34
27.YR 9.75 PCT	3.04	3.11	3.20	3.30	3.36
27.YR 10.00 PCT	3.09	3.15	3.25	3.35	3.42
30.YR 10.25 PCT	3.09	3.16	3.26	3.36	3.42
25.YR 9.50 PCT	3.04	3.10	3.20	3.29	3.36

SENSITIVITY TABLE

SHOPPING CENTER CASE STUDY

FIXED PARAMETERS

PAGE 11 OF 12

SITE :	255698. SQUARE FEET	DATE	3-11- 79
BUILDING :	60242. SQUARE FEET	BLDG	1
EFFICIENCY:	100.00 PCT OF GROSS		
LOAN RATIO:	75.00 PCT OF \$ 1766571.		
EQUITY :	\$ 441643.		
FINANCING :	27. YEARS 9.625 PCT		
REVENUE :	\$ 3.67 PER SQ FT		
VACANCY :	3.77 PCT OF LEASEABLE		
PARK/OTHER:	\$ 0. ANNUALLY	RUN	1
EXPENSES :	\$ 0.77 PER SQ FT		
CONSTRUCTION AND LAND COST	1766571.		
CONSTRUCTION INTERIM RATE	10.000 PCT		
CONSTRUCTION PERIOD	8 MONTHS		
LAND INTERIM RATE IS	0. PCT		

EFFECT OF SELECTED CHANGES IN PARAMETERS

PARAMETER CHANGE	INCREASE IN CASH FLOW	EFFECT ON CONSTRUCTION
DECREASE CONSTRUCTION COST \$ 100,000	\$ 11050.	\$ -106179.
DECREASE CONSTRUCTION \$ 1.00 PER SQ FT	6657.	-63964.
INCREASE CONSTRUCTION PERIOD 1 MONTH	-1198.	11511.
DECREASE CONST AND LAND INTERIM 1 PCT	590.	-5673.
DECREASE TOTAL LAND COST BY \$ 332407.	34594.	
INCREASE BUILDING EFFICIENCY 1 PCT	1664.	
INCREASE RENTAL RATE \$.10 PER SQ FT	5797.	
DECREASE VACANCY RATE 1PCT	2211.	
DECREASE OPERATING RATE \$.10 PER SQ FT	6024.	
DECREASE PERMANENT RATE .25PCT	2821.	
DECREASE PERMANENT LOAN TERM BY 1 YEAR	-1136.	
DECREASE PERMANENT LOAN TERM BY 5 YEARS	-7252.	
DECREASE THE LOAN RATIO BY 5 PERCENT	9192.	

EQUIVALENT EFFECT TO YIELD

A \$ 5000. INCREASE IN ANNUAL CASH FLOW

DECREASE CONSTRUCTION COSTS BY	\$ 45249.
DECREASE CONSTRUCTION COST BY	\$ 0.75 PER SQ FT
DECREASE LAND COST (NO INTERIM) BY	\$ 48045.
DECREASE CONSTRUCTION PERIOD BY	4.2 MONTHS
DECREASE INTERIM INTEREST BY	8.47 PCT
INCREASE BUILDING EFFICIENCY BY	3.01 PCT
INCREASE RENT RATE BY	\$ 0.09 PER SQ FT
DECREASE VACANCY BY	2.26 PCT
DECREASE EXPENSE RATE BY	\$ 0.08 PER SQ FT
DECREASE PERMANENT RATE BY	0.44 PCT
INCREASE PERMANENT LOAN TERM BY	3.4 YEARS
DECREASE LOAN RATIO BY	2.7 PERCENT

SHOPPING CENTER CASE STUDY

DATE: 3/11/ 79

BLDG: 1

RUN : 1

GROSS SQUARE FEET IN BUILDING: 60242.
 BUILDING EFFICIENCY : 100.0 PCT
 NET LEASEABLE SQUARE FOOTAGE : 60242.

LAND AND CONSTRUCTION COST : \$ 1766571.
 LOAN TO COST RATIO : 75.0 PCT
 ORIGINAL LOAN AMOUNT : \$ 1324929.

EQUITY REQUIREMENT : \$ 441643.

PERMANENT INTEREST RATE : 9.625 PCT
 TERM OF LOAN 27. YEARS

ANNUAL DEBT SERVICE : \$ 137885.

ANNUAL DOLLARS

GROSS INCOME : 60242. SQ FT AT \$ 3.67 221088.
 LESS: VACANCY OF 3.77 PCT 8335.

GROSS EFFECTIVE INCOME 212753.

OPERATING EXPENSES: 60242. SQ FT AT \$ 0.77 46386.

NET OPERATING INCOME 166367.

DEBT SERVICE (10.41 PCT CONSTANT) 137885.

PRO FORMA CASH FLOW 28482.

RETURN ON EQUITY 6.45 PERCENT

DEBT SERVICE COVERAGE: 1.207

DEFAULT RATIO : 83.35 PERCENT

PROGRAM STOP AT 17870

USED 17.97 UNITS
 /COST OFF

ACCRUED CHARGES SINCE SIGNIN

\$ 3.82 COMPUTER

6.35 CONNECT

5.70 CHARACTERS

\$ 15.87 TOTAL

EFFICIENCY = 89.8

00028.09 CRU 0000.46 TCH 0041.46 KC

OFF AT 16:59CST 03/12/79

EXHIBIT 6

V A L T E S T

A DEMONSTRATION PACKET

PREPARED BY
LANDMARK RESEARCH, INC.
MADISON, WISCONSIN

PREPARED FOR
THE REAL ESTATE ANALYSTS NORTHSTAR USERS GROUP

SEPTEMBER 24 AND 25, 1982
COSTA MESA, CALIFORNIA

V A L T E S T

DEMONSTRATION 1

INPUT ASSUMPTIONS

1. ENTER PROJECT NAME ? J
2. ENTER PROJECTION PERIOD ? 5
3. DO YOU WANT TO ENTER EFFECTIVE GROSS REVENUE INSTEAD OF NOI? N
TO REPEAT PREVIOUS YEAR'S NOI/EGR FOR BAL OF PROJECTION ENTER 0
N.O.I. YEAR 1? 5000
N.O.I. YEAR 2? 5000
N.O.I. YEAR 3? 6000
N.O.I. YEAR 4? 6000
N.O.I. YEAR 5? 7000
4. ACQUISITION COST: ? 50000
5. DO YOU WANT TO USE STANDARD FINANCING? Y OR N? Y
MTG. RATIO OR AMOUNT, INT., TERM, NO PAY/YR ? .8, .12, 25, 12
6. ENTER RATIO OF IMP #1/TOTAL VALUE. LIFE OF IMP #1? .8, 15
IS THERE A SECOND IMPROVEMENT? Y OR N? N
7. DEPRECIATION METHOD, IMPROVEMENT #1 ? 2
ENTER D.B. %: ? 175
IS PROPERTY SUBSIDIZED HOUSING ? Y OR N ? N
IS PROPERTY RESIDENTIAL? Y OR N? Y
8. IS OWNER A TAXABLE CORPORATION? Y OR N ? Y
CORPORATE FEDERAL ORDINARY TAX RATE COULD BE :
17% - 46% (1978 LAW, EFFECTIVE 1979)
16% - 46% (1981 LAW, EFFECTIVE 1982)
15% - 46% (1981 LAW, EFFECTIVE 1983 & THEREAFTER)
MAXIMUM CORPORATE CAPITAL GAIN ALTERNATIVE TAX RATE IS 28%

(PLUS STATE RATE)
- ENTER:
1) EFFECTIVE ORDINARY RATE 2) EFFECTIVE ORDINARY RATE (YEAR OF SALE)
? .46, .46
9. RESALE PRICE (NET OF SALE COSTS) ? 60000
10. IS THERE LENDER PARTICIPATION ? N
11. ENTER OWNER'S AFTER TAX REINVESTMENT RATE (%) ? 9
12. ENTER OWNER'S AFTER TAX OPPORTUNITY COST OF EQUITY FUNDS (%) ? 9

DEMONSTRATION 1 (Cont.)

AFTER TAX CASH FLOW PROJECTION

J

DATE 9/14/82

DATA SUMMARY

ACQUISITION COST: \$50,000. MTG. AMT.: \$40,000.
 NOI 1ST YR: \$5,000. MTG. INT.: 12%
 ORG. EQUITY: \$10,000. MTG. TERM: 25. YRS
 CTO 1ST YEAR: \$-55. DEBT SERVICE 1ST YEAR: \$5,055.
 MTG. CONST.: .1263869
 IMP. #1 VALUE: \$40,000. IMP. #1 LIFE: 15.
 INC. TX RATE: 46%
 SALE YR RATE: 46% OWNER: CORPORATION

DEPRECIATION IMPROVEMENT #1 : 175% D.B.
 RESIDENTIAL PROPERTY

LENDER PARTICIPATION: CASH THROW-OFF: NONE REVERSION: NONE

NO REPRESENTATION IS MADE THAT THE ASSUMPTIONS PROVIDED BY JEAN
 ARE PROPER OR THAT THE CURRENT TAX ESTIMATES USED IN THIS
 PROJECTION WILL BE ACCEPTABLE TO TAXING AUTHORITIES. NO ESTIMATE
 HAS BEEN MADE OF MINIMUM PREFERENCE TAX. CAPITAL LOSSES IN YEAR OF
 SALE ARE TREATED AS ORDINARY LOSSES (SECTION 1231 PROPERTY) AND
 ARE CREDITED AGAINST TAXES PAID AT THE
 ORDINARY RATE AT THE TIME OF SALE.
 FOR THE PURPOSE OF THE MODIFIED INTERNAL RATE OF RETURN (M.I.R.R.)
 CALCULATION, NEGATIVE CASH IN ANY ONE PERIOD IS COVERED
 BY A CONTRIBUTION FROM EQUITY IN THAT PERIOD

YEAR	NOI	MTG INT & LENDERS %	TAX DEP	TAXABLE INCOME	INCOME TAX	AFTER TAX CASH FLOW
1.	5000.	4785.	4667.	-4453.	-2049.	1994.
2.	5000.	4751.	4122.	-3874.	-1783.	1728.
3.	6000.	4713.	3641.	-2355.	-1084.	2029.
4.	6000.	4669.	3216.	-1867.	-869.	1814.
5.	7000.	4620.	2641.	-462.	-214.	2159.
	\$29000.	\$23539.	\$18488.	\$-13031.	\$-5999.	\$9722.

DEMONSTRATION 1 (Cont.)

RESALE PRICE:	\$60,000.	1ST YR B4 TAX EQ DIV:	-.5548%
LESS MORTGAGE BALANCE:	\$38,261.	AVG DEBT COVER RATIO:	1.1473
PROCEEDS BEFORE TAXES:	\$21,739.		
LESS LENDER'S %:	\$0.		
NET SALES PROCEEDS			
BEFORE TAXES:	\$21,739.		

=====

RESALE PRICE:	\$60,000.
LESS LENDER'S %:	\$0.
NET RESALE PRICE:	\$60,000.
LESS BASIS:	\$31,512.
TOTAL GAIN:	\$28,488.
EXCESS DEPRECIATION:	\$5,155.
CAPITAL GAIN:	\$23,333.
ORDINARY GAIN:	\$5,155.

=====

TAX ON ORDINARY GAIN:	\$2,371.
TAX ON CAPITAL GAIN:	\$6,533.
PLUS MORTGAGE BAL:	\$38,261.
TOTAL DEDUCTIONS FROM	
NET RESALE PRICE:	\$47,166.

=====

NET SALES PROCEEDS	
AFTER TAX:	\$12,834.

=====

IF PURCHASED AS ABOVE, HELD 5 YEARS & SOLD FOR \$60,000.
 THE MODIFIED I.R.R. BEFORE TAXES IS 20.6487% AND AFTER TAXES IS 19.5605%
 ASSUMING AN AFTER TAX REINVESTMENT RATE OF 9%, AND OPPORTUNITY COST OF 9%

DEMONSTRATION 1 (Cont.)

MORTGAGE ANALYSIS

J

YEAR	NOI	MORT INT.	MORT AMORT	DEBT SERV	DCR	MTG. BAL.
1.	5000.	4785.	270.	5055.	.989	39730.
2.	5000.	4751.	304.	5055.	.989	39426.
3.	6000.	4713.	343.	5055.	1.187	39083.
4.	6000.	4669.	386.	5055.	1.187	38697.
5.	7000.	4620.	435.	5055.	1.385	38261.
AVG	\$5,800.				1.147	

DISTRIBUTION OF CASH THROW-OFF

J

YEAR	CASH THROW-OFF TOTAL	CASH THROW-OFF TO EQUITY	CASH BONUS TO LENDER
1.	-55.	-55.	0.
2.	-55.	-55.	0.
3.	945.	945.	0.
4.	945.	945.	0.
5.	1945.	1945.	0.
	----- 3723.	----- 3723.	----- 0.

RESALE PRICE: \$60,000.
 LESS MORTGAGE BALANCE: \$38,261.
 PROCEEDS BEFORE TAXES: \$21,739.
 LESS LENDER'S %: \$0.
 NET SALES PROCEEDS
 BEFORE TAXES: \$21,739.

=====

CASH THROW-OFF = 0% REVERSION = 0%

DEMONSTRATION 1 (Cont.)

DEPRECIATION SCHEDULE

J

IMPROVEMENT # 1

175% D.B.

RESIDENTIAL

YEAR	TAX DEP.	S.L. DEP.	EXCESS DEP	BALANCE
1.	4666.7	2666.7	2000.0	35333.3
2.	4122.2	2666.7	1455.6	31211.1
3.	3641.3	2666.7	974.6	27569.8
4.	3216.5	2666.7	549.8	24353.3
5.	2841.2	2666.7	174.6	21512.1

	=====	=====	=====
TOTAL	18487.9	13333.3	5154.6

EQUITY ANALYSIS

J

BEFORE TAX EQUITY DIVIDEND

YR	NOI	YR END EQUITY	AMOUNT	CASH RETURN ORG EQ	CUR EQ
1.	\$5,000.	\$10,325.	\$-55.	-.0055	-.0054
2.	5,000.	10,685.	-55.	-.0055	-.0052
3.	6,000.	11,028.	945.	.0945	.0856
4.	6,000.	11,414.	945.	.0945	.0827
5.	7,000.	11,850.	1,945.	.1945	.1641

ORIGINAL EQUITY: \$ 10000

VALTEST

DEMONSTRATION 2

INPUT ASSUMPTIONS

1. ENTER PROJECT NAME ? CARDINAL-2
2. ENTER PROJECTION PERIOD ? 5
3. DO YOU WANT TO ENTER EFFECTIVE GROSS REVENUE INSTEAD OF NOI? N
TO REPEAT PREVIOUS YEAR'S NOI/EGR FOR BAL OF PROJECTION ENTER 0
N.O.I. YEAR 1? 81745
N.O.I. YEAR 2? 81920
N.O.I. YEAR 3? 98910
N.O.I. YEAR 4? 108800
N.O.I. YEAR 5? 119680
4. ACQUISITION COST: ? 1007000
5. DO YOU WANT TO USE STANDARD FINANCING? Y OR N?Y
MTG. RATIO OR AMOUNT, INT., TERM, NO PAY/YR ? 647000, .15236, 30, 12
6. ENTER RATIO OF IMP #1/TOTAL VALUE, LIFE OF IMP #1? .149, 15
IS THERE A SECOND IMPROVEMENT? Y OR N? Y
ENTER RATIO OF IMP #2/TOTAL VALUE, LIFE OF IMP #2? .781, 15
ENTER REHABILITATION TAX CREDIT FOR IMP #2: 196625
IS STRUCTURE A CERTIFIED HISTORICAL LANDMARK? Y OR N?Y
7. DEPRECIATION METHOD, IMPROVEMENT #1 ? 1
DEPRECIATION METHOD, IMPROVEMENT #2 ? 1
IS PROPERTY SUBSIDIZED HOUSING ? Y OR N ?N
IS PROPERTY RESIDENTIAL? Y OR N? Y
8. IS OWNER A TAXABLE CORPORATION? Y OR N ?N
THE MAXIMUM FEDERAL INDIVIDUAL ORDINARY RATE COULD BE:
70% (PRE-1981 LAW)
50% (1981 LAW, EFFECTIVE 1982)

(PLUS STATE RATE)

ENTER:

- 1) EFFECTIVE ORDINARY RATE 2) EFFECTIVE ORDINARY RATE (YEAR OF SALE)
? .5, .5
9. RESALE PRICE (NET OF SALE COSTS) ? 1258750
10. IS THERE LENDER PARTICIPATION ?N
11. ENTER OWNER'S AFTER TAX REINVESTMENT RATE (%)? 11
12. ENTER OWNER'S AFTER TAX OPPORTUNITY COST OF EQUITY FUNDS (%)? 11

DEMONSTRATION 2 (Cont.)

AFTER TAX CASH FLOW PROJECTION

CARDINAL-2

DATE 9/14/82

DATA SUMMARY

ACQUISITION COST: \$1,007,000. MTG. AMT.: \$647,000.
 NOI 1ST YR: \$81,745. MTG. INT.: 15.236%
 ORIG. EQUITY: \$360,000. MTG. TERM: 30. YRS
 CTO 1ST YEAR: \$-17,893. DEBT SERVICE 1ST YEAR: \$99,638.
 MTG. CONST.: .15400037
 IMP. #1 VALUE: \$150,043. IMP. #1 LIFE: 15.
 IMP. #2 VALUE: \$786,467. IMP. #2 LIFE: 15.
 INC. TX RATE: 50%
 SALE YR RATE: 50% OWNER: INDIVIDUAL

DEPRECIATION IMPROVEMENT #1 : STRAIGHT LINE

DEPRECIATION IMPROVEMENT #2 : STRAIGHT LINE

RESIDENTIAL PROPERTY

CERTIFIED HISTORICAL STRUCTURE

LENDER PARTICIPATION: CASH THROW-OFF: NONE

REVERSION: NONE

NO REPRESENTATION IS MADE THAT THE ASSUMPTIONS PROVIDED BY JEAN
 ARE PROPER OR THAT THE CURRENT TAX ESTIMATES USED IN THIS
 PROJECTION WILL BE ACCEPTABLE TO TAXING AUTHORITIES. NO ESTIMATE
 HAS BEEN MADE OF MINIMUM PREFERENCE TAX. CAPITAL LOSSES IN YEAR OF
 SALE ARE TREATED AS ORDINARY LOSSES (SECTION 1231 PROPERTY) AND
 ARE CREDITED AGAINST TAXES PAID AT THE ORDINARY RATE AT THE TIME OF SALE.
 FOR THE PURPOSE OF THE MODIFIED INTERNAL RATE OF RETURN (M.I.R.R.)
 CALCULATION, NEGATIVE CASH IN ANY ONE PERIOD IS COVERED
 BY A CONTRIBUTION FROM EQUITY IN THAT PERIOD

YEAR	NOI	MTG INT & LENDERS %	TAX DEP	TAXABLE INCOME	INCOME TAX	AFTER TAX CASH FLOW
1.	81745.	98500.	62434.	-79190.	-236221.	218328.
2.	81920.	98313.	62434.	-78828.	-39415.	21697.
3.	98910.	98097.	62434.	-61622.	-30812.	30084.
4.	108800.	97845.	62434.	-51480.	-25741.	34903.
5.	119680.	97552.	62434.	-40307.	-20154.	40196.
	\$491055.	\$490307.	\$312170.	\$-311427.	\$-352343.	\$345207.

NOTE: 1ST YEAR'S TAX REDUCED BY \$196,625. FOR TAX CREDIT (IMP #2)

DEMONSTRATION 2 (Cont.)

RESALE PRICE: \$1,258,750.
 LESS MORTGAGE BALANCE: \$639,115.
 PROCEEDS BEFORE TAXES: \$619,635.
 LESS LENDER'S Z: \$0.
 NET SALES PROCEEDS
 BEFORE TAXES: \$619,635.

1ST YR B4 TAX EQ DIV: -4.9703%
 AVG DEBT COVER RATIO: .9857

RESALE PRICE: \$1,258,750.
 LESS LENDER'S X: \$0.
 NET RESALE PRICE: \$1,258,750.
 LESS BASIS: \$694,830.
 TOTAL GAIN: \$563,920.
 EXCESS DEPRECIATION: \$0.
 CAPITAL GAIN: \$563,920.
 ORDINARY GAIN: \$0.

TAX ON ORDINARY GAIN: \$0.
 TAX ON CAPITAL GAIN: \$112,784.
 PLUS MORTGAGE BAL: \$639,115.
 TOTAL DEDUCTIONS FROM
 NET RESALE PRICE: \$751,899.

NET SALES PROCEEDS
 AFTER TAX: \$506,851.

IF PURCHASED AS ABOVE, HELD 5 YEARS & SOLD FOR \$1,258,750.
 THE MODIFIED I.R.R. BEFORE TAXES IS 10.5005% AND AFTER TAXES IS 22.2744%
 ASSUMING AN AFTER TAX REINVESTMENT RATE OF 11%, AND OPPORTUNITY COST OF 11%

DEMONSTRATION 2 (Cont.)

DISTRIBUTION OF CASH THROW-OFF CARDINAL-2

YEAR	CASH THROW-OFF TOTAL	CASH THROW-OFF TO EQUITY	CASH BONUS TO LENDER
1.	-17893.	-17893.	0.
2.	-17718.	-17718.	0.
3.	-728.	-728.	0.
4.	9162.	9162.	0.
5.	20042.	20042.	0.
	-----	-----	-----
	-7136.	-7136.	0.

RESALE PRICE: \$1,258,750.
LESS MORTGAGE BALANCE: \$639,115.
PROCEEDS BEFORE TAXES: \$619,635.
LESS LENDER'S %: \$0.
NET SALES PROCEEDS
BEFORE TAXES: \$619,635.
=====

CASH THROW-OFF = 0% REVERSION = 0%

MORTGAGE ANALYSIS CARDINAL-2

YEAR	NOI	MORT INT.	MORT AMORT	DEBT SERV	DCR	NTG. BAL.
1.	81745.	98500.	1139.	99638.	.820	645861.
2.	81920.	98313.	1325.	99638.	.822	644537.
3.	98910.	98097.	1541.	99638.	.993	642995.
4.	108800.	97845.	1793.	99638.	1.092	641202.
5.	119680.	97552.	2086.	99638.	1.201	639115.
AUG	\$98,211.				.986	

EQUITY ANALYSIS CARDINAL-2

BEFORE TAX EQUITY DIVIDEND

YR	NOI	YR END EQUITY	AMOUNT	CASH RETURN ORG EQ	CUR EQ
1.	\$81,745.	\$379,032.	\$-17,893.	-.0497	-.0472
2.	81,920.	398,075.	-17,718.	-.0492	-.0445
3.	98,910.	400,345.	-728.	-.0020	-.0018
4.	108,800.	402,139.	9,162.	.0254	.0228
5.	119,680.	404,224.	20,042.	.0557	.0496

ORIGINAL EQUITY: \$ 360000

DEMONSTRATION 2 (Cont.)

DEPRECIATION SCHEDULE
CARDINAL-2
IMPROVEMENT # 1
STRAIGHT LINE
RESIDENTIAL

YEAR	TAX DEP.	S.L. DEP.	EXCESS DEP	BALANCE
1.	10002.9	10002.9	.0	140040.1
2.	10002.9	10002.9	.0	130037.3
3.	10002.9	10002.9	.0	120034.4
4.	10002.9	10002.9	.0	110031.5
5.	10002.9	10002.9	.0	100028.7
	-----	-----	-----	
SUB-TOTAL	50014.3	50014.3	.0	

DEPRECIATION SCHEDULE
CARDINAL-2
IMPROVEMENT # 2
STRAIGHT LINE
RESIDENTIAL

YEAR	TAX DEP.	S.L. DEP.	EXCESS DEP	BALANCE
1.	52431.1	52431.1	.0	734035.9
2.	52431.1	52431.1	.0	681604.7
3.	52431.1	52431.1	.0	629173.6
4.	52431.1	52431.1	.0	576742.5
5.	52431.1	52431.1	.0	524311.3
	-----	-----	-----	
SUB-TOTAL	262155.7	262155.7	.0	
	=====	=====	=====	
TOTAL	312170.0	312170.0	.0	

VALTEST - DEMONSTRATION 3

INPUT ASSUMPTIONS

1. ENTER PROJECT NAME ? SELL AT LOSS TEST
2. ENTER PROJECTION PERIOD ? 5
3. DO YOU WANT TO ENTER EFFECTIVE GROSS REVENUE INSTEAD OF NOI? Y
TO REPEAT PREVIOUS YEAR'S NOI/EGR FOR BAL OF PROJECTION ENTER 0

EFFECTIVE GROSS REVENUE YEAR 1? 13800
 EFFECTIVE GROSS REVENUE YEAR 2? 14210
 EFFECTIVE GROSS REVENUE YEAR 3? 1000
 EFFECTIVE GROSS REVENUE YEAR 4? 15080
 EFFECTIVE GROSS REVENUE YEAR 5? 15530

VAR OP EXPENSE (Z) YEAR 1? 6
 VAR OP EXPENSE (Z) YEAR 2? 5
 VAR OP EXPENSE (Z) YEAR 3? 0

FIXED OP EXPENSE YEAR 1? 3700
 FIXED OP EXPENSE YEAR 2? 3920
 FIXED OP EXPENSE YEAR 3? 4160
 FIXED OP EXPENSE YEAR 4? 4410
 FIXED OP EXPENSE YEAR 5? 4670

4. ACQUISITION COST: ? 66000
5. DO YOU WANT TO USE STANDARD FINANCING? Y OR N? Y
MTG. RATIO OR AMOUNT, INT., TERM, NO PAY/YR ? 49500, .18, 25, 12
6. ENTER RATIO OF IMP #1/TOTAL VALUE, LIFE OF IMP #1? .25, 15
IS THERE A SECOND IMPROVEMENT? Y OR N? Y
ENTER RATIO OF IMP #2/TOTAL VALUE, LIFE OF IMP #2? .55, 15
ENTER REHABILITATION TAX CREDIT FOR IMP #2: 9075
IS STRUCTURE A CERTIFIED HISTORICAL LANDMARK? Y OR N? Y *
7. DEPRECIATION METHOD, IMPROVEMENT #1 ? 2
ENTER D.B. Z: ? 175 *
DEPRECIATION METHOD, IMPROVEMENT #2 ? 2
ENTER D.B. Z: ? 175 *
IS PROPERTY SUBSIDIZED HOUSING ? Y OR N ? N
IS PROPERTY RESIDENTIAL? Y OR N? N
8. IS OWNER A TAXABLE CORPORATION? Y OR N ? Y
CORPORATE FEDERAL ORDINARY TAX RATE COULD BE :
 17% - 46% (1978 LAW, EFFECTIVE 1979)
 16% - 46% (1981 LAW, EFFECTIVE 1982)
 15% - 46% (1981 LAW, EFFECTIVE 1983 & THEREAFTER)
 MAXIMUM CORPORATE CAPITAL GAIN ALTERNATIVE TAX RATE IS 28%

*For Illustrative
Purposes Only

(PLUS STATE RATE)

ENTER:

- 1) EFFECTIVE ORDINARY RATE 2) EFFECTIVE ORDINARY RATE (YEAR OF SALE)
? .4, .4
9. RESALE PRICE (NET OF SALE COSTS) ? 60000
10. IS THERE LENDER PARTICIPATION ? Y
ENTER CASH THROU-OFF (%), PROCEEDS BEFORE TAXES (%): 5, 5
11. ENTER OWNER'S AFTER TAX REINVESTMENT RATE (%)? 9
12. ENTER OWNER'S AFTER TAX OPPORTUNITY COST OF EQUITY FUNDS (%)? 9

DEMONSTRATION 3 (Cont.)

AFTER TAX CASH FLOW PROJECTION
 SELL AT LOSS TEST
 DATE 9/14/82

DATA SUMMARY *****

ACQUISITION COST:	\$66,000.	MTG. AMT.:	\$49,500.
NOI 1ST YR:	\$9,272.	MTG. INT.:	18%
ORG. EQUITY:	\$16,500.	MTG. TERM:	25. YRS
CTD 1ST YEAR:	\$258.	DEBT SERVICE 1ST YEAR:	\$9,014.
		MTG. CONST.:	.1820916
IMP. #1 VALUE:	\$16,500.	IMP. #1 LIFE:	15.
IMP. #2 VALUE:	\$36,300.	IMP. #2 LIFE:	15.
INC. TX RATE:	40%		
SALE YR RATE:	40%	OWNER:	CORPORATION

DEPRECIATION IMPROVEMENT #1 : 175% D.B.
 DEPRECIATION IMPROVEMENT #2 : 175% D.B.
 NON-RESIDENTIAL PROPERTY
 CERTIFIED HISTORICAL STRUCTURE
 LENDER PARTICIPATION: CASH THROW-OFF: 5% REVERSION: 5%

NO REPRESENTATION IS MADE THAT THE ASSUMPTIONS PROVIDED BY JEAN ARE PROPER OR THAT THE CURRENT TAX ESTIMATES USED IN THIS PROJECTION WILL BE ACCEPTABLE TO TAXING AUTHORITIES. NO ESTIMATE HAS BEEN MADE OF MINIMUM PREFERENCE TAX. CAPITAL LOSSES IN YEAR OF SALE ARE TREATED AS ORDINARY LOSSES (SECTION 1231 PROPERTY) AND ARE CREDITED AGAINST TAXES PAID AT THE ORDINARY RATE AT THE TIME OF SALE. THE
 FOR THE PURPOSE OF THE MODIFIED INTERNAL RATE OF RETURN (M.I.R.R.) CALCULATION, NEGATIVE CASH IN ANY ONE PERIOD IS COVERED BY A CONTRIBUTION FROM EQUITY IN THAT PERIOD

YEAR	NOI	MTG INT & LENDERS %	TAX DEF	TAXABLE INCOME	INCOME TAX	AFTER TAX CASH FLOW
1.	9272.	8914.	6160.	-5803.	-11397.	11643.
2.	9580.	8907.	5441.	-4770.	-1909.	2447.
3.	-3210.	8953.	4807.	-16870.	-6749.	-5475.
4.	9916.	8866.	4246.	-3197.	-1280.	2137.
5.	10084.	8837.	3750.	-2505.	-1003.	2019.
	\$35641.	\$44377.	\$24404.	\$-33145.	\$-22338.	\$12771.

NOTE: 1ST YEAR'S TAX REDUCED BY \$9,075. FOR TAX CREDIT (IMP #2)

DEMONSTRATION 3 (Cont.)

RESALE PRICE:	\$60,000.	1ST YR B4 TAX EQ DIV:	1.4881%
LESS MORTGAGE BALANCE:	\$48,670.	AVG DEBT COVER RATIO:	.7908
PROCEEDS BEFORE TAXES:	\$11,330.	AVG DEFAULT RATIO:	1.1581
LESS LENDER'S %:	\$567.		
NET SALES PROCEEDS			
BEFORE TAXES:	\$10,764.		
	=====		

RESALE PRICE:	\$60,000.
LESS LENDER'S %:	\$567.
NET RESALE PRICE:	\$59,433.
LESS BASIS:	\$41,596.
TOTAL GAIN:	\$17,838.
TAX DEPRECIATION:	\$24,404.
CAPITAL GAIN:	\$0.
ORDINARY GAIN:	\$17,838.
	=====

TAX ON ORDINARY GAIN:	\$7,135.
TAX ON CAPITAL GAIN:	\$0.
PLUS MORTGAGE BAL:	\$48,670.
TOTAL DEDUCTIONS FROM	
NET RESALE PRICE:	\$55,805.
	=====

NET SALES PROCEEDS	
AFTER TAX:	\$3,629.
	=====

IF PURCHASED AS ABOVE, HELD 5 YEARS & SOLD FOR \$60,000.
THE MODIFIED I.R.R. BEFORE TAXES IS -12.4777% AND AFTER TAXES IS 5.4951%
ASSUMING AN AFTER TAX REINVESTMENT RATE OF 9% AND OPPORTUNITY COST OF 9%

DEMONSTRATION 3 (Cont.)

DISTRIBUTION OF CASH THROW-OFF
SELL AT LOSS TEST

YEAR	CASH THROW-OFF TOTAL	CASH THROW-OFF TO EQUITY	CASH BONUS TO LENDER
1.	258.	246.	13.
2.	566.	538.	28.
3.	-12224.	-12224.	0.
4.	902.	857.	45.
5.	1070.	1016.	53.
	<hr/> -9427.	<hr/> -9567.	<hr/> 140.

RESALE PRICE: \$60,000.
 LESS MORTGAGE BALANCE: \$46,670.
 PROCEEDS BEFORE TAXES: \$11,330.
 LESS LENDER'S %: \$567.
 NET SALES PROCEEDS
 BEFORE TAXES: \$10,764.
 =====

CASH THROW-OFF = 5% REVERSION = 5%

EQUITY ANALYSIS
SELL AT LOSS TEST

BEFORE TAX EQUITY DIVIDEND					
YR	NOI	YR END EQUITY	AMOUNT	CASH RETURN	
				ORG EQ	CUR EQ
1.	\$9,272.	\$16,613.	\$246.	.0149	.0148
2.	9,580.	16,747.	538.	.0326	.0321
3.	-3,210.	29,131.	-12,224.	-.7408	-.4196
4.	9,916.	29,324.	857.	.0520	.0292
5.	10,084.	29,554.	1,016.	.0616	.0344

ORIGINAL EQUITY: \$ 16500

DEMONSTRATION 3 (Cont.)

MORTGAGE ANALYSIS
SELL AT LOSS TEST

YEAR	NOI	MORT INT.	MORT AMORT	DEBT SERV	DCR	MTG. BAL.	DEFAULT RATIO
1.	9272.	8901.	113.	9014.	1.029	49387.	.981
2.	9580.	8879.	135.	9014.	1.063	49253.	.960
3.	-3210.	8853.	161.	9014.	-.356	49092.	13.224
4.	9916.	8821.	192.	9014.	1.100	48900.	.940
5.	10084.	8784.	230.	9014.	1.119	48670.	.931
AVG	\$7,128.				.791		1.158

REVENUE AND EXPENSE REPORT
SELL AT LOSS TEST
DATE 9/14/82

YEAR	EFF GROSS REV	% RATE	% VAR OP.	\$ FIXED OP	NOI
1.	\$13,800.	6.2	\$828.	\$3,700.	\$9,272.
2.	\$14,210.	5.2	\$711.	\$3,920.	\$9,580.
3.	\$1,000.	5.2	\$50.	\$4,160.	\$-3,210.
4.	\$15,080.	5.2	\$754.	\$4,410.	\$9,916.
5.	\$15,530.	5.2	\$777.	\$4,670.	\$10,084.
	-----		-----	-----	-----
	\$59,620.		\$3,119.	\$20,860.	\$35,641.

55

DEMONSTRATION 3 (Cont.)

DEPRECIATION SCHEDULE
 SELL AT LOSS TEST
 IMPROVEMENT # 1
 175% D.B.
 NON-RESIDENTIAL

YEAR	TAX DEP.	S.L. DEP.	TAX DEP	BALANCE
1.	1925.0	1100.0	1925.0	14575.0
2.	1700.4	1100.0	1700.4	12874.6
3.	1502.0	1100.0	1502.0	11372.5
4.	1326.8	1100.0	1326.8	10045.8
5.	1172.0	1100.0	1172.0	8873.7
	-----	-----	-----	
SUB-TOTAL	7626.3	5500.0	7626.3	

DEPRECIATION SCHEDULE
 SELL AT LOSS TEST
 IMPROVEMENT # 2
 175% D.B.
 NON-RESIDENTIAL

YEAR	TAX DEP.	S.L. DEP.	TAX DEP	BALANCE
1.	4235.0	2420.0	4235.0	32065.0
2.	3740.9	2420.0	3740.9	28324.1
3.	3304.5	2420.0	3304.5	25019.6
4.	2919.0	2420.0	2919.0	22100.7
5.	2578.4	2420.0	2578.4	19522.2
	-----	-----	-----	
SUB-TOTAL	16777.8	12100.0	16777.8	
	=====	=====	=====	
TOTAL	24404.0	17600.0	24404.0	

REAL ESTATE INVESTMENT ANALYSIS

Presented By

Professor James A. Graaskamp, Ph.D., CRE, SREA
University of Wisconsin School of Business

THIRD HOUR

III. FINANCIAL RISK MANAGEMENT

Investment is a real estate enterprise, as a mortgage lender or equity investor is simply buying a set of financial assumptions about the interaction of the project to its context, of the firm to its environment. Real estate analysis is to control the variance between expectations and realization, between proforma prospects and historical balance sheets and profit and loss statements.

- A. Analysis is risk management, control of variance.
- B. There are essentially two types of risk exposures:
 - 1. Static risks (uncontrollable, or external events) are those which can only cause a loss due to surprise upset of a plan.
 - 2. Dynamic risks (partially controllable internal events) can produce profit or loss and are best controlled by the finesse of management execution of a plan.
- C. Risk evaluation or comparison grows out of the function of risk management for an enterprise.
 - 1. Risk management has two objectives:
 - a. First priority - conservation of existing enterprise assets despite surprise events.
 - b. Second priority - realization of budgeted expectations despite surprise events.

2. The process of risk management involves systematic and continuous:
 - a. Identification of significant exposure to loss
 - b. Estimation of potential loss frequency and severity
 - c. Identification of alternative methods to avoid loss
 - d. Selection of a risk management method
 - e. Monitoring execution of risk management plan
 3. The risk management process is both a philosophy of inquiry or analysis and a checklist of management concern, which is attempting to answer systematically "WHAT IF...?" questions, to anticipate surprise and to provide for a response or adjustment in advance of the contingency.
- D. Identification of significant exposures to loss can begin by using standard business documents as reminders, such as:
1. Review of balance sheet accounts
 2. Review of profit and loss statement accounts
 3. Review of business organization or function chart
 4. Review of elements of financial feasibility analysis
- E. Significant has to do with potential loss frequency, loss severity, and degree of uncertainty.
1. Very frequent and minor become expense accounts
 2. Less frequent but predictable and major become reserves or budget allowances.
 3. Infrequent, uncertain but very severe become issues of risk management.
 4. A 50/50 probability is the most uncertain outcome.

F. The alternative methods of avoiding loss which everyone subconsciously uses include:

1. Eliminate risk exposure
2. Reduce frequency or severity of loss (diversification or mortgage loan closing process)
3. Combine risks to increase predictability (reserves for expense)
4. Shift risk by contract (subcontracts or escalator clauses)
5. Shift risk by combination (diversification) by contract (insurance)
6. Limit maximum loss (corporate shell or limited partnership)
7. Hedging (sale and leaseback, options, contingent sales)

G. Risk management concepts leads to understanding of the true essence of a mortgage contract and an equity commitment.

1. Given constant dollars and stable interest rates the mortgage agreement laid off the static risks of insurance and controlled the dynamic risks by providing adequate cash throw-off for the borrower, pain through foreclosure and loss of borrower equity dollars, and a bailout based on conservative loan to economic productivity value ratio.
2. Given inflation, devaluation of the dollar, and rising interest rates, the mortgage has become a risk management instrument for the borrower, particularly with common usage of the esculatory clause and recognition of non-productive values in real estate ownership. The mortgage is a classic straddle in two commodity markets.
 - a. In the space-time commodity it is a call on appreciation, if any, and a put to the lender if appreciation or income in future markets becomes inadequate.
 - b. It is a short position in the money market which creates value should interest rates rise or dollars devalue.

- c. The confusion of real estate as a productive economic asset with real estate as a speculative commodity has permitted the distortion of appraisal values. A high loan-to-value ratio mortgage is a purchase of a commodity on margin without giving the lender the right to call for additional collateral.
 3. The cash profit centers in real estate are no longer available to secure the mortgage loan as they take the form of outlays for expertise and material rather than classic net income. Moreover the tax shelter is applied to other income which is not available as collateral for the mortgage loan even though present value of those tax savings contributes to the market value on which the loan is based.
 4. Equity ownership is the degree to which cash flow can be willfully diverted by maintaining control while avoiding risk of variance beyond acceptable levels.
- H. Long-term lenders have suddenly realized that:
1. They are selling puts in the commodity market of long-term real estate space, and in the case of construction loans, space for future delivery.
 2. A mortgage is a long position in an unstable market when everybody is going short.
 3. With rising prices, the penalties of risk are loss of credibility and loss of opportunity income due to the inability to roll invested dollars on time. There is a timing risk to income and to purchasing power in place of significant risk of loss to historical principal.
 4. The ability of the banks to submerge losses in future income and the desires of the pension funds to submerge profits until future benefits must be paid is leading to significant rethinking of the real estate loan process and the dichotomy between credit and equity and

compensation for static versus dynamic risk taking.

5. Emerging concepts of risk management of the dynamic risks of time, interest, and money as compared to solvency and collateral are leading to strategic shifts in real estate capital markets.

I. Solvency risk was controlled with debt cover and default point, occupancy clauses and gap loans. Diversion of collateral was partially offset with letters of credit, escrows, and personal guarantees on construction loans, but what about commodity speculation and interest rate risk?

1. Interest cost plus a loading? - Variable interest in the solvency problem - residential and commercial.
2. Equity participation and the accounting problem of a submerged asset or killing the goose that laid the golden egg - market value accounting problems.
3. Inflation versus obsolescence of location and structure due to energy and demographics - enterprise or systems risks?
4. Portfolio concepts are now in vogue because risk management theory has come of age.

FIFTH MODULE

REAL ESTATE INVESTMENT ANALYSIS

Presented By

Professor James A. Graaskamp, Ph.D., CRE, SREA
University of Wisconsin School of Business

FOURTH HOUR

IV. TAX MATTERS FOR FOREIGN REAL ESTATE INVESTORS

Tax matters for real estate investment in the United States distort all reasonable economic considerations for both domestic and foreign investors. It is important for the real estate investor to understand the real estate tax (which takes 15 - 20% gross income) as well as personal and corporate income taxes, state and federal estate and inheritance taxes, as well as the special registration laws and trade treaties which impact foreign investors.

- A. The approach today will not bog down in detail but rather underscore current pitfalls and trends, recognizing that:
 - 1. Tax planning is always best begun at the very initial stages of the foreign investor's approach to the U.S. market.
 - 2. Tax planning is most effective when done in the context of programs, not transactions.
 - 3. Tax planning is a continuous process and all tax plans should be reviewed periodically.
 - 4. Tax planning is a detailed and complex process which should only be undertaken with the assistance of professional advice.
- B. The real estate tax may cost you more dollars and be less understood than the more publicized federal income taxes because every municipality reflects an individual assessment program and philosophy about imposition of real estate taxes.

1. 70 to 85% of local government spending is financed by real estate taxes and in most states the school board receives 55 to 60% of all real estate taxes.
2. Assessment of investment properties is a way of shifting the real estate tax burden away from residential housing and large numbers of voters so that traditional assessment formulas are changing.
3. Assessments are supposed to be based on fair market value assuming cash sale without creative financing and assuming current economic rents. Market value is then multiplied by local equalization rate.
 - a. Equalization would be the ratio of actual sales to actual assessed value.
 - b. In some states, the law permits different ratios for different classes of property reflecting historical political attitudes about home ownership, big business, outsiders, etc.
4. Many local assessors are changing from market value to nominal price, ignoring impact of financing, sales, promotions, or confusion of revenue from business and real estate, personal property versus real property (hotel, shopping center, etc.)
5. Practice of passing through real estate taxes to the tenants with net leases causes increased vacancies, depresses net rents at time of renegotiating, and prevents property from inflating in value.
 - a. Since tax policies differ in an urban area among political subdivisions, demand and new construction shift across political boundaries causing significant changes in property value.
 - b. Assessment appeals may be too sophisticated for court juries on appeal boards to understand.

- c. Computers have made annual reassessments very feasible based on sales inflated by syndicators and pension funds.
- 6. A real estate purchase/sale or a listing will trigger reappraisal so that many investors buy interests rather than title to avoid creating public record in a change of ownership.
 - a. Partnership interests
 - b. Corporate shares
 - c. Land trusts with beneficial interests
- 7. Investors must research both the assessment policy and local revenue needs for schools, pensions, and safety forces such as police, fire, and public health as well as local welfare obligations.
- 8. Another factor is the increasing use of special tax districts for special tax assessments which fall on benefitted property.
 - a. Special assessments for replacing infrastructure (older cities have not maintained public capital).
 - b. Tax incremental financing (TIF) of urban redevelopment (incentive to understate and then overstate tax assessment).
 - c. Special districts to finance urban activities as well as improvements to attract people downtown, etc.
- 9. Real estate taxes will be worse in older communities without vacant land for growth or new communities that are growing too fast or offer too many services.
- C. In addition to local taxes, there are a variety of state and federal taxes which reflect the duality of regulation and reporting which are behind several special laws relating to foreign investment in an ownership of United States real estate, major federal laws are:

1. Alien Land Act (ALA) permits only U.S. citizens and foreign investors who have formally declared intention to become U.S. citizens, and foreign investors who have become bonafide U.S. residents to own or acquire title to real estate in U.S. territories including Puerto Rico, Virgin Islands, Guam, and other small Pacific Islands (Washington D.C. exempt).
2. Agricultural Foreign Investment Disclosure Act of 1978 (AFIDA) requires any foreign person who acquires or transfers any interest (other than security interest) of 5% or more in land, capable of agricultural use, to report such ownership within 90 days.
 - 7 a. Exemption^{for} less than one (1) acre and \$1,000 produce sales.
 - b. Report requires legal description, transaction price, name, address, and relationship of investor's representative, and name, address, and country of all foreign persons or entities through third tier of ownership.
 - c. No confidentiality since forms are available ten (10) days after filing in D.C. and in county office of Agricultural Stabilization and Conservation Service, and treaty partner which requests information under mutual assistance treaty or fiscal evasion provision of a tax treaty.
 - d. Multi-tiered structuring can legally avoid or minimize reporting.