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Business 760: Real Estate Equity Investment. 1971

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Real Estate Equity Investment - Business 760

Fall Semester 1971-72

Prof. James A. Graaskamp

I. Course Description

1; 2 credits. The problems matching investment strategy to physical property, leverage, income tax, and management alternatives. Analysis of forms of ownership alternatives from sole proprietorship to public real estate securities emphasizes problem of measuring and comparing yield and risk. Prereq: Bus. 520 and cons Instr. Mr. Graaskamp.

II. Course Format

Course will consist of intensive readings to relate real estate decisions to current capital budgeting and investment theory, to investigate the federal tax law, to define the alternative forms of ownership, and to suggest how decision techniques can be used to choose a specific investment opportunity. There will be a 2-hour exam on these readings at the end of the semester, contributing 40% of the grade.

There will be a series of relatively short problem exercises and several lab sessions involving use of analytical technical on computer terminal installations counting 30% of the grade.

There will be a term project for each student involving either a written case analysis or development of a special case financial investment loss contributing 30% of the final grade.

III. Text

Federal Taxes Affecting Real Estate, National Institute of Farm & Land Brokers of NAREB, published by Arthur Andersen & Co.

In addition there will be extensive mimeograph handouts for which the student is responsible unless it is starred (*).

IV. Assignments

Sept. 13-17 INTRODUCTION

- ~~1.~~ "Real Estate Decisions Are Different" by Arthur M. Weimer, Harvard Business Review. 1966
- ~~2.~~ "The Role of Investment Real Estate in Portfolio Management" by James A. Graaskamp, American College of Life Underwriters. 1970
- ~~3.~~ "Real Estate as a Corporate Investment", by Hayes & Harlan, Harvard Business Review. 1967
- ~~4.~~ "Using the After-Tax Discounted Yield to Compare Investment Alternatives, Coldwell Banker & Co. 1970
- ~~5.~~ "Look Who's Rushing Into Real Estate" by Eleanore Carruth,

Sept. 20-24 BASIC ASSUMPTIONS OF CASH FLOW THEORY OF INVESTMENT

- ~~1.~~ The U. of Wis. Business School Mini-Mod kit
- ~~2.~~ "How to Assess Investment Proposals" by Robert H. Baldwin, Harvard Business Review.
- ~~3.~~ NIREB Property Analysis Form
- ~~4.~~ "Property Analysis, Chapter III, by Buckels & Decot
- ~~5.~~ "The Computer World of Real Estate Investment Analysis Chapter X, Max Ganezer

Sept. 27- ALTERNATIVE APPLICATIONS OF CASH FLOW TECHNIQUE
Oct. 1

Blue 1. "An Analysis of the 1968 Housing Act by Robert O'Block,
max Harvard Bureau of Business Research, 1970, Chapter 1-3.

2. "Financial Model Based on the Tustin Meadows Subdivision,"
Omnimetrics.

3. Realmetrics Manual and Input Form

Oct. 4-8 RISK MANAGEMENT CONCEPTS FOR REAL ESTATE ANALYSIS

1. (14) Real Estate: On the Brink", Forbes magazine.
holding costs

2. (15) "Real Estate Cash Flow Simulation Probability Model" by the
Cambridge Group, Inc. *Probability Models*

3. "Reduction of Risk Through Diversification: Portfolio Theory", Chap. 5, pp. 83-95, Readings in Managerial Finance
by Eugene Brigham.

4. "Peril-point Acquisition Prices" by John F. Crowther, Harvard Business Review, Sept.-Oct. 1969.

Oct. 11-15 WHAT IS THE YIELD ON REAL ESTATE EQUITY INVESTMENT?

Text 1. "Determining Rate of Return on Real Estate Investment"
Section 14.11, pp. 338-345, Federal Taxes Affecting Real Estate by McCoy, Olsen, Reed, Sandison, & Wright for the
National Institute of Farm & Land Brokers of NAREB.

2. "A Mathematical Model for Evaluating Real Estate Investments
of a Life Insurance Company" by Quincy S. Abbot.

3. "Imputed Equity Returns on Real Estate Financial With Life
Insurance Company Loans" by Bruce Ricks. Journal of Finance

4. "Differences Between the Major Discounted Cash Flow Capital
Budgeting Techniques", Chap. 3, pp. 45-63, Readings in
Managerial Finance by Eugene Brigham.

5. MINI-MOD PROBLEM DUE

Oct. 18-22 REAL ESTATE INVESTMENT AND THE FEDERAL INCOME TAX

1. Chapters 1, 2, & 3 of Federal Taxes Affecting Real Estate,
3rd Edition by McCoy, Olsen, Reed, Sandison, & Wright,
National Institute of Farm & Land Brokers of NAREB. 1970.

Oct. 25-29 ACQUISITION AND SALE OF REAL ESTATE

1. Chapters 4, 5, 9 and 10 of Federal Taxes Affecting Real Estate.
2. "A CPA's Role in the Purchase of Real Estate" by Philip Wolitzer, The New York Certified Public Accountant April 1966

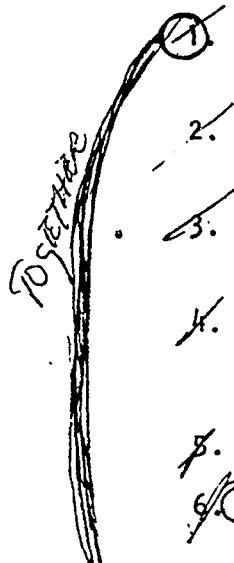
Nov. 1-5 DEFERRING TAXES ON REAL ESTATE INVESTMENT PROCEEDS

1. Chapters 6, 7, 8, and 11 of Federal Taxes Affecting Real Estate.
2. "Land Is a Growth Investment" by Bruce Ricks and Fred Weston, Financial Analyst Journal, July-August 1956.

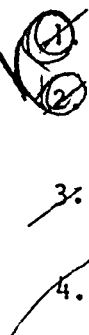
Nov. 8-12 FORM OF OWNERSHIP

1. Chapter 12, 14 (balance not previously assigned) of Federal Taxes Affecting Real Estate.

Nov. 15-19 SOLE PROPRIETORSHIP

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1. "How to Acquire Realty in Individual Form", Real Estate Investment Planning, Institute for Business Planning, Inc.
 2. "Real Estate Investor's Guide to Oil & Gas Drilling Programs" by Thad W. Thomas, Real Estate Review Spring 1971 Vol 1 No.1
 3. "Impact of the Tax Reform Act Upon the Section 236 Limited Dividend Investor Program" by Max Thurston, VP, Gene Glick Co.
 4. "Changes in Depreciation and Recapture - Impact on Real Estate Investments" by Emil M. Sunley, Jr. The Appraisal Journal, October 1970.
 5. "How to Plan an Estate" by Casey, Estate Planning Guide.
 6. * "Real Estate Responsibilities of the Corporate Executor" by Thomas M. Tull, Jr. Trusts & Estates April 1968.

Nov. 22-26 LIMITED PARTNERSHIP INVESTMENTS

- 
1. "How to Use Partnerships", Real Estate Investment Planning, Institute for Business Planning, Inc.
 2. "Family Partnerships", Real Estate Investment Planning, Institute for Business Planning, Inc.
 3. "Limited Partnerships - Their Use in Real Estate Syndications" by Paul Bernstein, Taxes September 1968.
 4. "The Limited Partnership Agreement"- Suggested Clauses.

Nov. 29-
Dec. 3

JOINT VENTURES

1. "Real Estate Equity Investments and The Institutional Lender: Nothing Ventured Nothing Gained" by F. E. Rogge, G. J. Talbot, R. M. Zinman, Fordham Law Review, Vol. 39, May 1971, pp. 579-648.
2. "Joint Venture & Equity Investment Seminar - Developer's View of Joint Ventures" by Robert T. Foley.
3. "National Corporation for Housing Partnerships" mimeo
Participation between Developer & N.C.

Dec. 6-10

REAL ESTATE INVESTMENT TRUST

1. "Real Estate Investment Trusts" NAREIF Handbook of Member Trusts. Mimeo
2. "Renewed Interest" by Dana L. Thomas, Barron's, August 24, 1970.
3. "Analyzing Real Estate Investment Trusts" by Thomas J. Kearns, The National Real Estate Investor. October, 1971.
4. "Fresh Appraisal" by Dana L. Thomas, Barron's, Oct. 28, 1968.
5. "Mortgage Loans Packaged as Securities" by J. William Brennan, Real Estate Review, Spring 1971, Vol. 1 No. 1.

6. ANALYSIS OF SYNDICATE PROPERTIES DUE

Dec. 13-17

PUBLICLY HELD REAL ESTATE CORPORATIONS

1. "The Strategy Behind Wall Street's Move into Real Estate" by Frank Lalli., The Institutional Investor May 1970.
2. "Public Companies as Investor-Builders" by Henry A. Lambert, The National Real Estate Investor July 1970.
3. "Venture Capital and Real Estate" by Marvin R. Shanken, The National Real Estate Investor July 1970.
4. "Wall Street Analysts See Trend to Bigness, Long-Term Growth" The National Real Estate Investor July 1971.
5. "Going Public Again Beckoning Developers", The National Real Estate Investor July 1971.
6. "Castles of Sand" by Abraham Briloff, Barron's Feb. 1969.

Jan 3-7

TERM PAPERS DUE FOR DISCUSSION & HANDED IN

Jan. 10-14

CASE PROBLEM OPTION DUE FOR DISCUSSION & HANDED IN

LATE PAPERS WILL BE PENALIZED

760 Notes on Real Estate Investment Trusts

I. Origins

Financial institutions evolve on old frameworks which may or may not cramp their style. Savings and loans are an interesting anachronism of mutual or coop home organization. The real estate investment trust has a most interesting geneology.

- A. Old Massachusetts law prohibited a corporation from owning real estate other than what is incidental to its business. Thus the Massachusetts Investment Trust was used by 1886 to permit small investors to participate in real estate growth in frontier America.
- B. When corporate income taxes were introduced by constitutional amendment in 1917 the real estate trust was considered exempt but in 1936 a federal court removed the exemption.
- C. When corporate taxes became significant during World War II the REIT's began a long fight to have the same tax position as mutual funds under the investment company acts of 1938 and 1940.
- D. The public scandals which upset broad ownership syndication SIRE and others dramatized the need for a conduit with pooled investors but the IRS would not relent until the REIT's gave up the rights to pass through a accrued losses or the right to be active in the development process.
- E. In 1960 the Real Estate Investment Trust Act was passed in between 1961 and 1967 about \$350,000,000 of REIT securities were sold to the public, more than half in 1961 and 1962. The great majority of these trusts were conversions of some that have survived from earlier days of real estate corporations and took ownership positions.
- F. These trusts have a very slow growth in terms of assets, earnings per share, and share pricing for a variety of reasons:
 - 1. The public did not understand real estate operations with hidden appreciation in book value and understated earnings.
 - 2. Many trusts had older properties within inadequate depreciation. Law required payout of 90% of taxable earnings so that it was difficult to amortize mortgages without tax shelter and thus trust did not enjoy full leverage.
- G. In 1961 a little trust was formed called Continental Mortgage Investor and unlike their cousins, CMI invested in mortgages and construction loans which it financed with low rate long term debt. It showed an earnings growth rate per share of 20% a year through 1971 while its assets grew from \$25,000,000 in 1962 to over \$400,000,000 in 1971.
- H. The tight money of 1966 and 1969 as well as the investment notice which CMI had attracted suddenly caused a revolution in REIT growth so that total REIT assets grew from \$1,000,000,000 at the start of 1969 to almost \$5 billion to the end of 1970. During easy money of 1971 trust assets increased by \$3 billion more.

11. Strategic and tactical operating strategy of the mortgage loan REIT reflects an interesting change in management concepts and the opportunities inherent in arbitraging between sectors of the capital market. The real estate market has to do with asset management while Wall Street is concerned with opportunities in liability management.

A. Asset management is concerned with the land, buildings, and loans involved in development. Construction and development loans were a bank specialty and mystery and thus enjoyed a high spread of five points or more above prime. By 1968 interest rates on C & D loans were higher than equity returns in new properties.

B. Liability management is concerned with the opportunity costs of money and the REIT's discovered they could borrow using long term debt, commercial paper, or bank lines depending on the trend and level of interest rates and maintain or increase their spread between their asset investment rate.

→ C. The equity trust could not leverage its assets nor realize its appreciation in assets without selling the property and if it sold it could not find another property that would do as well. Even if it could sell IRS ratio tests limited the earnings that could come on resale and the frequency with which it could turn over assets. Thus equity trusts sell on a yield basis of cash throwoff and almost always sell at a discount from book value as a closed end trust.

→ D. However, a mortgage investment trust could invest in long term mortgages in '69 and '70 which were yielding 9% and use these mortgages to secure credit lines for additional money to be lent as construction and development loans at 14 or 15% effective yield. Since mostly construction loans would be self liquidating due to a permanent financing commitment these loans would be funded with short term debt. A big C & D loan may be on the books for several years but:

1. On a J shaped interest curve the trust could refinance its commercial paper as the interest fell increasing its spread on existing commitments. Toward the bottom of the trough it would convert to long term debt. If commercial paper went too high it would switch to bank loans. The use of short term paper to move from one interest level to another is called "bridging".
2. As earnings would rise with falling interest rates or increasing leverage, the market became valuing trust shares as growth stock. This made possible equity leveraging or a strategy called contra-dilution. A trust could sell a \$10 share which would earn \$1. If it borrowed another \$10 for 50¢ the yield on the share would go up to \$1.50 and if it borrowed \$20 the yield would go to \$2 and a price of \$20 a share. A second sale of stock at \$20 would increase book value to \$15 and increase the borrowing power of the trust which would further increase earnings.

E. Thus the successful mortgage trust requires two capabilities: the ability to increase the supply of mortgage opportunities on demand and the ability to operate successfully in the commercial paper market.

III. The incentives to organize and manage an REIT are diverse and subtle and a good example of a profit center viewpoint in the approach to real estate.

- A. Ownership of REIT stock could convert interest income through a capital gain but most REIT advisors own very few shares of the trust they manage.
- B. The advisory management fee is a percentage of assets ranging between 1.2 and 1.5%. Since a trust is closed end the only way it can lose assets is through write-downs or reduction in leverage and so the basic fee is a steady source of income. There can be incentive fees such as 10% of all capital gains or 10% of all income in excess of some minimum dividend rate for investors. Operating expenses generally amount to less than .75% so the advisor should have a profitable contract unless some serious management oversight occurs.
- C. To establish a trust a management firm takes the risk that its organization expense will not be covered because the sale of shares is rejected by the market. Once the shares have been sold the organization expenses are charged to the trust. Thus the advisor gains a handsome stable return on a negligible investment once the underwriting hurdle has been passed.
- D. A trust usually complements an advisors existing operation although it may compete to some extent for example:
 - 1. It provides a captive correspondent for the mortgage banker
 - 2. It provides a spread of fixed costs for insurance company staff when the insurance company is not making loans.
 - 3. It permits institutions to make loans for which it lacks capacity or regulatory authority.
 - 4. It provides a captive source of credit such as hotel investor REIT which was started by Hilton and Marriott.
 - 5. It expands the services which can be offered by a bank, etc.
- E. A constraint of this money machine is therefore the problem of selling new shares. Increasing public interest has been met with a flood of issues and a November 1971 one of the best CML announced it was about to announce its first earnings decline. Uninformed investors are skitish investors and trust share prices fell drastically. Since recovered investors nevertheless foresee a slow rate of growth and more marginal opportunities to make loans. Indeed the traditional spread on construction loans has fallen drastically. Thus the ability to issue shares today largely depends on the name and reputation of the sponsor.

IV. What are the risks to the investor in REIT shares and to the trust industry in its present growth pattern?

- A. The theory of contra-dilution will work only as new money is willing to invest in trusts so that supply is short of demand and prices will rise because the PE ratio is rising. New issues have tended to cause supply to at least keep even with demand and since many convertible trust issues have been sold or warrants attached to private lines of credit there is real opportunity for dilution.

4

B. The earnings curve may flatten out for a variety of reasons:

1. A declining spread on specialty loans because of the supply of money available.
2. A declining spread should the trust be caught bridging in a rising interest market as was prudent real estate investment trust.
3. Loss of earnings due to a cumulative reduction of cash flow as a result of a frozen asset in default or a reduction in paper outlets and increasing dependency on bank loans.
4. Failure of a stock issue required to refund debt necessitating discount sale of a loan interest.

C. Disqualification of the trust for tax exemption due to breach of the IRS ratios, redefinition of "passive investors" or lack of 100 independent shareholders, etc.

D. The interrelationship of advisory firms, insurance companies and banks leave open numerous opportunities for conflict of interest.

1. Variety of provisions such as first right of refusal, 50% participation, right of non-affiliated directors to make contracts etc. reduce chance of direct adverse selection of mortgages.
2. The conflict of interest is more subtle in terms of how fast the advisor expands the trust in pursuit of equity leveraging when it will compete more and more with the original sponsors market opportunities.

Real Estate Equity Trusts

I. Origins

A. Massachusetts Investment Trust

1. Real Estate Investment Trust of America 1884

B. Mutual Investment Fund Act

C. Failure of large public syndicate

D. 1960 REIT Act to provide conduit status

II. Structural flaws created by IRS fear of conduits

A. 90% of earnings must be paid out

1. Principal payments on mortgages must be less than depreciation so that older buildings enjoy little leverage
2. No opportunity to build loss reserves
3. Little opportunity to generate internal financing of new projects

B. Passive investment role

1. No profit centers from management or development
2. Real profits go to outside management firm
3. IRS even questions participating loans, stock participation with tenants, or percentage leases if they are not customary for type of property involved
4. Earnings insensitive to inflation for long term investments or unstable from short term leases

C. Investors buy dividends not growth as slow turnover of assets leads to significant understatement of book value. Indeed, depreciation leads to declines in book value.

D. Decline in book value increased where part of cash dividend is depreciation in excess of principal payment.

E. IRS limits sale of assets and annual percentage contribution of capital gain so that submerged assets cannot be converted quickly; indeed, capital gains must also be distributed under 90% rule

F. Growth requires future sales of stock without dilution of current shares - encourages managers to overstate earnings or pay dividends out of capital in order to support new security floatations

G. Management fees provided negative incentive

1. Were based on total assets rather than change in net worth or bottom line earnings
2. Conflicts of interest between sponsors who were developers, banks, insurance companies, mortgage bankers, etc. and trust investors

III. Mortgage trust designed to take advantage of arbitrage between commercial paper and bond markets and mortgage market

A. Original trusts used historical spread between insured home mortgages and bond market

1. Money managers became greedy and saw construction loans had greater spread and more rapid turnover
2. Short term construction loans justified more reliance on short term commercial paper
3. Loans did not require write-down of book value for depreciation and interest only financing meant all earnings were available for distribution

B. Growth for the mortgage trust and advisor management fee came through theory of contra-dilution

1. Book value of existing shares leveraged by selling a reduced number of shares for the same price
2. Lenders required a ratio of debt to equity so that every new dollar from sale of stock created four dollars in assets
3. Many trust sponsors were banks so that new debt was issued under conditions and terms that would not be true in an open market
4. Accounting and appraisal rules for trusts were unrealistic and lax

IV. Accounting and appraisal rules for trusts were unrealistic and lax

A. Appraisal on basis of as developed, marketed and highest quality

B. Absence of loss reserves

C. Accrue of income

D. Restructuring of loans in default by incorporating past due payments into new balances

E. Sale of distressed property to captive buyers with recation of loan terms

F. Regulators then flip-flop to require a write down in assets to represent not only current present value but in addition the present value of future holding costs. Capital surplus was wiped out overnight and operating losses could not be carried back to share holders.

G. Shareholders have opportunity to refile income taxes for previous three years to the degree that dividends were paid from capital rather than earnings, once earnings have been redefined .

V. Current investment strategy for real estate trusts

A. During period of inflation you should control tangible assets with as much leverage as possible. Tremendous discounts on understated book values of equity shares makes them good investments for some purposes.

B. Trust shares are priced both on dividend and in part like a commodity, rising and falling in the market without regard to quality differentials. Therefore, many quality shares are under priced.

C. In mortgage trusts, those with less than 35% of their portfolio in distress have more chance of surviving. In addition to bank loans, many of the bank sponsored trusts have subordinated bond issues which still receive their interest payments but uncertainty as to value recoveries and willingness of banks to fund the trust have depressed bond prices to a fraction of par. In the long run many of these bonds will be sound and bankruptcy courts will be reluctant to cram down on the subordinated debt to favor the bank loans when bank sponsors cause the problem and bank loans are 1% of interest plus all earnings for the next ten years.

- The Real Estate Trust

- I. Real estate subscription - half price, Real Estate Review and Real Estate Law Journal
2. Introduction, Real estate trust
 - A. Stock market values on conservative PE ratio
 - B. The equity trust trap - principle repayment must be covered with depreciation tax shelter since 90% of earnings must be paid out after deduction for interest and depreciation - nothing left for expansion of asset base.
 - C. Equity trust sold for sharp discount on book value so it was difficult to sell more shares without diluting previous shares
 - D. CIL and FMI develop theory of contradilution for the mortgage trust
 1. Borrow wholesale - lend retail
 2. Arbitrage between short-intermediate-mortgage rates
 3. Use short term loans which liquidate to provide liquidity coverage on commercial papers
 4. Use construction loans which tie interest rate to a spread over prime (problem: prime is now political rather than economical so many were caught by introverting money market in '73 - a condition which has occurred in only 16 months in the past 22 years)
 - E. Leverage increases earnings while speculation on money market increases PE ratio so market price a share rises permitting second issue of stock at higher price per share which favors average book value for previous owners - hence the term contradilution.
- II. The essential differences between equity and mortgage trusts are liquidity and growth strategy.
 - A. Equity trusts reduce leverage and play for inflationary long term gains. Low breakeven point but growth held in check by available depreciation cover.
 - B. Mortgage trusts maintain solvency with short term loans offsetting short term commercial papers and play for time lags between wholesale and retail money market to provide capital gain appreciation in market price of shares as well as cash income.
 - C. The mortgage trust theory is now having difficulty raising new money. Guardian Mortgage Investment 600,000 new shares to the public on August 16. New share holders were to receive the same dividend as the old share holders after one week of investment. On a \$50 investment they would receive an estimated \$4.90 dividend during the first year. In addition, there was a 6% sales commission paid the underwriters so that the new money costs the trust 16-17% for the first year.
 - D. Paybacks for short term construction and development loans are slowing down while commercial paper is starting to sell. The shortage of cash may cause some to default on funding commitments for a new loan.

E. Since the mortgage trust is speculating in the money market it is fashionable in some areas to speculate in convertible bonds or warrants. Warrants presently would be interested in some of the bigger trusts. The presence of convertible bonds and warrants makes comparisons among trusts a tricky business.

1. Basic practice dilutes earnings assuming fully converted debentures since funds from debentures are at work in the trust.
2. Shares outstanding is not adjusted for conversion or exercise of warrants as these funds are not actually in use and the key measure is primary cash flows.
3. For mortgage trust primary earnings are annualized by multiplying the latest quarter by 4 without seasonal adjustment and assuming conversion of all convertible debts.
4. For equity trusts primary earnings are regarded as net cash flow (earnings plus depreciation and non-cash charges minus mortgage principle payment) and these are adjusted for any known seasonal factor

F. On this basis 4 standard comparison are provided by the services

1. Last price and price change since the last issue
2. Price earnings ratio and estimated dividend for next 12 months
3. Market price as a % of book value
4. Return on book value to measure management performance with available funds

Real Estate Investment Trusts

- I. Real estate investment trust act of 1960 made it possible to develop investment funds for real estate similar to the tax conduits of closed-end investment funds for the stock market. These funds were subject to a great many technical constraints as they were a compromise by the Internal Revenue Service between unstable limited partnerships called syndicates which enjoyed a single tax status and standard corporations which faced a double tax status but could provide legally for continuity, marketability, limited liability, and centralized management.
 - A. Some of the significant constraints would include:
 1. The trust avoids income or capital gains taxes if it pays out 90% of taxable income.
 2. Beneficiaries are taxed on distributions of ordinary income and capital gains taxes on capital gains.
 3. Ownership must be distributed among a minimum of 100 persons and no 5 persons can control more than 50% of the ownership.
 4. 75% of total assets must be represented by real estate assets including mortgages, cash, and government securities.
 5. No more than 30% of annual income can be from short term trading in stock or real estate.
 6. The trust is prohibited from active ownership or operation of a trade or business which rules out profit sharing, property management, sale of services to tenants, or ownership of more than 10% of stocks, assets, or net profits of a lessee.
- II. While there were a number of large Massachusetts style trusts specializing in real estate prior to the Act of 1960 and a number of local REIT's formed in the early 60's, they did not do very well with the public. Losses could not be carried back and depreciation had to exceed principle payments on the mortgages or the trust would be unable to pay out 90% of taxable income to share holders and make its mortgage payments, too.
 - A. It was difficult to buy properties at a price and on financing terms that would support dividend expectations.
 - B. Market prices for shares generally reflected book value rather than appreciated value of the property so that shares often failed to recognize inflation value.
- III. In 1968 & 1969 however, the real estate trust came into its own, not as equity investors but as mortgage investors - particularly construction loans. These trusts, called MIT's provided 2 billion dollars of new construction money in 1969.
 - A. By the end of 1969 there were 38 MIT's in operation, 30 more than at the beginning of the year, and Wall Street had sold \$750 million of new shares in a period of tight money. In addition 24 new MIT's have been registered for sale in 1970.

- B. In 1969 commercial banks greatly restricted their origination of interim loans; in fact long term permanent lenders were rejecting applications unless the developer had a take-out commitment for construction money!
- C. Many MIT's have a mortgage banking company as a management company which gives the MIT the advantage of established relationships with builders, developers, brokers, title insurance companies, etc. While the mortgage bankers can then offer a complete package of financing services.
- D. MIT's can take risks and make contracts that are not available to the bank and at the same time are in short term loans rather than trading in equities. Short term construction interest rates are higher in profit than long term ownership and there is no squeeze between mortgage principal payments and depreciation cover.

EQUITY INVESTMENT 760
Financial-Office Design Problem, Fall, 1970

Assume there are five basic capital cost factors in an office building project, land, structure, mechanical services, elevators, and parking stalls.

1. Land costs \$5 per square foot and the ratio of gross building area to land area cannot exceed a ratio of more than ten to one. The smallest site available is 15,000 square feet but additional land can be purchased in 10,000 square foot increments. Gross area of a single floor cannot exceed 80% of lot area.
2. All structural items for an office including all tenant improvements, design fee, and indirect charges during construction cost \$20 per gross square foot of floor area. This is the average cost for high rise construction and one can reduce structural cost by \$4.00 per gross square foot if the building is only two stories high. For tax depreciation structural costs have a useful life for 40 years and are 90% depreciable.
3. Mechanical equipment in the structure will cost an additional \$10 per gross square foot excluding elevators. However, the investment in mechanical equipment must be built in modules of what is necessary to serve the gross area of at least three times a single floor gross area. Thus if the floor area is 10,000 square feet mechanical costs would be $3 \times 10,000 \times 10$ even if the building were only two stories high. For tax purposes, mechanical items including outside parking paving have an average useful life of 10 years and are 100% depreciable.
4. Elevators cost \$10,000 each per floor; there must be a minimum of two elevators and an additional elevator for each 10,000 gross square feet in excess of the first 50,000. Tax treatment - same as mechanical.
5. For an outside parking stall 400 square feet of land is required plus \$300 per stall for paving and landscaping, a cost which can be depreciated on the same basis as mechanical equipment. As an alternative an inside parking ramp stall can be built in the basement for \$2500 per unit, no additional land is required and it has the same useful life as the structure. An office building should have at least one parking space per 500 square feet of rentable area and the use of the stall is included in the rent schedule. Only 80% of the gross square footage in an office building can be considered rentable.

The current market rent for office space is \$8.00 per square foot of rentable area and operating expenses run at \$2.00 per square foot of rentable area. Real estate taxes run at \$.20 per square foot of land per year plus \$.80 per square foot of gross building area. Assume real estate taxes will be held constant because of escalator clauses in tenant leases. Make any reasonable assumptions on the rate of increase in rents and expenses that you wish. You may stage your project if you wish because the market cannot absorb more than 40,000 square feet of rentable space in this price range in one year. To work with limitations of mini model, however, you would need to buy all the land and provide all of the parking space required of the completed project in the first year.

Money is available for office construction under two options:

Option 1 - A loan for 75% of total cost for 8 1/2% interest amortized in 20 years. Default ratio not to exceed .85 after first year.

Option 2 - A loan for 90% of total cost for 8 1/2% interest plus 3% of gross as participation for 30 years. Default ratio not to exceed .93 after first year.

Describe an office project which you think would be feasible, prudently financed, and would return a minimum of 15% on an after-tax basis if held for at least 7 years and then sold for its original cost, under existing income tax rules. Rate of return should equal payback period in years plus 10%.

EQUITY INVESTMENT 760
Financial-Office Design Problem, Fall, 1972

Assume there are five basic capital cost factors in an office building project, land, structure, mechanical services, and parking stall.

1. Land costs \$4 per square foot and the ratio of gross building area to land area cannot exceed a ratio of more than ten to one. The smallest site available is 15,000 square feet but additional land can be purchased in 5,000 square foot increments. Gross area of a single floor cannot exceed 80% of lot area.
2. All structural items for an office including all tenant improvements, design fee, and indirect charges during construction cost \$20 per gross square foot of floor area. This is the average cost for high rise construction and one can reduce structural cost by \$4.00 per gross square foot if the building is only two stories high. For tax depreciation structural costs have a useful life for 40 years and are 90% depreciable.
3. Mechanical equipment in the structure will cost an additional \$7 per gross square foot excluding elevators. However, the investment in mechanical equipment can be no less than what is necessary to serve the gross area of at least three times a single floor gross area. Thus if the floor area is 10,000 square feet mechanical costs would be $3 \times 10,000 \times 8$ even if the building were only two stories high. For tax purposes, mechanical items including outside parking paving have an average useful life of 10 years and are 100% depreciable.
4. Elevators cost \$10,000 each per floor; there must be a minimum of two elevators and an additional elevator for each 10,000 gross square feet in excess of the first 50,000. Tax treatment--same as mechanical.
5. For an outside parking stall 400 square feet of land is required plus \$300 per stall for paving and landscaping, a cost which can be depreciated on the same basis as mechanical equipment. As an alternative an inside parking ramp stall can be built in the basement for \$3000 per unit, no additional land is required and it has the same useful life as the structure. An office building should have at least one parking space per 500 square feet of rentable area and the use of the stall is included in the rent schedule. Only 80% of the gross square footage in an office building can be considered rentable.

The current market rent for office space is \$8.00 per square foot of rentable area and operating expenses run at \$2.00 per square foot of rentable area. Real estate taxes run at \$.20 per square foot of land per year plus \$1.00 per square foot of gross building area plus \$50 per indoor parking stall. Assume real estate taxes will be held constant because of escalator clauses in tenant leases. Rents may increase at only 2/3's the rate of expenses and first run should hold rents and expenses constant, with a reasonable increase a permissible assumption only if necessary to meet required yield to equity. You may stage your project if you wish because the market cannot absorb more than 40,000 square feet of rentable space in this price range in one year. To work with limitations of mini model, however, you would need to buy all the land in the first year.

Equity Investment 760

Money is available for office construction under two options:

Option 1 - A loan for 75% of total cost for 7 1/2% interest amortized in 20 years. Default ratio not to exceed .80 after first year.

Option 2 - A loan not to exceed (may be less) 95% of total cost for 9% interest plus 2% of gross as participation for 30 years. Default ratio not to exceed .90 after first year.

Describe an office project which you think would be feasible, prudently financed, and would return a minimum of 20% on an after tax basis if held for at least 7 years and then sold for its original cost, under existing income tax rules. Opportunity cost of equity capital is 10% and equity payback should not exceed 5 years unless an additional 2% yield per year after tax is available for each additional year required for payback of equity.

UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS
Real Estate Investment Teaching Model
September, 1969
Instructions For Use of the Coding Form

GENERAL

1. Cards were designed to require no change in field spacing stops set on the keypunching machine so that large batches of input forms may be done at once and so that a student may keypunch single cards to alter one or more assumptions for a second or third run.
2. One character or number for each blank. Decimal points, "X's", "-s" may not be altered or written over.
3. All dollar amounts must be coded in the rightmost portion of the allowed space - do not include dollar signs. Decimal figures must be corrected to the left relative to pre-printed decimal point.
4. For numerical inputs blank spaces will be read as a zero (0); for alphabetical inputs, blank spaces will provide white space on the output.

CARD 1

1. Last two digits of social security number required to differentiate between those with the same name.
2. Course and section number required for internal school accounting.
3. The equity discount rate is the yield rate at which the investor wishes to determine the present value of the project, discounting all cash returns to the beginning of the first period.
4. The income tax rate is the marginal rate assumed by the investor.
5. "#Cards #3" indicates the number of component description cards (1-6) in column 61. "# cards #4" indicates the number of mortgage cards (1-4) in column 64. Failure to code these properly will terminate processing of your data and you will receive no output.

CARD 2

1. Project description can be an address, firm name, or description of project and run such as "24 Unit Apart. - 90% loan".
2. Extraordinary expenses can be used to deduct for high vacancies in first year, to eliminate excess rents in the first year, to recognize commissions for leasing space, to permit higher operating costs during a "shake down" year, etc.
3. The staging multiplier permits an optional increase in gross rent, expenses, and real estate taxes due to an increase in rentable area provided for in the Component Description and Mortgage Description cards Starting Year column. Indicate year increase is to take effect in column marked "staging year" (1-9) DO NOT STAGE IN TENTH YEAR! Both year and multiplier must be coded but if staging option is not used leave both coding spaced blank.

CARD 3

1. Component description might be land, structure, and furnishings and you would repeat these categories if you wished to build a second stage.
2. % depreciable is 100% minus % of salvage.
3. Depreciation method code:
 - 0 = no depreciation
 - 1 = sum of the digits
 - 2 = straight line depreciation
 - 3 = 150% declining balance
 - 4 = 200% declining balance

4. Starting year is always a 1 for the original investment components and the staging year for any additions or replacement of such short-lived items as furniture.
5. Useful life is number of years over which component will be depreciated (0-99).

CARD 4

1. Mortgage description may include any type of financial instrument. For example, a land lease could be defined as a site worth \$300,000, monthly payment would be 1/12 of annual rent and interest rate would be the annual rent divided by the indicated value of the land.
2. Interest rates are constant annual rates. 8.5% interest = .0850.
3. Starting and Ending years are the first and last years payments are to be made.
4. If mortgage term is longer than ten years or is not refinanced, place a 10 in the column "Ending Year."
5. Indicate full amortization term in years of mortgage in column "Term".
6. You must indicate which new mortgage will replace a specific old mortgage. Otherwise if a loan matures during a projection period, final balance will appear in cash flow statement as "Principal Payment" and if it succeeds available cash, there will be an automatic working capital loan.

CARD 5

1. Expenses do not include real estate taxes. Expenses may include only cash outlay items or may include reserves for replacement and redecorating. In the first case you may wish to include several incremental cost component outlays for remodeling and refurnishing as an alternative to regular maintenance and reserve allocation.
2. All growth rates are constant annual rates. 5% growth rate = .05
- 5% growth rate = -.05
Patterns of growth rates should be consistent; if rents are constant and expenses are expected to increase, project value rate of growth should probably decline.

CARD 6

1. Real estate taxes are for the first year. In Madison the average annual growth in real estate taxes is exceeding 6% and an average increase of 5% a year is the typical minimum rate of tax increase in cities throughout Wisconsin.

CARD 7

1. The vacancy rate is the percent of rent lost due to vacancy and turnover. For example, if an apartment has 10 units it has 120 monthly rental units. If 6 units turn over and are vacant 1 month the vacancy rate is 6/120 or 5%.
2. The working capital loan interest rate is either the 90 day note rate at the bank or the equity discount rate reflecting the yield required on short-term advances of equity money.



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Real Estate Investment Teaching Model

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Card 1	Student's Name	Last 2 Digits of Social Security #	Course & Section #'s	Equity Discount Rate	Income Tax Rate	# Cards #3	# Cards #4
1	GRAASKAMP	77	520-1	.1800	.3000	6	4

Card 2	Project Description	Extraordinary Expenses	Staging Multiplier	Staging Year
1	24 UNIT APT - CASE 1	7625	X	X

Card 3	Component Description	Original Cost	Percent Depreciable	Depreciation Method	Starting Year	Useful Life
1	LAND	40000	X 0.0000	X 00	X	1 X 00
2	BUILDING	177500	X 1.0000	X 03	X	1 X 35
3	PARKING	7500	X 0.5000	X 03	X	1 X 10
4	FURNISHINGS	13200	X 1.0000	X 01	X	1 X 07
5	TRANSACTION COST	1800	X 1.0000	X 03	X	1 X 35
6	7 TH YR REFINISHING	10000	X 1.0000	X 01	X	8 X 07

Card 4	Mortgage Description	Principal Amount	Monthly Payment	Interest Rate	Bonus Interest Rate	Start Term	End Term	Refinanced By Mortgage
1	FIRST ASSUMED MORTG.	180000	X	X 0.0775	X 01	X 05	X 20	X 03
2	SELLERS 2ND MORTG.	15000	X	X 0.0850	X 01	X 05	X 10	X 03
3	REFINANCED FIRST	190000	X	X 0.0800	X 0.0400	X 06	X 10	X 20
4	REFINISH CHATTEL	10000	X	150 X 0.0900	X 08	X 10	X	X

Page 2 of 2

Card 5

Card 5																																																												
Gross Rent																												Expenses												Rental Growth Rate										Expense Growth Rate										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
																				x			4	6	0	8	0	x					8	4	0	0	x		.	0	2	0	0	x		.	0	2	0	0	x		x		x		x		x	

RE Taxes

Card 6

										R E Taxes										R E Tax Growth Rate										Project Value Rate of Growth																																																											
																				9000 X										.0500 X										.0100 X										X										X										X										X									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65																									

Vacancy	Working Capital
Rate	Loan
	Interest Rate

[illegible]

- 0 = no depreciation
- 1 = sum of the digits
- 2 = straight line depreciation
- 3 = 150% declining balance
- 4 = 200% declining balance

UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS
Real Estate Investment Teaching Model
September, 1969
Basic Definitions of Model Outputs

- 1) Current period return on Net Worth before taxes =

$$\frac{\text{Cash Throw-off} + \text{Change in Net Worth}}{\text{Net Worth at End of Previous Year}}$$

- 2) Current period return on net worth after taxes =

$$\frac{\begin{aligned} &\text{Spendable cash} + \text{tax savings on other income} + \\ &(\text{change in net worth} - \text{change in cap. gains tax}) \end{aligned}}{\text{Net worth at the end of previous year less capital gains tax}}$$

- 3) Cash Return on original cash equity before taxes =

$$\frac{\text{Cash throw-off}}{\text{Total initial investment less Initial Mortgage Debt}}$$

- 4) Cash Return on original equity cash after taxes =

$$\frac{\text{Spendable Cash after taxes} + \text{Tax savings on other income}}{\text{Total initial investment cost less initial mtge. debt}}$$

- 5) Net Income - market value ratio

$$\frac{\text{Net Income}}{\text{Market Value for the same period}}$$

- 6) Expense Ratio =

$$\frac{\text{Operating Expenses Including R.E. Taxes}}{\text{Gross Income}}$$

- 7) Default ratio =

$$\frac{\begin{aligned} &\text{Operating Exp.} + \text{R. E. Taxes} + \text{Prin. \& Interest on Mtge.} + \text{Working} \\ &\hspace{15em} \text{Cap. Loan Princ. Repayment} \end{aligned}}{\text{Gross Income}}$$

8) Lender Bonus Interest Rate =

$$\frac{\% \text{ of effective gross (not to exceed cash throw-off for period)}}{\text{balance due on loan at beginning of period}}$$

9) Resale Market Value at End of year

$$\frac{\text{Total initial investment cost} + \text{Additional staged investment}}{\text{Index for Year}}$$

10) Net worth of property =

$$\text{Market value less balance of loans less working capital loans}$$

11) Capital Gains =

$$\text{Market value projection} - (\text{Total capital investment} - \text{cumulative depreciation taken})$$

12) Market value less (total investment less cumulative depreciation + disallowed excess depreciation)

13) Capital Gains Tax =

$$(\frac{1}{2} \text{ Capital Gain} \times \text{Income Tax Rate}) + (\text{disallowed excess depreciation} \times \text{income tax rate})$$

14) Present value of project before taxes =

$$\text{Original mortgage balance} + \text{PV of received stream of cash throw-off} + \text{PV of net worth if sold at end of year indicated by column number.}$$

15) Present value of project after taxes =

$$\text{Original mortgage balance} + \text{present value of received stream of spendable cash after taxes} + \text{PV of received tax savings on other income} + \text{PV of (net worth less capital gains tax) if sold at end of year indicated by column number.}$$

Disallowed excess depreciation = cumulative accelerated depreciation less straight line depreciation for the same period minus 12% of accelerated depreciation in excess of straight line for each year after year 11.