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Index

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THE ROLE OF INVESTMENT REAL ESTATE IN PORTFOLIO MANAGEMENT: "INVESTMENT VALUATION AND FORECASTING METHODS"*

by
James A. Graaskamp**

INVESTMENT VALUATION AND FORECASTING METHODS

A. Investment Decisions—Buy or Sell at a Price

Most decisions for real estate investment ultimately require estimation of the probable market price at which property could be bought or sold and the investment yield which might reasonably be expected as a result of the decision to buy or sell. Unlike an industrial bond (for which cash income, capital recapture, and the time calendar are determined by contract; for which current prices are determined from national market quotations; and for which purchase or sale is virtually instantaneous via telephone and teletype) real estate investment offers no fixed points for investment income, recapture, timing, or transaction speed. Still all of these factors are necessary for precise prospective computation of yield. Price and yield are necessary assumptions for real estate investment decisions relative to:[1]

a. Acquisition or disposition of ownership or changes in control
b. Extension of credit on pledge of real estate
c. Compensation for loss in the value of real estate
d. Levy of a tax on the value or the productivity of real estate
e. Development or redevelopment of real estate
f. Modification of management policies in the operation of a real estate enterprise.

The function of this primer can be only to sketch the important pricing methods and yield formulas and to introduce some key financial ratios and concepts indicating the quality-risk level of the investment, particularly risk relative to estimated yield.

B. Real Estate Brokerage Pricing Concepts

The majority of real estate investment decisions are influenced by the techniques of the real estate broker, techniques with roots in the basic sales tradition of over-simplification to avoid confusion or multiplication of alternatives for the buyer-decision maker. Often the decision rules of the real estate broker as to "fair market price" use conventional wisdom, "rule of thumb," and static concepts of net income and cash accounting.

1. *The Gross Rent Multiplier* (GRM) is a popular rule of thumb which suggests that market price is a function of gross rents. For example, small unfurnished apartment buildings may sell in a certain community for 6.5 times gross rent. If gross rents were $10,000, the building would sell for about $65,000. For many types of properties this approach to forecasting sale price is very accurate,[2] and practitioners adjust the multiplier downward for furnished apartments which have higher maintenance costs or upwards for new prestige buildings, etc. However, the gross rent multiplier can be misleading as it may not allow for differences in operating cost ratios among different buildings, vacancy rates and

* Excerpt from "The Role of Investment Real Estate in Portfolio Management," available in its entirety from The American College.

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[1] MODERN REAL ESTATE VALUATION, Richard U. Ratcliff, Democrat Press, Madison, Wisconsin, 1967.

[2] "Capitalized Income Is Not Market Value," Richard U. Ratcliff, THE APPRAISAL JOURNAL, Vol. XXXVI, No. 1. American Institute of Real Estate Appraisers, January 1968. pp. 33-41.

turnover in different neighborhoods, or changes and trends in interest costs and expense factors. In some strong ethnic neighborhoods prices remain stable because everyone continues to apply the multiplier long after net income has disappeared, due to rising operating costs or mortgage costs. The multiplier gives no hint of yield on equity capital, but it is a workable model because it uses simple data for sales price and gross rents, which can be found in the marketplace, and because over the years it has worked as a forecasting tool.

2. *The Net Income Multiplier* (NIM), which is similar to the price-earnings ratio of the stock market analyst, is generally inverted in real estate and stated as a capitalization rate. For example, the realtor will speak of an investment building which "caps out" at .085 when he means that the net income multiplier or price-earnings ratio is 12. The net income multiplier is an improvement on its cousin, the gross rent multiplier, because it explicitly recognizes operating costs may vary. Since net income is not adjusted for debt service, income tax gains or payments, or down payments, NIM still is not a very precise tool for comparison of alternatives or evaluation from the investor's viewpoint on a specific property.

3. *Sale price multipliers* based on analysis of market transactions over time are invented by the realtor as standards. For example, apartment land may sell for $1,500 times the number of permissible units under zoning for the site or a retail lot may sell for $1,000 per front foot.

It can be seen that brokerage multipliers stress price comparison rather than yield comparison and assume that other buyers knew what they were doing when they purchased within the range of acceptable market multipliers. Given the pervading influence of the broker on local markets, multipliers have a tendency toward self-fulfilling prophecy in regard to price but leave the riddle of yield unanswered.

C. Professional Appraisal Evaluation Methods

The professional real estate appraiser has prescribed an analytical approach to value which requires each valuation problem to be investigated from three different but related viewpoints of value, *the market comparison approach, the income approach,* and *the cost to replace approach* to value in order of their appraisal preference and reliability.[3]

The appraiser is expected to resolve the different conclusions resulting from each approach through "synthesis and correlation" and provide his client with a single value estimate of market value on a given date, assuming buyers and sellers all have relatively equal alternative courses of action and are reasonably informed on the real estate market and their own space needs. In a written appraisal report, the appraiser will attempt to specify the financial moods of the country and the real estate investor, the trends in population, employment, and income which affect the metropolitan region in which the property is located, the neighborhood and use attributes of the physical property which affect its productivity and marketability, as well as specific application of the three approaches to value.

1. *The market approach to value* is a comparison of the property under appraisal with similar properties which, preferably, have been recently sold or are currently available for purchase. The appraiser attempts to define the marketplace according to the buying pattern of the group of buyers most likely to consider the subject property. For example, there is a national market for large office buildings, and sales may be used from several localities, while the marketplace for a certain type of home buyer may be a few square blocks, thus excluding sales from other parts of town as appropriate comparables. Since, generally, each property is unique, the appraiser makes adjustments to the sales price for significant physical differences and conditions as well as for terms, timing, and location differentials in each transaction.[4]

2. *The income approach to value* follows a basic truism that stabilized projected annual income divided by a financial capitalization rate will equal the present capital value of future returns. Rents are established by review of a comparable rental market rather than by reference to actual rents, which may exceed the competitive market level due to existing leases or may lag the market due to poor management or unexpired leases. The appraiser is concerned with economic productivity of the asset rather than just the present value of the various claims on cash income. Thus he constructs an expense statement based on accrual accounting and reserves for repair and replacement of assets with a shorter useful life than the property as a whole, before arriving at "stabilized" net income of a property, his measure of productivity. This net income figure is then divided by a capitalization rate which is devised according to

[3]For a thorough treatment of the appraisal of income property, see *Income Property Valuation*, William N. Kinnard, Jr., Heath Lexington Books, Lexington, Mass. 1971.

[4]For more detailed explanation see Chapters 9 and 10 of *The Valuation of Real Estate*, Alfred A. Ring. Prentice-Hall Inc. 1970.

a number of different theories, depending on the appraiser and the nature of the property. The most legitimate of these alternatives is the Ellwood method of determining a mortgage equity rate,[5] which is an investment band approach to a weighted average return on invested capital (purchase price). It allocates net income to meet financing requirements, amortized resale loss, and a required cash dividend on investor equity on a pretax basis with recognition of the influence on yield of deferred capital appreciation. This technique recognizes the impact of financial leverage on value and yield as well as the variations on yield possible, depending on resale value. It does not recognize aftertax considerations, while it presumes a continuous income function for the forecast period, instant investment, and instant sale. It is a net present value technique created as a device to accept or reject mortgage loan opportunities and is less than accurate when evaluating development situations, erratic periods of interspersed incomes and outlays, or the influence of purchase price alternatives on yield. Still, it is a sophisticated appraisal technique and a reasonable indicator of appraisal professional competency.

3. *The cost approach to value* first requires estimation of current replacement costs of the improvements, assuming comparable functional utility rather than photographic reproduction. The method used is generally a shortcut estimating system, although occasionally full scale construction estimates are used. This cost estimate is then adjusted by deducting dollar amounts judged by the appraiser to represent curable and incurable physical deterioration to the improvements, functional obsolescence of the improvements, and economic obsolescence relative to outside conditions affecting the use of the space in question. To this reduced balance the appraiser adds the value of the site determined generally by means of market comparison assuming the land cleared, vacant, and ready for building. This approach has the deceptive appearance of objectivity but in fact is drastically affected by appraisal judgments and techniques relative to depreciation adjustments. Highly favored for property tax, income tax, and fire insurance purposes, the cost approach is of little use to the investor for price and yield analysis.

There is a minority among professional appraisers who feel that the full standard appraisal approach is too stylized and too concerned with remaining "objective" and generalized to be of use to the investor without interpretive use or sophistry in the internal execution of the report.[6] These appraisers would rely on more exhaustive analysis of market transactions relevant to a property under appraisal or, lacking appropriate market data, simulation of the investment decision techniques of the most probable buyer or buyer group. Value conclusions would be stated as a range within which sales price could be negotiated and conclusions would be tested for reasonableness, in light of yield and risk requirements of probable investor profiles. These appraisers often operate more as counselors who not only value a property but aid and recommend alternative courses of action for their clients. For these services, the traditional appraisal report is a valuable prerequisite element of research and analysis.

D. The Great Debate—What are Income, Yield, and Risk?

The rational investment returns from real estate investment consist of aftertax spendable cash from operations, capital gains on sale, refinancing surplus, and tax savings on other income. Unfortunately, the different segments of the real estate industry, who advise real estate investors, tend to prefer significantly different and incompatible decision rules. The real estate brokers prefer a cash accounting viewpoint after leverage and taxes but without benefit of projections of returns beyond the first year. The appraiser anticipates projections by depending upon accrual accounting and average revenue and expenses while shunning consideration of the income tax. The investment counselor is more concerned with explicit year-by-year cash-flow projections on an aftertax basis with careful application of compound interest techniques to reflect the financial characteristics of the investor. Thus, there are a variety of inconclusive measures of yield in common use in real estate, and the issue is further confused by the absence of standardized accounting or reporting forms, such as those that characterize public security markets.

1. *The broker's rate of return*[7] is simply to divide first year net income before interest and depreciation by the purchase price. This ratio may be modified to relate only to the cash down payment of the investor by adjusting the numerator to represent spendable

[5] "Mortgage Equity Capitalization: Ellwood Method," James E. Gibbons, *The Appraisal Journal*, Vol. XXXIV, No. 2, American Institute of Real Estate Appraisers, April 1966, pp. 196-202.

[6] "Recent Developments in Appraisal theory," Paul F. Wendt, *The Appraisal Journal*, Vol XXXVII, No. 4, American Institute of Real Estate Appraisers, October 1969, pp. 485-500.

[7] For an expanded discussion see Chapter 2 of *Real Estate Investment Analysis and Taxation*, Paul F. Wendt and Alan R. Cerf, McGraw-Hill Book Co., 1969.

cash after debt service or spendable cash plus an adjustment for loan balance reductions.

2. *The Inwood method of discounting* is generally applied to a series of reliable income receipt expectations to determine the present value of the income stream after allowing for complete amortization of the investment and a specified rate of compound returns.

3. *Discounted actual aftertax annual cash receipts* is based on five- and ten-year forecasts of revenues, expenses, and other financial events. This method does recognize the time value of money but depends on annual budget estimates for operations which may be erroneous and on a specific assumption as to the minimum acceptable rate of return for discounting. The Inwood discount formula is used, which assumes immediate reinvestment of cash received at the same rate of return as assumed for the project in question.

4. *The internal rate of return*[8] is a very appropriate technique for capital budget decisions in real estate but finds little application in real estate outside corporate institutional offices due to the difficulty of the mathematics involved. Net present value methods such as items 2 and 3 above require the user to assume an arbitrary discount rate and determine the maximum purchase price or investment which is justified. The internal rate of return approach assumes the analyst knows both the stream of benefits expected and the stream of outlays required to make the investment, and then he computes the discount rate which makes the present value of the outlays equal to the present value of the receipts. This technique is appropriate for investment trade off decisions to determine which is the better of two alternatives, such as proper staging of a project or a choice between central air-conditioning and window air-conditioning or between a high rise building on a small parcel and a low rise building on a larger parcel. However, the internal rate is the same as the Inwood rate in that it assumes immediate reinvestment of cash receipts at the same rate of return at which one is discounting.

The problem of yield is further confused by the need for which the yield calculation will affect the decision. The investor viewpoint may be prospective, looking ahead only to fund commitments for the next year, in which he has several choices; or retrospective, looking back after selling to determine the average annual compound rate of return for the entire span of his investment. Correct application of the Inwood method or the internal rate of return is retrospective as all proceeds must be in or assumed as to the year of receipt before the calculation can be made.

A prospective rate of return is concerned with only the aftertax cash to be received in the following year divided by the net cash equity, assuming liquidation of the investment at the end of the previous year. Net cash equity is assumed sale proceeds adjusted for brokerage costs, debt repayment and penalties, income taxes on recapture, and capital gains taxes and costs of business dissolution. The individual investor has neither the data for long-term forecasting, nor the efficiency in reinvestment which characterizes the institutional investor and the assumptions of discounted cash-flow or internal rate of return yield analyses. Moreover, the individual investor does not have a sufficient number of investment exposures that he can give a probability estimate of possible losses or fund a reserve for investment decline. Therefore, instinctively, the individual investor favors the prospective short-term view of cash returns and meets risk by first applying these cash returns to recovery of risk capital and then treating these returns per annum relative to the liquidating value proceeds. Projections of cash flows too far in the future will either be wide of the mark, if established by third-party observers, or will be in the nature of self-fulfilling prophecies, if used to establish future management objectives. Thus, the prospective yield (aftertax cash plus aftertax change in net worth for the coming year divided by liquidating net worth cash assumed for end of previous year) remains the most pragmatic method for comparing an income property to available investment alternatives. It focuses on current alternatives and short-term forecasts, avoiding long-term assumptions and theoretical issues of discounting, more appropriate to the institutional investor.

A forecast of outlays and income for purposes of computing yield appear to imply conditions of certainty about the numbers when, of course, these prospects and pro forma expectations are uncertain. Risk is concerned with the potential variance between these expectations as stated in pro forma forecasts and actual realization as represented by year end accounting reports. The wise investor searches for those financial assumptions in which a variance will cause the greatest disappointments relative to yield or the worst damage in terms of additional cash requirements. Studies have shown that yield on real estate investment is most sensitive to the following items in descending order or importance:

[8]For a more thorough and readable explanation of "modified internal rate of return," every real estate analyst should be familiar with the article "How to Assess Investment Proposals", Robert H. Baldwin, Harvard Press, May-June 1959, pp. 98-104.

1. Cost to construct or remodel or acquire
2. Loan ratio to cash costs
3. Interest rate and rate of repayment of principal
4. Real estate taxes
5. Operating expenses
6. Cost of land

Risk management would therefore emphasize the need to shift the risk of construction cost variation by contract, to reduce the indirect costs of construction by pre-leasing of space, while being less concerned with the final nickel paid for the cost of land. Nevertheless, negotiation for land is what many people like more than the fussy detail work of proper construction planning and bidding. Risk control in real estate, therefore, implies detailed attention to each factor which could cause financial results to vary from initial financial assumptions. This type of patient discipline distinguishes professional investors from the boys at the office who decide to pool their lunch money for a flyer in real estate. Risk in real estate can be controlled by careful contract drafting, patience, and a policy of always providing escape clauses at some acceptable point of loss. Yield is an arithmetical relationship of outlays and receipts and has nothing to do with risk.

5. *The modified internal rate of return* is perhaps the best of the capital budget and discount methods for real estate *equity* valuation. Equity returns in real estate generally exceed 15 percent, perhaps should exceed 25 percent, and on properly leveraged successful developments may approach 100 percent compounded annually! (Rates of return are deceptive until the dollars of investment and dollars of profit are stated: one can starve to death on a 100 percent profit on a five dollar investment.) It is unlikely, however, that the investor has a continuous flow of such opportunities. Typically the investor will pocket his profits at the savings and loan at 6 percent, until he has another down payment accumulated and a good opportunity to employ it; or perhaps a corporation will reemploy the money in its retailing business at an annual return of 15 percent. In short, the reinvestment assumption of Inwood or the internal rate of return is not very realistic and can seriously distort comparisons between two investments which have a different pattern of outlays and receipts or where the investor has limited resources and a rising marginal cost of additional capital. Therefore, it is recommended that discount rates be applied in three stages:

a. First, the outlays scheduled over time during the process of acquisition and development should be discounted back to the beginning of the time line at the opportunity cost of capital, such as 6 percent for the individual above or 15 percent for the retailer.
b. Secondly, the annual receipts scheduled over time should each be compounded forward at the appropriate reinvestment rate to the end of the forecast period.
c. The third step would be to compute the internal rate of return which makes the present value of the outlays equal to the present value of the sum of compounded returns.