

# CAPITALIZATION RATE IN A DYNAMIC ENVIRONMENT

*In the dynamic world within which we live, the capitalization rate is no longer a valid real estate calculation by itself, and it does not add much to investment analysis even when used in conjunction with other techniques.*

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**T**he thesis of this paper is that, in the case of property sales, the capitalization rate is the notational result of an often prolonged and arduous negotiating process, a calculation which is derived after-the-fact. The capitalization rate in and of itself is meaningless unless it is placed in context. What cash flows are being capitalized? Are buyer and seller utilizing similar assumptions? With what rates of return is the capitalization rate being compared? What can the buyer do with the property?

As will be shown, deficiencies with the capitalization rate become pronounced in the dynamic economic environment in which we currently live and the environment we are likely to experience in the future.

The volatility of the property sale market makes it more difficult for the real estate practitioner to rely on the capitalization rate as a basis for valuation of a property for other purposes. The practitioner must know a great deal more than is generally known about the transaction to utilize the derived capitalization rate for any other purpose. For example, how useful is it to know that the Stanford Court Hotel in San Francisco or the Bel Air Hotel in Los Angeles traded on a 1% nominal capitalization rate?

This paper will review the dynamic economic environment in which we live, discuss the difficulty of determining which cash flows to capitalize, describe alternative valuation techniques and modern portfolio theory and the buildup of a componentized rate of return, and review the reasons why aberrations occur in the capitalization rate.

## The Dynamic Economic Environment

The capitalization rate was an extremely useful tool when the world was stable. We enjoyed a low interest rate and a low inflation rate environment for 20 years following World War II. During that time, there was little capital market volatility as we know it today. A rental stream and an expense stream could be capitalized for 10, 20, or even 30 years without burdening the calculation with too many assumptions. We now live in an age of volatility, with a greatly enhanced computational capability, which makes the simplistic techniques of the past less relevant. Let us examine some of the factors that have led to this new age.

*Globalization.* We talk today of globalized capital markets, but globalization is a highly imprecise term meaning entirely different things to different practitioners. At a minimum, this concept encompasses such factors as 24-hour trading in money and capital markets and assets that are linked through currency and interest rate swaps. A real estate transaction may be financed on a 30-day revolving

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floating rate basis which is later swapped for a financing on a medium-term fixed rate basis in a different currency.

A variety of new global financing techniques has evolved, including options, swaps, caps, futures or options on futures. These new techniques have enhanced the ability of real estate investors to access capital market activity, but they have also increased the volatility of the marketplace. Now, a real estate developer in Omaha must be concerned about efforts of the Bundesbank or the Japanese Ministry of Finance to control their countries' domestic monetary base. In fact, as capital market linkages progress, it will become more and more difficult for any central bank to establish unilateral domestic monetary policy.

With all these capital market linkages, what real rate of return should the practitioner be attempting to protect? How does one build up a capitalization rate for a long-term project that will protect against swings among a half-dozen major economies that are out of synchronicity.

*Securitization.* The securitization of real estate assets has come about as large capital market players, initially U.S. insurance companies and pension funds, sought to develop the means of integrating traditional real estate investment analysis into modern portfolio theory to make overall portfolio asset allocation decisions. This integration of real estate into modern portfolio theory means that real estate can no longer be considered a "special" asset with characteristics that justify its insulation from worldwide economic events.

*Institutionalization.* The thousands of individual trades which served the purpose of dampening volatility in the past have been converted through the institutionalization of savings by pension funds, insurance companies, money market funds, mutual funds and the like into single point decisions made by powerful forces. This concentration of decision-making has made capital markets much more volatile and risky and has increased the real rate of return required for long-term investments.

*Deregulation.* Deregulation of financial institutions, begun in the United States, has spread to other major capital markets. In the years ahead, there will be increasing pressure for deregulation, especially in Japan. The removal of regulations covering funding costs for financial institutions led to the bidding up of the cost of funds, which in turn led to the booking of more risky assets. As a result, the risk profile of many financial institutions has increased considerably, and the overall credit quality of these institutions has decreased. In certain capital market segments, such as U.S. thrift institutions and commercial banks, this has led to a sharp curtailment of the amount of capital available to real estate.

*Sophistication.* Only 25 years ago, calculations were made laboriously on electromagnetic calculators, and the results were noted on yellow accountancy workpapers. But now, with the proliferation of personal computers and computer networks, a sole

real estate practitioner has unparalleled computational ability. This greatly enhanced capability allows the practitioner to manipulate data at will, building in different inflation assumptions for each variable for each year, if desired. Because such capacity is available, use of a single capitalization factor for a project makes a practitioner appear to be lazy as well as unsophisticated.

Hand in hand with computational ability goes database information retrieval. Not many years ago, the real estate practitioner's database was a stack of yellowing *Wall Street Journals*. Within a few years, we will all be linked by fiber optics, and we will each have in our offices a single device for computation, communication, data retrieval, video conferencing and the like. Most of the information revolution is still ahead of us, and it will have a significant effect on the industry. Real estate liquidity at present suffers from a lack of specific, local information. The information revolution should make real estate more liquid and even more closely connected to the worldwide capital market system.

In summary, real estate exists in an economic environment that is linked to an increasingly sophisticated, integrated and worldwide capital market system. Real estate therefore cannot insulate itself by claiming the uniqueness of specific locality. The paradox is simply this: to be a participant in the global financial system, real estate must become fungible.

### Cash Flow Analysis

Before moving along to a discussion of real estate valuation techniques, let us for a moment refresh ourselves on cash flow analysis and in particular on how cash flow analysis relates to the current dynamic economic environment.

The volatility in capital markets combined with the volatility in real estate markets create the need for the practitioner to be much more analytical in determining which cash flows to value. The availability of increasingly powerful analytical equipment makes sophisticated analysis much more practical than it was in the past.

In the case of an *office building*, for example, differences occur among cities and among investors regarding the appropriate means of measuring the leasable area upon which rents are calculated. This item alone can produce a material distinction between what a buyer and what a seller thinks is the actual capitalization rate. What is a normal frictional vacancy rate under prevailing real estate conditions—3%, 5% or 10%? When initial rents are discounted through rental concessions or excessive tenant installation allowances, what number is utilized as base rent for calculating new rent on tenant rollovers? Should a real estate recession be programmed into a 10- or 15-year cash flow model? Should rents be inflated every year? Should rents in some years remain flat or be reduced? How do we account for deferred maintenance? How about fire and safety code violations or asbestos removal? How

do we deal with more exacting standards in the future?

In an *apartment complex*, how do we account for the replacement of carpeting and refrigerators over a 10-year cycle? What is normal maintenance?

In a *shopping mall*, what do we allow for the cost of cutting up a large, 20,000 square foot space into smaller units? How do we adjust for the expense of decking the parking area in order to create more freestanding tenant space? What premium do we exact from the one potential buyer for whom our regional mall provides tenant control within a market segment? How do we account for the cost of removing toxics from the subsoil under a parking lot built over a sanitary landfill?

In the case of a *hotel*, how much do we expend as a replacement reserve? Can we actually reduce expenditures on food and beverage service through operating efficiencies? Should we view telephone operations as a service or as a profit center? Should we rehabilitate three floors into an all-suite, concierge operation? What value enhancement does the property receive from a particular acquirer's reservation system and convention booking expertise?

The complexities of actually operating a property and integrating it into a prospective purchaser's overall business is far more complex than capitalizing a net rental stream. It is here that value is created and capitalization rate discrepancies occur.

### Alternative Valuation Techniques

Let us examine briefly the range of alternative techniques of valuation to place the capitalization rate in proper perspective.

*Internal Rate of Return* gained great acceptance in the United States during the period of high inflation that ended in the early 1980s. This methodology allows one to pro forma renter at much higher rates in the future, inflate expenses and capture in present dollars the resale of property in a future year. Computer-driven software has been developed over the last 10 years specifically for internal rate of return analysis by particular property types. As will be discussed, the internal rate of return calculation for a project is perhaps the best linkage into modern portfolio theory, making real estate a fungible capital market investment under asset allocation modeling.

Particular problems with this methodology on a stand-alone basis include: (1) the built-in assumption that the investor's opportunity rate for reinvestment remains constant and can be realized over the term of the investment; (2) the fact that cash flows may swing widely from negative to positive over the investment period and yet appear "smooth" in the final analysis; and (3) the exactness and predictability of the analysis which makes the inherent property management and leasing functions appear disarmingly mechanistic.

*Net Present Value* or discounted cash flow analysis is based upon the same theory of compounding

of the rate of investment return as the internal rate of return calculation, but it computes a dollar amount rather than an overall investment yield. It is useful when annual returns vary widely, and it is particularly useful for analyzing investment in a particular project. It is not useful, however, in comparing returns to other projects or other forms of investment.

*Market Sales* have always been useful as indicators of value, so long as they have met the basic appraisal definition of a free market transaction. The more homogeneous the product type and the broader the list of transactions, the more useful this technique becomes. A problem in today's market is that bellwether transactions resulting from a prolonged worldwide auction of a trophy property are too often claimed to be proxies for market value in general.

*Replacement Cost* is always a good test of value. Other than superb locational dominance or zoning constraints, one wonders why anyone would ever pay more than the replacement cost for a property. Replacement cost also may provide a secondary indication of value in a temporarily overbuilt market when obtainable rents cannot support asking prices.

*Residual Sale Value* is really a subset of the internal rate of return calculation. It is worth highlighting, however, because in many cases it drives pricing. Investors justify purchases at seemingly high prices by assuming that they can "turn property around" (i.e., they can rehabilitate the property or reposition it in the market) and support a windfall sales price at a future date. Another phenomenon in recent years has been "capitalization rate arbitrage," which simply involves selling a property at a lower capitalization rate than the one used to purchase the property. One example of capitalization rate arbitrage is Marvin Davis' resale of the Beverly Hills Hotel in 18 months to the Sultan of Brunei. Another example of capitalization rate arbitrage is the differential in pricing of regional shopping malls over the past 15 years. In the mid-1970s, contract base rental income traded on an 8% basis, with overage rental income trading on a 12% basis. In the late 1980s, all income was undifferentiated and traded on a 5% basis.

In raw, undiscounted funds, the residual sale in some cases can amount to 50% of the funds returned to the investor. When discounted, depending on the timing of the assumed sale, the residual sale can provide 100 to 200 basis points toward the internal rate of return.

*Gross Income Multiplier* is derided by the computer whiz kids as archaic and overly simplistic; yet real estate veterans still find it a useful calibration for analyzing apartments quickly when they are out of the office, and it has become a useful rule of thumb for evaluating community shopping centers as well.

*Years to Investment Payback* suffers the same criticism as the gross income multiplier; yet it is very useful to individuals who have a full career's experience with thinking in these terms.

*Dynamic Rate of Return Analysis* is ultra-sophisticated and extremely useful in allowing analysis to focus on possible weaknesses with laser-intensity by “unbundling” various components of return. This analysis is a further refinement of internal rate of return analysis, and it is computer-driven. *Unburdened cash flow analysis* allows one to analyze the separate components of a mixed use project, the individual leases of an office building or the impact of a variety of financing or refinancing plans and to model redevelopment of an aspect of a project and the like. *Sensitivity analysis* allows one to measure the impact of an internal rate of return in a hotel project, for example, on changes in room rate, occupancy, food and beverage income, furniture fixtures and equipment allowances and the like. *Probability-Risk Adjusted Rate of Return Analysis* allows one to measure by statistical sampling. For example, one may compute for a hotel the internal rate of return assuming a 25% probability of a 65% occupancy, a 50% probability of a 70% occupancy as well as a 25% probability of a 75% occupancy.

*Cash on Cash Yield* returns are really a subset of the capitalization rate approach. In order to overcome the disutility of the capitalization rate approach in a dynamic environment, many investors now calculate the cash on cash return in each individual year of their investment horizon. Others focus on cash on cash yields in the initial, third, fifth and tenth year. Still others calculate an undiscounted arithmetic 10-year average cash on cash yield on a project. Such methods correct many of the deficiencies of the simplistic capitalization rate approach and can be very useful analytic tools. They do not, however, create a real estate rate of return which is useful in modern portfolio theory.

### Modern Portfolio Theory

Computer-driven analytics have had great impact on the entire capital market investment process. The *capital asset pricing model* and modern portfolio theory have attempted to quantify investment risk and to develop coefficients of performance for various classes of assets, including real estate. As the investment process has become more sophisticated, computer-driven baskets of securities have been developed, including a model based on the entire Standard and Poor's index of 500 common stocks; a futures index based on the Standard and Poor's index; a “South Africa Free” common stock index; an index based upon the Shearson-Lehman bond index; indices of Japanese, German, Hong Kong or Thai common stocks; program trading and the like.

Historical rates of return and exposure to risk and volatility have been calculated for various classes of assets, including real estate. The proxy investment yield for real estate which most closely parallels the Standard and Poor's stock index or the Shearson-Lehman bond index in the capital asset pricing model is the internal rate of return calculation. Thus, real estate is being driven more and more to conform with this particular methodology

in order to gain access to large multi-asset class capital pools, such as pension funds and insurance companies. An obvious problem in making real estate conform to this model is that there is no method for measuring real estate prices on a daily basis. Appraisals are not valid because they are determined after-the-fact, and price volatility is eliminated.

The entire movement toward the *securitization* of real estate is driven by the same motivation. Managers of large capital pools want to think of real estate debt and equity investments as just another fungible asset class. They therefore attempt to secure Moody's or Standard and Poors' bond type ratings for real estate, either through high credit tenants or the purchase of someone else's credit (credit enhancement) for a fee, so real estate debt will appear to resemble a high grade bond in the capital markets.

The continuing worldwide *institutionalization of savings* creates even larger capital pools with single point decision-making. In order for real estate to access these capital pools, it must assume the trappings of modern portfolio theory and appear to be fungible, giving up the uniqueness of location, design, marketing and specific performance.

The paradox is obvious. Appraisers with a lifetime of experience and judgment are replaced by 28-year-olds with a computer terminal. Huge errors in judgment are committed. Billions of dollars are lost. Real estate is removed from reality. But the world goes on.

One ray of hope is that the *computer revolution* has just begun. The computer today is where the electric dynamo was 100 years ago when it provided light to manufacturing processes driven by steam-driven crank shafts and overhead pulley systems. Once the computer is fully integrated into our work and our lives, say in about the year 2015, the individual should become liberated once again from these huge, multinational organizations, and a plurality of localized decisions may once again drive international financial transactions.

### Componentized Rate of Return

It may be useful to withdraw for a few moments from market-driven transactions and contemplate an ideal rate of return, whether capitalized, internal, discounted or otherwise.

*Real Rate of Return* is the basic component of any rate of return calculation. It is meant to measure that riskless rate of return, free of inflation, which a long-term investor ought to expect. As a result of considerable regression analysis over a period of many years, the real rate of return expected in the United States at present is around 3%.

*Inflation Assumption* is the next component of a return calculation. What is the normalized inflation expectation over the term of the investment (say 10 years) which, if earned, will protect the real rate of return? The expectation in the United States today is about 5%, which creates an inflation-protected nominal rate of return of 8%.

*Risk and Volatility* have in recent years added a premium to this inflation-adjusted real rate of return. The added risk premium did not exist prior to the period of high inflation experienced in the late 1970s. Adding on a risk premium of 100 to 200 basis points provides us with a risk- and inflation-protected rate of return of around 9% to 10%. This is within the trading range of U.S. government long-term bonds and is just about what the return has been on U.S. common stocks over a long-term period.

*Real Estate Premiums* can be built up over and beyond this standard rate of return to account for additional illiquidity, additional risk (for example, a hotel), the burden of management, cyclically, complexity, overleverage, overbuilding and the like.

It would not be difficult to establish that the nominal rate of return for real estate should be in the area of 13% to 15% in the United States at present. Why the market returns are 300 to 400 basis points lower than this in generally overbuilt markets shall remain the subject for a different inquiry!

### **Reasons For Aberrations In The Capitalization Rate**

As one can infer from the remarks to this point, there are many reasons for aberrations in the capitalization rate. It is very difficult to encapsulate in a single simplistic notation the multitude of analytics and emotions produced by a drawn-out negotiation. A few of the reasons for capitalization rate aberration are summarized here.

*Collectibles* is one way to phrase the interest in so-called trophy real estate. One man's Van Gogh is another man's Beverly Hills Hotel. Yield is immaterial. Pride of ownership and possession is paramount.

*Capitalization Rate Arbitrage* has been referenced previously. Below certain levels, it may become the adult version of "musical chairs." Where does the elephant sit? Wherever it wishes to.

*Strategic Buyers* are seeking an asset that empowers and enhances other assets they already own. This was true of Nestle in the purchase of the Stanford Court Hotel in San Francisco to anchor its U.S. system. It was true of the Corporate Property Investors' purchase of the Monumental Shopping Center portfolio to improve its dominance in markets like Atlanta and Boston. It was true of Trammell Crow Company's purchase of Jack Benaroya's 40% of the industrial property in Seattle.

*Long-Term Investment Horizons* cause certain investor types, notably Japanese insurance companies, to accept lower initial returns.

*Different Perceptions* in how an asset may be marketed or even physically configured cause value discrepancies, particularly between *investment type buyers* and *operating type buyers*.

### **Conclusion**

In the sophisticated and dynamic world in which we live, the simple capitalization rate approach to value is no longer valid in isolation and does not add much to investment analysis even when used in conjunction with other techniques.

As for me, I use a matrix of valuation techniques, shifting my focus from property to property. Internal rate of return is a benchmark, but I am always suspicious of what it glosses over. I favor various forms of dynamic rate of return analysis, as well as cash on cash yields in each year and replacement value.

I never fail to see the property in its urban or suburban context. I walk the neighborhood and the roof, check the boiler room and talk with the tenants. I get a feel for the property, the market, the appeal, the politics and the management. I suppose you could label my approach the *Gestalt Theory of Investment Valuation*. It is what it is.

We each concoct a valuation stew of our own making. Whatever yours is, *Bon Appetit!*