

IN SEARCH OF THE RATE

Because of their large volume of risk-rated transactions, capital markets produce the most reliable data for selecting appropriate discount rates.

by James E. Gibbons, CRE

In valuing commercial real property interests the income approach has been, and continues to be, the most persuasive and widely used method of measurement. It is an application of the so-called principle of anticipation that describes value as the present worth of the future benefits of ownership.¹ Implicit in its development are two principal steps: (1) forecasting future benefits and (2) discounting future benefits to express their present worth. The second step raises the query: discounting at what rate?

Long standing and generally accepted real estate appraisal methodologies recommend the analysis of recent sales of comparable properties to extract indicated capitalization and discount rates. In certain market atmospheres this technique is adequate; however, in most markets there seldom are enough comparables to promote feelings of assurance in the rates selected, and in chaotic, volatile periods the process is generally unsatisfactory. For example, in the early 1990s restrictive credit policies employed by banks and insurance companies made capital unavailable, dried up normal market transactions and left only distressed sales by financial institutions that had acquired properties through foreclosures and bankruptcies and that were under regulatory pressure to recapture some capital. The Resolution Trust Corporation (RTC) poured billions of dollars of properties and mortgages into the marketplace under orders that the properties should be moved promptly. To accomplish the mission RTC, after some initial delay, provided seller financing on liberal terms. These conditions were far removed from those envisioned for the generally accepted definition of market value, and they rendered real estate transactions unsuitable for market discount rate extraction.

So with limited mortgage credit available and distress in the sales markets, where can the real estate professional look for reliable evidence to support plausible discount rate selections?

Primary Considerations

Before plunging into a discussion of discount rate selection, two fundamental factors should be reviewed; the first is the nature of a so-called real property investment. It is not real estate, land and bricks and mortar; it is simply money in the form of mortgage financing or equity venture capital or any combination of the two. Money is invested in the expectation of receiving monetary returns at a rate that is deemed appropriate in light of existing capital market conditions and the perceived risk of the venture. The rate of return clearly is a major consideration for investors. Money is fungible and can be put to work in any venture in any industry. What's more money is available only in a finite amount at

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any given time. Enterprises therefore must compete to obtain a share of money by offering competitively attractive returns. Real estate is not exempt from this need to compete; it can claim no amount of money as a matter of right.

The second factor that needs to be reviewed is the subject of the investment. Again, this is not real estate; it is an interest or interests in real property, and the intangible rights to use, sell, lease, sublet, mortgage, give away, etc. These rights are legally documented and often publicly recorded. In valuations parties talk about the value of a property, but property is not a unit; it is a package of real property rights, each having an owner with his individual goals and strategies for achieving those goals. The rights are prioritized in their claims on a venture's earnings. Usually claims on a venture's earnings follow the chronology of creation of individual rights; however, subordination contracts may alter the order of precedence of claims. These are important considerations in rating the risk of various interests, which can be, and routinely are, separately valued and traded at earnings rates consistent with competition for capital and perceived risks. Consider the simple case of a single family dwelling whose owner holds an equity investment position encumbered by a mortgage created by a financial institution which may hold the mortgage, or as is more common, sell it in the secondary mortgage market. More complex ventures may be made up of equity, mortgage, junior mortgages, land leases, operating leases, etc. Therefore, in any investment analysis or valuation, it is critically important to identify specifically the subject real property interests, forecast the future benefits of their ownership, risk rate the position and select the appropriate earnings rate for discounting. Trying to squeeze multi-party, multi-property interest considerations into one value number can create confusion.

Capitalization Development

Appraisal literature opens the discussion of capitalization by offering the formula: $I/R = V$.² The literature states that the value of a real property interest is a function of its earnings capacity; therefore, valuation is accomplished by dividing income by the earnings rate that is necessary to attract capital to the venture. Thus begins the never-ending search for the *right rate*.

In the 1930s and 1940s the U.S. economy was depressed, interest rates were low, inflation was not a threat and rate volatility was negligible. However, the risk element in real estate investments was recognized, and it was agreed that the appropriate rate should provide some spread above the yield available from absolutely safe investments, such as U.S. Treasury bonds. Methods and procedures therefore were developed to build up a capitalization rate. These methods used as a baseline the return from a safe investment, and they made incremental additions to this baseline value to account for the features of a real estate investment that did not measure up to the standards of safe investments, such as illiquidity, risk ratings, burden of investment

management and others. For example, the buildup might be as follows:

| | |
|-----------------------------|--------|
| Safe investment rate | + 2.5% |
| Penalty for additional risk | + 1.0% |
| Penalty for illiquidity | + 1.0% |
| Penalty for management | + 0.5% |
| Total rate | 6.0% |

Although this approach was and is serviceable, it fostered uneasiness about the quantity and quality of market support for the adjustments in the buildup.

Thurston Ross, CRE, introduced another rate selection method called a band of investment. This method used a weighted average of interest costs for a property's mortgage and equity capital components. For example:

| | |
|-----------------------|------|
| 75% mortgage @ 8.0% | 6.0% |
| 25% equity @ 10.0% | 2.5% |
| Weighted average rate | 8.5% |

This method represented the first effort to assess the influence of mortgage financing on property valuation.

Residual Approaches

Appraisal educators very properly pointed out that investors require both a return on and a return of invested capital and stated that a provision for capital recapture should be added to the interest earnings rate. They also reasoned that since land endures, only the building investment, a wasting asset, required recapture on a straight line or a sinking fund basis. Land and building residual techniques were developed to value separately the property's physical components.³ Implicit in the development of the building residual was provision for a decline in income and value, which harmonized with the realities in the existing marketplace. The search for the *right rate* continued.

The Coming Of Ellwood

With the conclusion of World War II, new forces came into play; change was pervasive, as shown by rapidly increasing real estate values. In response to how appraisers should deal with these new conditions, a debate ensued. It revolved around whether the present change in real estate should be regarded as a temporary surge that eventually would subside and return markets to their former levels or was it a permanent trend that required new appraisal thinking. Of course, the problem's final arbiter was the investing public who kept buying at higher prices.

While appraisal education has always recognized the principle of anticipation and its future perspective, it has applied somewhat retrospective methodologies. Because analysis of comparable sales emphasizes previous transactions, it must be adjusted to reflect the market's perception of the future as of the appraisal date.

U.S. Supreme Court Justice Oliver Wendell Holmes said of the law that its life is not the

sylogism but responses to felt necessities of the times.⁴ So, too, has real estate appraisal responded to the necessities of the times. In reaction to the atmosphere of change in the 1950s L. W. Ellwood, introduced his monumental work: the Ellwood Tables for Real Estate Appraising and Financing,⁵ which acquainted the appraisal profession with the world of yield capitalization. Ellwood's procedures recognized the principles of anticipation and change by providing for future changes in incomes and values. They also followed the bundle of rights theory by recognizing the separateness of the mortgage and equity entities. Ellwood's approach to valuation was to price a property so it would produce a competitively attractive yield for the equity investment in light of specific mortgage terms and anticipated changes in incomes and values over the holding period. If mortgage terms for an investment were typically available in the market, the pricing would be a market value; however, the procedure could be used with any selected terms. This position was incorporated into the market value definition in the American Institute of Real Estate Appraisers' *The Appraisal of Real Estate*, 9th edition. It is also interesting to note that the principal ingredients of the overall rate for capitalization, mortgage and equity rates were products of trading in capital and money markets.

To have all the previously mentioned market conditions and factors in a single overall capitalization rate, Ellwood constructed the following formula:

$$R = y - mc + \frac{\text{dep}}{\text{app}} \frac{1}{S_n}$$

The term "y" represents the specified equity yield a property will provide based on the investment's risk rating and the competition for funds in capital markets. Such yield is a composite of investment cash flow earnings augmented by property value increase (appreciation) over the holding period or diminished by value loss (depreciation).

The combined $y - mc$ is a weighted average of equity yield and mortgage terms and includes the effects of mortgage amortization (debt reduction). The capitalization rate R then is a band of investment (weighted average) of equity yield and mortgage terms modified by anticipated property value changes over the holding period.

In 1970 Charles B. Akerson made a valuable contribution to the understanding of Ellwood's procedures by replacing the original horizontal algebraic expression with a vertical band of investment mode.⁶

Once an overall capitalization rate is selected, the next step is to use it in the value formulation $I/R = V$. In the early years of Ellwood, much difficulty arose over the definition of the term "I". "I" was considered to be a property's net income earnings; however, debate focused on the period to which earnings should be attributed. Ellwood stated plainly that "I" was the average stabilized income for the future investment term. He demonstrated that there was a *de minimis* difference between the

value that used this income and the value that was discounted year by year, excluding violent distortions. Nevertheless, some practitioners continued to insist that "I" represented the first year's income. During the 1960s this writer worked closely with Ellwood in the teaching of his materials and became aware that the problem was bothersome. Ellwood finally decided to settle the controversy by introducing into the capitalization rate the "J" factor so one could use the first year's income and reflect a sinking fund pattern of growth in income at a rate (appreciation) selected by the appraiser.

An attractive facet of the Ellwood process is its usefulness in analyzing capitalization rates. For example, in judging the acceptability of any given rate, it is easy to compute the amount of property value and income change that can occur over an investment's holding term and yet have the equity position realize a selected yield. After this sensitivity testing was put in graphic form, Ellwood yield curves became a standard feature of most appraisals. Ellwood was the mightiest contributor to the search for the *right rate*.

Discounted Cash Flow Comes To The Fore

Ellwood gave appraisers and investors a practical vehicle for complete investment analysis. However, as the pace of inflation and market activity continued to accelerate, investors demanded a means of reviewing an investment's probable performance, on a year by year basis over its term, on a spreadsheet. A procedure, commonly called discounted cash flow (DCF), for many years had been used extensively by financial institutions in the analysis of investments in most fields of business. In the 1980s and early 1990s real estate appraisers siezed upon DCF as a vehicle to reflect and account for the volatility in many economic elements, particularly inflation.

What has DCF to do with the quest for the *right rate*? When all cash flows, such as purchase price paid, annual cash returns and proceeds of sale, are assumed to be known, one can easily compute the investment's expected internal rate of return (IRR) and make comparisons with yields from other similarly risk-rated investment opportunities in fields such as stocks and bonds. DCF therefore facilitates judgments about the feasibility and competitive attractiveness of an investment. It also is used by appraisers as a direct valuation approach, in which the annual cash returns and proceeds of ultimate sale are forecast and then discounted to present value at what the valuer deems to be the *right rate* in light of perceived risks.

The availability of computerization has made the DCF process expeditious and economical and facilitated the use of sensitivity analysis and the exploration of many "what ifs." Software packages have enabled appraisers to use lease-by-lease analysis to forecast financial performance.

Despite its considerable attractive features, computerized DCF poses the danger of a more mechanical than thoughtful analysis. Another thorny issue in the process is the estimate of the final cash

flow, the reversionary profit from the ultimate sale of a property. This sale price often is estimated by capitalizing, say, the 11th year cash return by a rate slightly higher than the appropriate current rate. Because reversionary profit often is a large segment of IRR and the events being forecast are remote, some fear and trembling may accompany this process. Nevertheless, the essence of property valuation is forecasting futures.

The Discount Rate

Clearly in DCF valuation the selected discount rate is a key item. Where does it come from? Appraisers have shown some preference for real estate sources, such as comparable sales and surveys of investor attitudes; however, the volatility and uncertainty in the post-savings and loan debacle period have eroded confidence in these sources. At least the belief that rents and values must rise to match inflation is no longer strong. In the recent past appraisers have accorded a small amount of attention to financial market activities, but gradually data from that source is developing the degree of attention it merits.

Where We Are Now

The search for the *right rate* led the appraisal profession through an evolutionary process, developing and refining the income approach to valuation but reflecting the continued need to develop stronger, more believable rate selection procedures.^{7,8} It always has been clear that a real estate investment represents money invested in the expectation of receiving competitively attractive monetary returns in light of perceived risks. In the United States and most of the rest of the world, millions of investments involving billions of dollars and using instruments such as stocks, bonds, etc., are made each day in well-established, effective capital and money markets. These investments are bought and sold at prices that investors expect will provide yields consistent with those found in the markets for similarly risk-rated situations. Thus, any single transaction reveals the investor's forecast of future benefits, and the market's activities disclose market expectations about futures.

It is said that capital markets are the best predictors of future economic conditions; therefore, a reading of their events should benefit investors and valuers in forecasting future benefits and in selecting discount rates. Strangely, the real estate appraisal profession's acceptance and use of capital market data as the basis of rate selection has been slow. Perhaps the distress and distortions of the real estate market in the early 1990s may prompt a harder look at the wealth of data and guidance in the financial arena. A comprehensive look at this data will require the serious efforts of academics and practitioners in the pursuit of the necessary studies. The answers cannot be obtained from a casual glance at capital market data in a newspaper, but they can be attained through disciplined studies of the available data. After all, the capital markets reveal market-acceptable monetary yields on professionally risk-rated situations.

The Fed

Let us briefly examine a few aspects of financial market information to demonstrate its usefulness to real estate investors and valuers. First, a word or two (a book might be more appropriate) about the Federal Reserve System. This independent organization, created by Congress, promulgates and implements U.S. monetary policy. The Fed exerts substantial control over the availability and price of funds. Through its Open Market Committee activities, buying and selling U.S. Government securities, the Fed can quickly expand or contract money supply, thereby raising or dropping general interest levels in relation to the demand for funds. The Fed has direct control of short-term interest rates, such as the discount rate and the Fed funds rate, and less of an impact on rates of longer maturities which are powerfully influenced by the degree to which inflation may erode the value of securities.

The interest rates most directly controlled by the Fed are watched carefully by the financial community, which keys off them in establishing market levels for yields on other instruments of varying risks and maturities. It is interesting to note that the Fed's monetary moves appear to follow a cycle. When the economy is expanding vigorously, the Fed will be quick to detect growing inflation and counter it by restricting credit and raising interest rates. In times of recession the Fed will expand monetary policy to pump up the economy and bring about declines in interest rates. Witness the drastic rate declines of 1992 engineered by the Fed in its attempt to promote an economic recovery. This cyclical aspect of monetary policy is important and useful for making forecasts of future economic and monetary conditions. In the analysis of real property investment performance, both present and future rates are key elements.

Risk

Risk has always been a prime investment concern. In real property valuations from the earliest days the capitalization rate was set at some increment above the return from safe investments, such as U.S. Government bonds. The magnitude of the increment was estimated to cover the greater degree of risk associated with investing in real property. The assessment of risk is now handled in debt capital markets by professional rating organizations, such as Standard and Poor's, Moody's, Duff and Phelps and others that grade and label various levels of risk using symbols, such as Aaa, Aa, A, Baa, etc.

The rating agencies publish descriptions of the elements and qualities represented by the various rating grades. With this information and the results of market trading, one can judge the yield level necessary to attract capital to a venture whose perceived risks closely fit a rating description. For example, the Baa rating is described by Moodys as: "medium grade obligations, i.e., they are neither highly protected nor poorly secured. Interest payments and principal security appear adequate for the present, but certain protective elements are lacking or are characteristically unreliable over any

great length of time. Such bonds lack outstanding investment characteristics and, in fact, have speculative traits as well". In the case of a real property investment analysis, the objective is to judge whether the observed elements of risk match this description. Factors to be considered include market trends, lease details, credit standings of tenants, etc. When the risks of a real estate investment fit with, say, a Baa rating description, current trading levels for the Baa rating can be used to determine investment yield for the investment.

This procedure is not simple, but with research and study it can be applied to any real estate investment. Because it is based on daily published information from a large market that trades in professionally risk-rated investments, the procedure yields data that is broad-based and market-driven and, thus, is more persuasive than conclusions drawn from a small group of real property transactions.

Corporate bond quotes are one example of the information concerning capital market trading and yields in stocks and bonds that is available in the press (Figures 1 and 2). It is hardly adequate for the rate selection procedure described, but it can be readily supplemented with additional financial information and data from investment banking and brokerage organizations that actively market the securities involved.

FIGURE 1

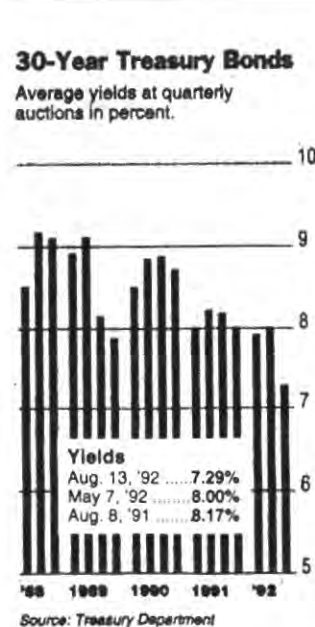
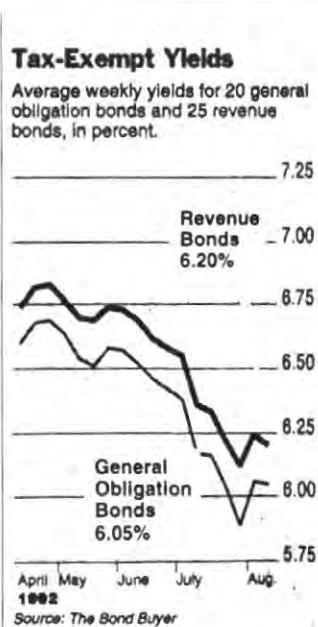


FIGURE 2



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Securitization

In recent years securitization of real property interests has ballooned into a billion dollar business. It has been highly successful in residential mortgages where it has the support of efficient secondary

markets, but it has not enjoyed great success in commercial real property because of the lack of standardization of product and underwriting. However, efforts in this area have led risk-rating organizations to develop methodologies for rating commercial real property on a portfolio or property-specific basis. More interesting developments surely will be forthcoming, because many regard securitization as the probable future source of the real estate industry's financing.

Adjustments

Once a risk-rated investment yield has been selected, two further adjustments must be made to apply the yield to real property investments. Under the most favorable realty market conditions the liquidity of a real estate investment cannot match that of moderately active securities. What increment should be added to the risk-rated investment yield to provide a suitable penalty for the liquidity of real property? This problem is thorny but reasonably manageable. Investments scheduled to be repaid in the near future, short maturities, in general are considered to be more liquid than those that come due later. The Treasury yield curve (Figure 1) illustrates this thinking by showing the variation in yields for Treasury securities of different maturities. The curve is normal when investments with long maturities offer higher yields than those with short maturities. Figure 3 is normal and quite steep. It shows a three-month yield of 3.25% and a 30-year yield of 7.4%. The 4.15% difference between three-year and ten-year maturities is significant for our purposes and amounts to 200 basis points of 2%.

The Treasury yield curve relates to Treasury issues only and is subject to gyrations during periods when the Fed is using monetary policy to slow or accelerate the growth of the economy. At times the curve may become inverted, as short-term yields exceed yields from investments with longer maturities. In such cases a curve for the A, Baa or high-yield category may be constructed and conclusions drawn from it.

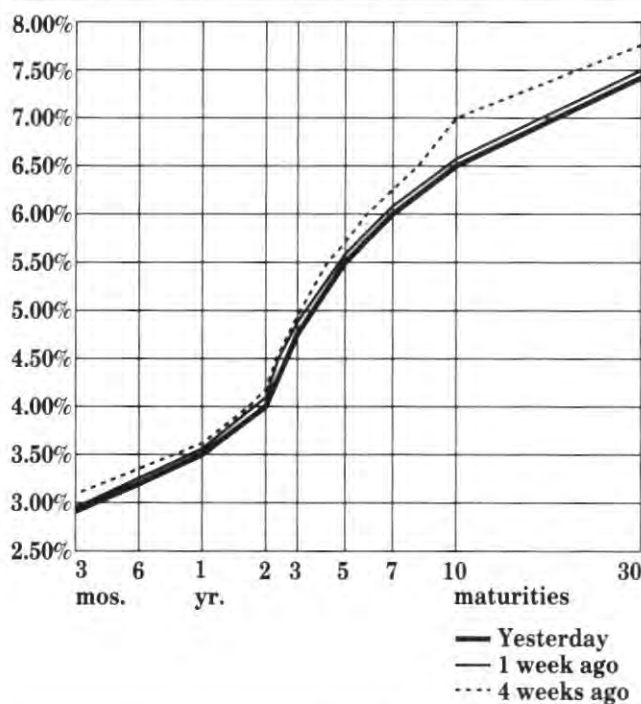
Other factors affecting liquidity require consideration, among them are average volume of trading in an issue and the identity and track record of the market maker or makers.

A further adjustment to the risk-rated investment yield is needed to account for the burden of investment management which is incurred with real property but not with securities. It is well recognized that property investments, at their simplest, are not passive. To get a handle on an appropriate market-established adjustment, one must research the fees charged by asset management organizations for handling a portfolio or an individual investment. At this point the process may be summarized as follows:

| | |
|-------------------------|-------|
| Baa risk rated yield | 9.5% |
| Penalty for illiquidity | 2.0% |
| Penalty for management | 1.0% |
| Discount rate | 12.5% |

FIGURE 3

Treasury Yield Curve



In the distressed markets of early 1992 when much commercial real property fell into the high yield category, then:

| | |
|---------------------------|---------------|
| High-yield corporate rate | 10.95% |
| Penalty for illiquidity | 2.0% |
| Penalty for management | 1.0% |
| Discount Rate | 13.95% or 14% |

Sad to say, in some distressed markets the proper risk rating may be the junk bond category which produces higher yields.

Conclusion

The appropriate discount or capitalization rate for real property valuation seems to be revealed best in the trading activities of capital markets where the volume and availability of data are optimum. Professional risk rating has enhanced the reliability of selected rates. The selection of a risk rate for a real estate investment is not a simple process, but one that requires adjustments to account for the differences between securities and real property. While requiring judgment, determination of these differences should be largely market driven. It is hoped the field will attract much more attention and study.

NOTES

1. *The Appraisal of Real Estate*, 10th Ed., p. 33.
2. *Ibid*, p. 422.
3. *Ibid*, p. 4.
4. Holmes, Oliver Wendell Jr.: *The Common Law*, 1881.
5. AIREA: *Ellwood Tables for Real Estate Appraising and Financing* (Chicago, IL: AIREA, 1977).
6. Akerson, Charles B.: *Capitalization Theory and Techniques: Study Guide* (Chicago, IL: AIREA, 1984).
7. Gibbons, James E.: "Finance Seen," *The Counselor* (Chicago, IL: ASREC, 1990-1992).
8. Gibbons, James E.: "Financial Views," *The Appraisal Journal* (Chicago, IL: AIREA, 1989-1992).