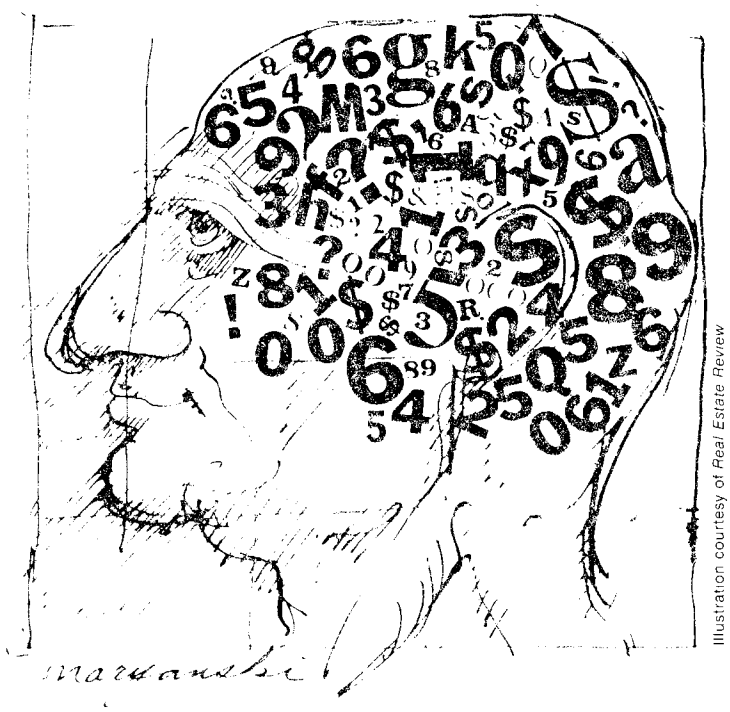

Illustration courtesy of *Real Estate Review*

The Appraisal of Lodging Facilities

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EACH TIME A HOTEL is bought and sold, financed and refinanced, condemned, assessed, or bequeathed, an appraisal is required to provide an estimate of market value.

Market value has been defined as:

> The highest price in terms of money which a property will bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus.[1]

Implicit in this definition is the consummation of a sale at a specified date and the passing of title from seller to buyer under conditions whereby:

- Buyer and seller are typically motivated;
- Both parties are well-informed or well-advised and each is acting in what he considers his own best interest;
- A reasonable amount of time is allowed for exposure in the open market;
- Payment is made in cash or its equivalent;
- Financing, if any, is on terms generally available in the community at the specified date and typical for the property type in its locale; and
- The price represents a normal consideration for the property sold unaffected by special financing amounts and/or terms, services, fees, costs, or credits incurred in the transaction.

Other definitions of market value include:

> The highest price in terms of money which a property will bring if exposed for sale in the open market, allowing a reasonable time to find a purchaser who buys with knowledge of all the uses to which it is adapted and for which it is capable of being used. [and]
>
> The price at which a willing seller would sell and a willing buyer would buy, neither being under abnormal pressure.[2]

For a lodging facility, market value may also reflect the value of the going concern, including business value,

[1]Byrl N. Boyce, *Real Estate Appraisal Terminology* (Cambridge, MA: Ballinger Publishing Co., 1975), p. 137.

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[2]American Institute of Real Estate Appraisers, *Appraisal Terminology and Handbook* (Chicago: Lakeside Press, 1967), p. 102.

furniture, fixtures, and equipment, and sometimes inventories and working capital.

The process of estimating market value is known as an appraisal. The opinion of value derived from the appraisal is usually transmitted in written form and is called an appraisal report.

In appraising real estate for market value, the appraiser may use three approaches: (1) the *cost approach*, also known as the summation approach; (2) the *market-data approach*, sometimes referred to as the direct-sales approach; and (3) the *income approach*, also called the income-capitalization approach.

THE COST APPROACH

The cost approach is based on the assumption that an informed purchaser would pay no more for a property than the cost of producing a substitute property with the same utility as the subject. Using the cost approach, the appraiser estimates market value by computing the current cost of reproducing the subject's improvements and then subtracting any depreciation.

The cost of reproducing a property is generally estimated on a square-foot basis, using a construction-cost manual published by a recognized cost-reporting service. The value of the land is added to the determined reproduction cost.

Depreciation is defined as a loss in value caused by one or more of the following factors: (1) physical deterioration — the physical wearing-out of the property; (2) functional obsolescence — the lack of desirability in layout, style, and design, as compared to a new property serving the same function; and (3) economic obsolescence — a drop in value caused by factors outside the property itself.

Appraisal literature recommends use of the cost approach for new properties (which are not yet affected by the various forms of depreciation), as well as for unique or specialized improvements (e.g., churches, libraries) lacking a comparable market and income potential.

Most hotel owners realize that lodging facilities are particularly vulnerable to functional changes, physical deterioration, and uncontrollable economic factors. A hostelry can sometimes suffer from functional and economic obsolescence before construction is completed. As the building and other improvements age and begin to depreciate, the resultant loss in value becomes more difficult to quantify. Estimating the impact of even minor forms of obsolescence involves subjective evaluations, which weaken the credibility of this approach.

The cost approach is seldom used to estimate the market value of *existing* hotels and motels, because its underlying assumptions do not reflect the investment rationale of typical hostelry buyers. Lodging facilities are income-producing properties purchased with the intent of realizing future profits. Reproduction cost has little bearing on an investment decision where the buyer's primary concern is the potential return on equity.

When used in conjunction with the income approach, however, the cost approach does provide a meaningful standard of measurement in determining the feasibility of a *proposed* hostelry. For example, if the value obtained using the income approach is equal to or greater than the reproduction cost plus land value, the project can be considered economically feasible. If, on the other hand, the value obtained using the income approach is less than that produced using the cost approach, the investors should either scrap the project, reduce capital cost, or reevaluate and lower their desired return. In such cases, an additional equity investment is often required to secure sufficient financing.

The data used to estimate reproduction cost should be obtained from a qualified source — for example, an experienced contractor, architect or engineer, or a construction-cost manual. The land value can be established either by the purchase price (if appropriate) or from sales of comparable parcels. The chart below shows ranges of typical reproduction costs, land values, and so-called "soft" costs (here, pre-opening and operating capital) for three classes of lodging accommodations.

THE MARKET-DATA APPROACH

The market-data approach is based on the assumption that an informed purchaser will pay no more for a property than the cost of acquiring an existing property with the same utility. The appraiser estimates market value by comparing the sales price of similar transactions with the attributes of the subject property. Dissimilarities between the subject and comparable properties are resolved by ap-

TYPICAL HOTEL-MOTEL COSTS PER ROOM

	Improvements	Furniture, Fixtures, & Equipment	Land	Pre-Opening	Operating Capital	Total
Luxury	$32,000-55,000	5,000-10,000	4,000-12,000	1,000-2,000	1,000-1,500	43,000-80,500
Standard	20,000-32,000	3,000- 6,000	2,500- 7,000	750-1,500	750-1,000	27,000-47,500
Economy	8,000-15,000	2,000- 4,000	1,000- 3,500	500-1,000	500- 750	12,000-24,250

propriate adjustments. These differences may pertain to age, location, construction, condition, layout, equipment, size, and external economic factors.

The market-data approach often provides a highly supportable estimate of value for homogeneous properties like vacant land and single-family homes, where the adjustments are few and relatively simple to compute. For larger and more complex properties — office buildings, shopping centers, hotels — the required adjustments are numerous and more difficult to estimate.

THE INCOME APPROACH

Using the income approach, the appraiser converts anticipated future benefits of property ownership (dollar income) into an estimate of present value, typically by employing a discounting procedure.

The income approach is generally the preferred technique for appraising income-producing properties because it most closely reflects the investment rationale and strategies of typical buyers. Hotel and motel properties are particularly suited to the income approach. As noted previously, the cost and market-data approaches are generally inappropriate for lodging facilities because a large number of subjective judgments enter into the estimate of value. Most data used in the income approach have already been adjusted by market factors, thereby reducing the subjective content of the estimate to a minimum — an important consideration in light of the relatively high degree of risk associated with hostelry properties.

In using the income approach, the appraiser must (1) project net income, (2) select an appropriate capitalization rate, and (3) apply the proper discounting procedure. Each of these steps is discussed in detail below.

Projecting Net Income

Many terms have been used in appraisal literature to describe net income ready to be capitalized into an estimate of value, including *net income before recapture, net income before depreciation,* and *net operating income.* All of these terms are commonly used to denote the annual net income remaining after the deduction of all fixed and operating expenses, but before the deduction of such financial charges as recapture or debt service. In conformance with the Uniform System of Accounts for Hotels, the author will use the phrase ***income before interest and depreciation*** in this article.

When the income approach is used, the projection of income before interest and depreciation is based on two assumptions. First, projected income and expenses are expressed in constant dollars. Although inflation has been a way of life for more than 30 years, its effect on future income and expenses is rarely incorporated into appraisal calculations. Most hotel investors base their purchases on figures that do not reflect inflation, because they believe that inflationary increases in operating expenses can be offset by raising room rates and food and beverage prices. This belief has generally been valid, except during periods of extreme inflation and when the supply-and-demand relationship is out of balance.

Second, the projection of income and expenses is based on the assumption of competent management. The quality of management plays an important role in the profit potential of a lodging facility, and the appraiser must allow for the effects of varying degrees of managerial expertise in his calculations. Management quality can be poor, competent, or superior. If the subject property is currently under poor management, the appraiser is justified in projecting improved operating results based on more competent future management. On the other hand, if the subject now has superior management, the projected income and expenses used to estimate value should reflect a somewhat lesser degree of managerial skill (i.e., lower revenue, higher expenses). There are two cases in which the projections need not be adjusted to reflect competent management: (1) when management is under a long-term contract and would not change in the event of a sale, and (2) when the appraiser is estimating investment value, rather than market value. (Investment value is the value to a particular investor, based on his individual financial and managerial requirements. Market value is intended to represent the actions of typical buyers and must therefore assume a level of management that is competent or average.)

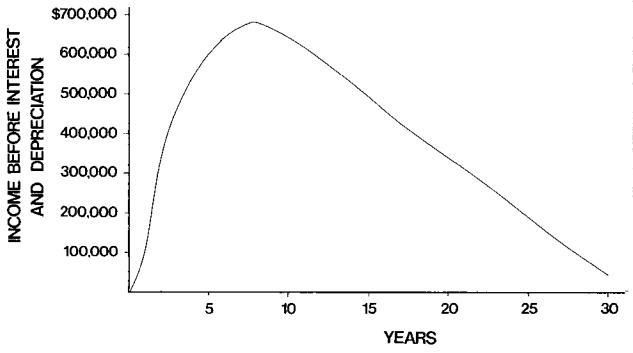
Most data used in the income approach have been adjusted by market factors, thereby reducing the subjective content of the estimate to a minimum — an important consideration in light of the risk associated with hotels.

Laying the groundwork for projecting income before interest and depreciation is a time-consuming process, but essentially the appraiser defines the market area, locates and quantifies the demand, and allocates the room nights among the competitive facilities. Based on these data, room revenue and other sources of income (e.g., food and beverage sales and telephone income) can be computed. Expense information may be obtained from actual operating statements when the subject is an existing property, and from comparable properties and national averages when the subject is a proposed facility.

The hotel-motel life cycle. The expected flow of income before interest and depreciation is an important consideration when selecting the appropriate discounting procedure. All real-estate investments have individual life cycles embodying the rise and fall of net income over a property's economic life. Most income-producing properties attain their full economic potential within a relatively

TYPICAL LIFE CYCLE
150-ROOM MOTEL

YEAR	INCOME BEFORE INTEREST & DEPRECIATION	YEAR	INCOME BEFORE INTEREST & DEPRECIATION
1	$100,000	16	$460,000
2	315,000	17	430,000
3	470,000	18	400,000
4	540,000	19	370,000
5	600,000	20	340,000
6	645,000	21	310,000
7	660,000	22	280,000
8	680,000	23	250,000
9	660,000	24	220,000
10	640,000	25	190,000
11	610,000	26	160,000
12	580,000	27	130,000
13	550,000	28	105,000
14	520,000	29	75,000
15	490,000	30	50,000



short time. This level is maintained for a number of years, and then gradually declines as various forms of depreciation erode the net income.

Lodging facilities generally take longer than most income-producing properties to achieve their maximum level of income. A typical hostelry will experience slowly rising occupancy over the first two to four years of operation; during this period, the income before interest and depreciation is often insufficient to cover normal debt service. A stabilized level of income is normally reached sometime in the second to fifth year and represents the property's discounted average net income. The income before interest and depreciation will usually rise above the stabilized level for a few years, but then gradually start to decline in the seventh to tenth years because of physical deterioration, functional obsolescence, and economic obsolescence. The decline continues over the remaining economic life of the property. A typical life cycle is represented by the table and figure above. A property's life cycle may be longer or shorter, depending on the amount of maintenance and periodic upgrading the owner is willing to perform.

Proposed hotels and motels are appraised as of the beginning of the life cycle. An existing lodging facility, however, may be at any point in the cycle. By estimating a property's position in the life cycle, the appraiser has a basis for projecting future income before interest and depreciation and selecting the proper discounting procedure.

The Capitalization Rate

A capitalization rate is a factor used to convert expected future income into an estimate of value. This rate encompasses an interest component that reflects the return on capital, and a recapture component that provides for a return of capital.

Theoretically, the interest component can be derived through a summation procedure of risk and investment analysis. By starting with a base rate representing a safe form of investment, such as a federally insured savings account, a series of upward adjustments are made to reflect different elements of risk and investment burden. For example:

	%
Safe rate (minimum risk)	**X**
Add for general hostelry risk	**I_1**
Add for management burden	**I_2**
Add for food and beverage risk	**I_3**
Add for rapid functional obsolescence	**I_4**
Add for non-liquidity	**I_5**
Add for other elements	**I_6**
	TOTAL

In practice, estimating the magnitude of each upward adjustment is too subjective to provide a supportable interest-rate derivation. A more reliable approach is to utilize the analytical expertise of the hundreds of money managers at the nation's lending institutions.

Basically, a hostelry investment is composed of a large amount of mortgage money (60 to 75 percent of the total investment) and a smaller amount of equity capital (25 to 40 percent). The interest rate on a hostelry mortgage is established by the lender, who takes into consideration all possible risks. The mortgagee is obviously in a somewhat more secure position than an equity investor, but it is always possible that in the event of a foreclosure the lender may be forced to assume the equity position.

One of the best sources of data on actual hotel-motel mortgage interest rates is the information compiled quarterly by the American Council of Life Insurance (Washington, DC), which represents 15 life-insurance companies. These statistics are periodically reproduced in *The Appraiser,* published by the American Institute of Real Estate Appraisers.

Typical interest rates and other lending terms obtained for permanent hotel and motel loans over the past ten

years are shown in the chart below. These rates are only averages and should be adjusted to reflect local monetary conditions and the individual characteristics of the subject property.

Other sources of lending information include local banks and insurance companies, real-estate investment trusts, mortgage brokers, and regulatory agencies. By comparing the rates used by several of these sources, the appraiser can estimate the mortgage interest components with reasonable accuracy.

The mortgage recapture component, which represents the return of the investment, is expressed in the rate of amortization. According to the American Council of Life Insurance, hostelry loans have typically been structured to be repaid over a 20- to 25-year term. The recapture component, together with the interest component, constitutes the yearly mortgage constant. The annual debt service is calculated by multiplying the mortgage constant by the original loan balance.

Owning a hotel is associated with a certain degree of status, for which some buyers are willing to accept a lower return.

The remaining 25 to 40 percent of a hostelry investment is composed of equity money. Like common stock, which is entitled to the residual earnings after all expenses (including debt service) have been paid, real-estate equity investments normally provide returns higher than those demanded by the mortgage component. The yearly equity return is called the "equity dividend" by appraisers and the "cash-on-cash return" by hostelry investors.

Estimating the appropriate equity dividend for a particular hotel investment requires familiarity with the current demands of hostelry owners and investors. Care must be taken to observe a broad cross section of active buyers because each is influenced by a variety of motivations. Results based on a limited sample could produce misleading assumptions. For example:

— An investor in a high tax bracket may settle for a lower-than-market equity dividend if the tax shelter benefits are particularly attractive.

— An opportunity to resell a property after several years for an appreciated price may reduce a buyer's cash-on-cash demand.

— Owning a hotel is associated with a certain degree of status, for which some buyers are willing to accept a lower return.

An active hotel-motel broker (e.g., a member of the Motel Brokers Association of America) can often provide insight into current market demands for hostelry equity dividends. Over the past decade, most hostelry prices have been based on equity returns ranging from a high of 20-25 percent to a low of 10-12 percent. Other good sources of equity information include typical hotel buyers and investors, lenders seeking equity participation and joint ventures, and hotel management companies.

Band of investment (weighted cost of capital). Combining the weighted average of the return demanded by the mortgage portion of the investment with the dividend requirement of the equity portion results in a capitalization rate that reflects the basic financial composition of a hostelry investment. This procedure is known as the *band-of-investment* method and is best explained by an example.

Let us suppose that a proposed 150-room motor hotel is being appraised for mortgage purposes. The appraiser has projected a stabilized income before interest and depreciation of $450,000 per year. The lender is prepared to provide a mortgage based on 75 percent of the appraised value at market terms. Mortgages for similar hostelries are currently written for 24 years at 10-percent interest, resulting in a mortgage constant of .1100. An investigation of equity capital sources reveals that an investor would expect a 15-percent equity dividend for this type of property.

TYPICAL HOTEL AND MOTEL MORTGAGES

	'77	'76	'75	'74	'73	'72	'71	'70	'69	'68	'67
Average Interest Rate	9.77	10.06	10.34	9.65	9.10	8.92	9.70	9.78	8.92	7.90	7.22
Average Mortgage Constant	11.0	11.2	11.4	11.0	10.6	10.5	11.1	11.2	10.8	10.3	10.0
Average Term (years/months)	23/6	22/9	21/6	20/8	22/2	21/4	22/1	24/8	20/5	*	*

*Not available.
Source: American Council of Life Insurance.

Capitalization Rate by the Band of Investment:

	Portion		Rate		Weighted Rate
Mortgage	.75	x	.1100	=	.0825
Equity	.25	x	.1500	=	.0375
Capitalization Rate					.1200

Capitalized Value:

$$\frac{\text{Stabilized Income Before Interest and Depreciation}}{\text{Capitalization Rate}} = \text{Value}$$

$$\frac{\$450{,}000}{.12} = \$3{,}750{,}000$$

Proof of Value:

75% Mortgage	$2,812,500	x	.11	=	$309,375
25% Equity	937,500	x	.15	=	$140,625
	$3,750,000				$450,000

The proof shows that with a $3,750,000 value, the mortgage portion (75%) would represent $2,812,500 and the equity portion (25%) $937,500. The yearly mortgage payments of interest and amortization are calculated by multiplying the original mortgage balance by the constant (.11), resulting in an annual debt service of $309,375. The equity dividend is established by multiplying the equity investment by the anticipated equity return (.15), which yields $140,625. Adding the annual debt service and the equity dividend yields a figure for stabilized income before interest and depreciation.

Essentially, the band-of-investment capitalization process works backward from the projection of stabilized income to the calculation of a value that will meet the demands of mortgage and equity investors.

Ellwood system. The *Ellwood system* is a modification of the band-of-investment procedure described above. Ellwood takes this process two steps further: a compensating factor for equity buildup is incorporated into the capitalization rate, and adjustments may be made to reflect potential property depreciation or appreciation during the term of the projection.

With the band of investment, amortization is charged as a mortgage expense (like interest), thereby increasing the capitalization rate and lowering the market value, as calculated under the income approach. In practice, amortization builds up equity, which is realized by the investor when the property is sold or refinanced. Opponents of Ellwood argue that the amortization of a long-term mortgage parallels property depreciation, which offsets any increase from equity buildup. Counter to this view is the argument that whenever a property's market value remains stable or increases, the equity holder's paydown of the mortgage from operating income represents an increase in his wealth and should be reflected in the calculation of his equity return.

The adjustment for possible gain or loss in property value makes the Ellwood-derived rate an equity yield rather than a cash-on-cash equity dividend. Since most

Capitalization Rate by the Ellwood System:

	Portion		Rate		Weighted Rate
Mortgage	.75	x	.1100	=	.0825
Equity	.25	x	.1600	=	.0400
Weighted Average	1.00				.1225
Less: credit for equity buildup .1722[1]	x .75	x	.0469[2]	=	.0061
Basic Rate — 10 years					.1164
Add: adjustment for depreciation	.10[3]	x	.0469[2]	=	.0047
Overall Rate					.1211

[1]Percent of mortgage principal paid by the 10th year.
[2]Sinking fund factor: 16% for 10 years.
[3]Expected depreciation over 10 years, at 1% per year.

Capitalized Value:

$$\frac{\text{Stabilized Income Before Interest and Depreciation}}{\text{Capitalization Rate}} = \text{Value}$$

$$\frac{\$350{,}000}{.1211} = \$2{,}890{,}000$$

Proof of Value:

75% Mortgage	$2,167,500	x	.11	=	$238,425
25% Equity	722,500				111,575
	$2,890,000				$350,000

Mortgage amortization for 10 years:	.1722	x	$2,167,500	= $373,243
Estimated depreciation for 10 years:	.10	x	2,890,000	= (289,000)
Original Equity				722,500
10th Year Equity Value				$806,743

Present Value of Equity Income and 10th Year Equity Value at 16% for 10 years:

Income	$111,575 x 4.8363[1]	=	$539,612
10th Year Equity Value	806,743 x .2267[2]	=	182,888
Original Equity			$722,500

[1]Present Value Ordinary Annuity One Per Period: 16% for 10 years.
[2]Present Value Reversion of One: 16% for 10 years.

hostelry buyers expect to keep their properties for a relatively long time, they give little consideration to what would constitute an acceptable equity yield. Substantiating the yield portion of the Ellwood formula is therefore often difficult. As investors become more sophisticated, Ellwood's and other yield-analysis systems will receive greater emphasis, particularly in the area of investment planning and analysis.

Appraisers are rarely able to obtain sufficient data from the sale of other properties to derive a meaningful capitalization rate based on the market.

To provide an example of how a capitalization rate is derived by the Ellwood system: suppose a hotel investor plans to purchase an existing 125-room motel with a stabilized income before interest and depreciation of $350,000 per year. The bank holding the existing financing is willing to increase the mortgage to 75 percent of market value at 10-percent interest, with a 24-year amortization (a mortgage constant of .11). Assume the investor will sell the property in 10 years and desires a 16-percent yield on his equity. Motel property values are expected to depreciate at the rate of one percent per year. The calculation of the capitalization rate for this example case is shown on the preceding page.

Market-derived rates. A third way to derive capitalization rates is to evaluate the terms and conditions of actual market sales. For example, let us say an investor recently purchased a motel for $3,000,000. An evaluation of the income indicates that the property has a stabilized income before interest and depreciation of $345,000. The market-derived capitalization rate for this sale is:

$$\frac{\$345,000}{\$3,000,000} = 11.5\%$$

As with any market-related approach, the appraiser should have complete understanding of the transaction and the motivation of the parties involved. Any unusual

Exhibit 1: Discounting Each Year's Income

Year	Income Before Interest & Depreciation	Present Value of a Reversion of One @ 12%	Discounted Value
1	$100,000	.8929	$ 89,290
2	315,000	.7972	251,118
3	470,000	.7118	334,546
4	540,000	.6356	343,224
5	600,000	.5674	340,440
6	645,000	.5066	326,757
7	660,000	.4523	298,518
8	680,000	.4039	274,652
9	660,000	.3606	237,996
10	640,000	.3220	206,080
11	610,000	.2875	175,375
12	580,000	.2567	148,886
13	550,000	.2292	126,060
14	520,000	.2046	106,392
15	490,000	.1827	89,523
16	460,000	.1631	75,026
17	430,000	.1456	62,608
18	400,000	.1300	52,000
19	370,000	.1161	42,957
20	340,000	.1037	35,258
21	310,000	.0926	28,706
22	280,000	.0826	23,128
23	250,000	.0738	18,450
24	220,000	.0659	14,498
25	190,000	.0588	11,172
26	160,000	.0525	8,400
27	130,000	.0469	6,097
28	105,000	.0419	4,399
29	75,000	.0374	2,805
30	467,000[1]	.0334	15,598
		TOTAL:	$3,749,959 ($3,750,000)

[1]$417,000 + $50,000 = $467,000

Exhibit 2: Capitalizing the Stabilized Year

Year	Income Before Interest & Depreciation	Estimated Market Value	Stabilized Income Before Interest & Depreciation
1	$100,000	$3,750,000	$450,000
2	315,000	4,100,000	492,000
3	470,000	4,277,000	513,000
4	540,000	4,320,000	518,000
5	600,000	4,299,000	515,000
6	645,000	4,214,000	505,000
7	660,000	4,075,000	489,000
8	680,000	3,904,000	468,000
9	660,000	3,693,000	443,000
10	640,000	3,476,000	417,000
11	610,000	3,253,000	390,000
12	580,000	3,033,000	364,000
13	550,000	2,817,000	338,000
14	520,000	2,605,000	313,000
15	490,000	2,398,000	288,000
16	460,000	2,192,000	263,000
17	430,000	1,999,000	240,000
18	400,000	1,809,000	217,000
19	370,000	1,626,000	195,000
20	340,000	1,451,000	174,000
21	310,000	1,285,000	154,000
22	280,000	1,129,000	136,000
23	250,000	985,000	118,000
24	220,000	853,000	102,000
25	190,000	736,000	88,000
26	160,000	634,000	76,000
27	130,000	550,000	66,000
28	105,000	486,000	58,000
29	75,000	439,000	53,000
30	467,000	417,000	50,000

detail must be taken into account to ensure that the derived capitalization rate represents normal market conditions. Some of the areas that should be carefully scrutinized are as follows:

- — Is the stated selling price the market value, or does unusual existing or purchase-money financing affect value?
- — Is the price based on existing or anticipated income?
- — Is the buyer motivated by special factors such as tax shelter, the benefit of a desirable franchise affiliation, and so forth?
- — Does the property suffer from deferred maintenance, which must be corrected by the buyer?
- — Did the transaction conform to the doctrine of a willing buyer and willing seller, both with full knowledge of all circumstances?
- — Is the comparable property similar to the subject with respect to size, location, market, and condition?

Very rarely is an appraiser able to obtain sufficient data from the sale of a comparable hostelry to derive a meaningful capitalization rate based on the market. Understanding the motivations of the buyer and seller alone requires more than a casual observation of the transaction.

Applying the Proper Discounting Procedure

The final step in the income approach is to take the projected net income and, using the appropriate capitalization rate, discount the future benefits to an estimate of present value. Which discounting procedure to use depends on the projected flow and duration of the net income.

Discount each year's income. The most basic form of discounting is to take each year's income before interest and depreciation and apply the *present-value-of-a-reversion-of-one* factor. Figures obtained through this process, using the 30-year life-cycle flow of income previously described, are shown in Exhibit 1. A 12-percent discount rate derived by the band-of-investment approach was considered appropriate. The estimated land value at the thirtieth year is $417,000.

This discounting procedure, also known as the discounted cash flow (DCF), works well when the income stream is irregular and can be projected for an extended period of time.

A life-cycle income projection might be of particular interest to a mortgagee. Assume a lender is willing to

make a mortgage at 75 percent of market value with an 11-percent constant. The annual debt service would be:

$$\$3,750,000 \times .75 \times .11 = \$309,375$$

Using the life-cycle projection of income before interest and depreciation, the lender is forewarned that the first year's income is insufficient to cover debt service. In addition, the lender will realize that the term of the loan should be shorter than 22 years.

Capitalize the stabilized year. Most appraisals do not include a full life-cycle projection. These computations are extremely time-consuming to prepare, especially if the net income must be supported with annual income-and-expense statements. An alternative is to use what is known as a *stabilized estimate* of income before interest and depreciation. A stabilized estimate generally refers to a representative year or, more technically, to the discounted average net income over the property's economic life. In estimating stabilized earnings, more weight is given to the income expected during the initial years because it is less affected by discounting than later years' income.

The stabilized income before interest and depreciation for the preceding example would be $450,000. When this is capitalized using a 12-percent capitalization rate, the resulting value on opening day is the same as the value derived through discounting each year's income flow:

$$\frac{\$450,000}{.12} = \$3,750,000$$

The value of a motel, as well as its stabilized income before interest and depreciation, varies from year to year, according to the property's position in the life cycle. For a new motel, assuming the date of value is opening day, the stabilized level of income is generally attained sometime between the second and fifth years. In the preceding example, the stabilized income was reached toward the end of the second year.

Exhibit 2 shows that using the same assumed 30-year life cycle of income before interest and depreciation, an estimate of market value can be developed for each of the 30 years by discounting all the succeeding years' income flows at 12 percent. The stabilized income before interest and depreciation is the discounted average net income over the remaining economic life, and will also yield the property's market value when capitalized at 12 percent.

If an appraiser were valuing this motel as of the eighth year, it would probably be evident from a market analysis and physical inspection that the property's income before interest and depreciation would soon peak and then begin to decline. Estimating a stabilized income based solely on the preceding years' operating results might have produced an inaccurate value. A knowledgeable hotel appraiser would have evaluated many factors and seen the downward trend developing. If the stabilized income before interest and depreciation for the eighth year were estimated at $468,000, the capitalized value would be:

$$\frac{\$468,000}{.12} = \$3,900,000$$

Discount buildup period plus stabilized year. For existing properties where the income before interest and depreciation shows only gradual fluctuations, the capitalization of a single stabilized year is generally sufficient to develop an estimate of market value. Appraisals of new hostelries facing a two- to four-year buildup period often include the projected income for the first two years plus an estimate of the stabilized year. The income for Years 1 and 2 is discounted to the present value using the present-value-of-a-reversion-of-one factor for one and two years, respectively. The estimated stabilized income for the remaining years of the property's projected life is first capitalized into a value using an overall rate and then discounted to the present value using the present-value-of-a-reversion-of-one factor for the second year. The sum of the present values equals the market value as of the date the property opens.

Using this approach, the following is an alternative procedure for valuing the motel as of opening day:

Year	Projected Income Before Interest & Depreciation		Present Value of A Reversion of One at 12%		Present Value
1	$ 100,000	x	.8929	=	$ 89,290
2	315,000	x	.7972		251,118
Stabilized $\frac{\$513,000_1}{.12}$ =	4,277,000	x	.7972		3,409,592
			TOTAL		$3,750,000

[1]Projected Stabilized Income Before Interest and Depreciation at Year 3.

While this procedure results in the same value as capitalizing the first year's stabilized income ($450,000), it demonstrates that lodging facilities typically face an initial period of income growth before reaching a stabilized level. The use of one or more buildup years emphasizes this characteristic of hostelry investment, and is particularly instructive for those unfamiliar with hotel-motel real estate.

As this article demonstrates, the appraisal of lodging facilities requires a wide range of expertise spanning the operational knowledge of a hotel executive and the valuation techniques of a designated appraiser. With the ultimate objective of reflecting the actions of typical buyers and sellers, the income approach closely parallels the investor's decision-making process — from the projection of future benefits, to the determination of an appropriate risk factor or rate of return, through the application of a discounting procedure to discount future benefits to the present value. □