The Valuation of Hotels and Motels for Assessment Purposes

by Stephen Rushmore, MAI, and Karen E. Rubin

The valuation of hotels and motels is a highly specialized form of real estate appraisal, requiring not only a thorough understanding of the many principles and procedures of general appraising, but also an in-depth knowledge of hotel operations. Appraisers soon learn that lodging facilities are more than land, bricks, and mortar; they are retail-oriented, labor-intensive businesses necessitating a high level of managerial expertise. In addition hostelries require a significant investment in personal property (furniture, fixtures, and equipment) that has a relatively short useful life and is subject to rapid depreciation and obsolescence. All these unusual characteristics must be handled in a proper manner during the hotel valuation process in order to derive a supportable estimate of market value.

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In most hotel valuations the appraiser is called upon to estimate the market value of the total property, which includes four components: land, improvements, personal property, and the going business. If such an appraisal is considered highly specialized, one can imagine the additional difficulties that present themselves when the valuation is for assessment purposes and only the real property components—land and improvements—can be considered.

REAL ESTATE TAXATION

Real estate taxes are one of the primary revenue sources used by municipalities to obtain capital for public expenditures such as highways, parks, welfare, interest on bonds, and other governmental services. The purpose of real estate taxes is the allocation of the municipal tax burden on the basis of real estate value. The higher the value of the real estate owned by a taxpayer, the larger the proportion of the tax burden he or she will assume. The legal term for real estate tax is *ad valorem tax,* or "in proportion to value."

To establish the proper allocation of the tax burden, municipalities employ assessors to assess all the taxable real estate within their jurisdictions. Theoretically, the assessment bears a definite relationship to market value so that properties of equal market values will have similar assessments and properties of higher and lower values will have proportionately larger and smaller assessments.

Assume that a taxing jurisdiction has just four properties. According to local assessment procedures, the relationship between assessed value and market value is 30%. The following chart shows the assessed values based on the estimate of market values:

Property	Estimated Market Value	Assessed Value (30% ad valorem)
1.	$ 75,000	$ 22,500
2.	100,000	30,000
3.	125,000	37,500
4.	150,000	45,000
Total	$450,000	$135,000

The total assessed value of the taxing jurisdiction is known as the *tax base* and is used to calculate the tax rate. If the annual municipal budget for this taxing jurisdiction is $18,000 the tax rate would be

$$\frac{\$18,000}{\$135,000} = \$1.333 \text{ per } \$1 \text{ of assessed value}$$

or, $133.33 per $1,000 of assessed value.

Therefore, the total tax burden is allocated as follows:

Property	Assessed Value		Tax Rate		Real Estate Tax Burden
1.	$22,500	×	$.1333	=	$ 3,000
2.	30,000	×	.1333	=	4,000
3.	37,500	×	.1333	=	5,000
4.	45,500	×	.1333	=	6,000
			Total	=	$18,000

The preceding example shows the mechanics of allocating the municipal budget based on real estate assessed values. From this example, several relationships can be observed:

- The allocation of the tax burden to each property will not change should the relationship between the assessed value and market value be altered. Some municipalities assess at 100% of market value while others employ a percentage of market value.

- Should a fifth property be developed within the taxing jurisdiction, the tax base will increase and the tax rate will decrease, assuming the municipal budget remains constant. Although the assessed value of the properties does not change, the individual tax burden decreases.

- A change in the municipal budget affects only the tax rate.[1]

The key to establishing the proper assessment is the estimate of market value. The term *market value* is defined by the International Association of Assessing Officers as follows:

> The highest price estimated 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.[2]

APPROACHES TO VALUE

In appraising real estate for market value, the professional appraiser has three approaches from which to select: the cost approach, the sales comparison approach, and the income capitalization approach. While all three valuation procedures are normally given consideration, the inherent strengths of each approach and the nature of the subject property must be evaluated in order to determine which will provide supportable estimates of market value.

1. Stephen Rushmore. "What Can Be Done About Your Hotel's Real-Estate Taxes?" *The Cornell Hotel and Restaurant Administration Quarterly* (May 1977): 78-79.
2. *Assessing and the Appraisal Process*, 5th ed. (Chicago: International Association of Assessing Officers, 1974), 10.

The appraiser is then free to select one or more of the appropriate approaches in arriving at a final value estimate.

THE COST APPROACH

The cost approach is an estimation of market value developed by computing the current cost of replacing a property and subtracting any depreciation resulting from one or more of the following factors: physical deterioration, functional obsolescence, and economic obsolescence. The value of the land as if vacant and available is then added to the depreciated value of the improvements to produce a total value estimate.

The cost approach may sometimes provide a reliable estimate of value for newly constructed properties; however, as buildings and other forms of improvements increase in age and begin to depreciate, the resultant loss in value becomes increasingly more difficult to quantify accurately.

Knowledgeable buyers of lodging facilities generally base their purchase decisions on economic factors such as forecasted net income and return on investment. Since the cost approach does not reflect any of these income-related considerations, but requires instead a number of highly subjective and unsubstantiable depreciation estimates, this approach is usually given very little weight in the hotel valuation process.

THE SALES COMPARISON APPROACH

The sales comparison approach estimates the value of a property by comparing it with similar properties recently sold in the open market. To obtain a supportable estimate of value, the sales price of a comparable property must be adjusted to reflect any dissimilarities between it and the subject property.

The sales comparison approach may provide a usable value estimate for simple forms of real estate such as vacant land and single family homes, where the properties are homogeneous and adjustments are few in number and relatively simple to compute. However, for larger and more complex investments such as shopping centers, office buildings, and hotels, where the adjustments are numerous and more difficult to quantify accurately, the market approach quickly loses its reliability.

As with the cost approach, hotel investors typically do not employ the sales comparison approach in reaching their final purchase decisions. Various elements such as the lack of timely comparable hostelry data, the hundreds of unsupportable adjustments, and the general inability to determine the true financial terms and human motivations of comparable transactions, usually make the results of the sales comparison approach highly questionable. Occasionally, sales comparison provides a range of values that may bracket and support the income capitalization approach. However, any reliance beyond the establishment of very broad parameters is not normally justified by the quality of data.

The market-derived capitalization rates sometimes utilized by appraisers are also susceptible to the same shortcomings inherent in the sales comparison approach. To substantially reduce the reliability of the income capitalization approach by employing capitalization rates obtained from unsupported market data not only weakens the final estimate of value, but also ignores the normal investment analysis procedures employed by hotel purchasers.

Because appraisers are obligated to mirror the actions of the marketplace rather than create hypothetical valuation procedures, the sales comparison approach is generally given very little weight in the hotel appraisal process.

THE INCOME CAPITALIZATION APPROACH

The income capitalization approach takes a property's forecasted net income before debt service and allocates these future benefits to the mortgage and equity components based on market rates of returns and loan-to-value ratios. Through a discounted cash flow and income capitalization procedure, the value of each component is calculated. The total of the mortgage component plus the equity component equals the value of the property. This approach is often selected as the preferred valuation method for income-producing properties because it most closely reflects the investment thinking of knowledgeable buyers.

Nationwide experience indicates that the procedures utilized in estimating market value by the income capitalization approach are comparable to those employed by the hotel and motel investors actually comprising the marketplace. For this reason the income capitalization approach produces the most supportable value estimate and is generally given the greatest weight in the hotel valuation process.

VALUING HOTELS FOR ASSESSMENT PURPOSES

A lodging facility is a unique form of real estate, consisting of four components: land, improvements, going business, and personal property. When valuing hotels and motels for real property assessment purposes, where only the market value of land and improvements is at issue, the appraiser must break down or subdivide the overall property value into its individual components. This procedure requires an understanding of hotel operations as well as the economic relationship of each component to the entire property. Hotels and motels are almost always valued by an income capitalization approach that takes the property's stabilized net income and capitalizes it into an estimate of market value.

STABILIZED NET INCOME

The stabilized net income is intended to reflect the anticipated operating results of the hotel over its remaining economic life, given any or all applicable stages of buildup, plateau, and decline in the life cycle. Therefore, such

stabilized net income excludes from consideration any abnormal relation of supply and demand and any transitory or nonrecurring conditions that may result in unusual revenues or expenses of the property. The net income used for property tax appraisals excludes any deductions for real estate taxes since this expense is the issue of the appraisal.

The process of deriving the stabilized net income for a lodging facility requires the appraiser to look into the future and estimate operating revenues and expenses. This is accomplished by forecasting or predicting trends in historical performance based on the hotel's current position in an economic life cycle.

Most types of real estate exhibit a pattern or life cycle in their ability to generate income over a period of time. Usually, a property's net income will start low and rise quickly, reaching a plateau before slowly declining. The length of the life cycle is termed the economic or useful life. A hotel or motel has a life cycle which normally ranges from 20 to 40 years. The growth in real net income will generally peak sometime during the eighth to fourteenth year and slowly decline. Although a hotel's life cycle can sometimes be extended through an infusion of capital for redecorating and upgrading, the appraiser is usually interested in the basic cycle unless upgrading has recently been accomplished.

By determining a hotel's position in its life cycle, the appraiser is able to forecast future income based on historical operating results. Three examples illustrate this procedure.

A new hotel which opened three years ago showed a normal upward growth in occupancy.

Year	Occupancy
1980	55%
1981	67%
1982	69%

It appeared from a market area evaluation that a 70% occupancy represents a stabilized level. Table 1 is a statement of income and expense that shows the three years of actual operating results and the stabilized forecast. When this stabilized estimate of occupancy level is combined with the historical performance of the operation, a stabilized forecast of operating results can be made.

A 10-year-old hotel has shown operating performance that has oscillated up and down.

Year	Occupancy
1980	68%
1981	72%
1982	69%

TABLE 1

A New Hotel: Upward Life Cycle
Statement of Income and Expenses

Year:	1980		1981		1982		Stabilized	
Number of rooms:	300		300		300		300	
Occupancy:	55%	% of	67%	% of	69%	% of	70%	% of
Average rate:	$58.77	Gross	$62.30	Gross	$66.04	Gross	$70.00	Gross
Revenues								
Rooms	$3,540,000	49.8%	$4,571,000	51.9%	$4,989,000	52.2%	$5,366,000	52.4%
Food	2,356,000	33.1	2,792,000	31.7	3,011,000	31.5	3,219,000	31.4
Beverage	1,060,000	14.9	1,256,000	14.3	1,355,000	14.2	1,449,000	14.1
Telephone	115,000	1.6	139,000	1.6	150,000	1.6	161,000	1.6
Other income	40,000	0.6	47,000	0.5	50,000	0.5	54,000	0.5
Total	7,111,000	100.0	8,805,000	100.0	9,555,000	100.0	10,249,000	100.0
Departmental costs & expenses								
Rooms	1,018,000	28.8*	1,171,000	25.6*	1,257,000	25.2*	1,341,000	25.0*
Food & beverage	2,894,000	84.7*	3,272,000	80.8*	3,505,000	80.3*	3,734,000	80.0*
Telephone	127,000	110.4*	142,000	102.2*	151,000	100.7*	161,000	100.0*
Total	4,039,000	56.8	4,545,000	52.1	4,913,000	51.4	5,236,000	51.1
Gross operating income	3,072,000	43.2	4,220,000	47.9	4,642,000	48.6	5,013,000	48.9
Undistributed operating expenses								
Administrative & general	658,000	9.3	723,000	8.2	771,000	8.1	820,000	8.0
Marketing	367,000	5.2	406,000	4.6	434,000	4.5	461,000	4.5
Property operations								
& maintenance	320,000	4.5	360,000	4.1	385,000	4.0	410,000	4.0
Energy	245,000	3.4	264,000	3.0	280,000	2.9	300,000	2.9
Total	1,590,000	22.4	1,753,000	19.9	1,870,000	19.5	1,991,000	19.4
House profit	1,482,000	20.8	2,467,000	28.0	2,772,000	29.1	3,022,000	29.5
Field expenses								
Insurance	26,000	0.4	27,000	0.3	29,000	0.3	30,000	0.3
Net income	$1,456,000	20.4%	$2,440,000	27.7%	$2,743,000	28.8%	2,992,000	29.2%

*Expressed as a percentage of departmental revenue

This property appears to be at the peak or plateau portion of its life cycle, and continuation at a 70% stabilized occupancy level is reasonable. Table 2 shows the three years of actual operating results plus the stabilized forecast, derived by combining the historical performance with the stabilized estimate of 70% occupancy.

A 15-year-old hotel has shown declining performance over the past three years.

Year	Occupancy
1981	78%
1981	75%
1982	71%

TABLE 2

A Mid-Age Hotel: Plateau Life Cycle
Statement of Income and Expenses

Year:	1980	% of Gross	1981	% of Gross	1982	% of Gross	Stabilized	% of Gross
Number of rooms:	300		300		300		300	
Occupancy:	68%		72%		69%		70%	
Average rate:	$58.77		$62.30		$66.04		$70.00	
Revenues								
Rooms	$4,376,000	52.1%	$4,912,000	52.7%	$4,989,000	52.2%	$5,366,000	52.4%
Food	2,657,000	31.6	2,914,000	31.2	3,011,000	31.5	3,219,000	31.4
Beverage	1,196,000	14.2	1,311,000	14.0	1,355,000	14.2	1,449,000	14.1
Telephone	132,000	1.6	146,000	1.6	150,000	1.6	161,000	1.6
Other income	44,000	0.5	48,000	0.5	50,000	0.5	54,000	0.5
Total	8,405,000	100.0	9,331,000	100.0	9,555,000	100.0	10,249,000	100.0
Departmental costs & expenses								
Rooms	1,112,000	25.4*	1,209,000	24.6*	1,257,000	25.2*	1,341,000	25.0*
Food & beverage	3,104,000	80.6*	3,357,000	79.5*	3,505,000	80.3*	3,734,000	80.0*
Telephone	134,000	101.5*	144,000	98.6*	151,000	100.7*	161,000	100.0*
Total	4,350,000	51.7	4,710,000	50.6	4,913,000	51.4	5,236,000	51.1
Gross operating income	4,055,000	48.3	4,621,000	49.4	4,642,000	48.6	5,013,000	48.9
Undistributed operating expenses								
Administrative & general	684,000	8.1	734,000	7.9	771,000	8.1	820,000	8.0
Marketing	385,000	4.6	413,000	4.4	434,000	4.5	461,000	4.5
Property operations & maintenance	341,000	4.1	368,000	3.9	385,000	4.0	410,000	4.0
Energy	249,000	3.0	265,000	2.8	280,000	2.9	300,000	2.9
Total	1,659,000	19.8	1,780,000	19.0	1,870,000	19.5	1,991,000	19.4
House profit	2,396,000	28.5	2,841,000	30.4	2,772,000	29.1	3,022,000	29.5
Field expenses								
Insurance	26,000	0.3	27,000	0.3	29,000	0.3	30,000	0.3
Net income	$2,370,000	28.2%	$2,814,000	30.1%	$2,743,000	28.8%	2,992,000	29.2%

*Expressed as a percentage of departmental revenue

This property is at the downward phase in its life cycle, and a 70% stabilized occupancy level would be appropriate. The statement of income and expenses in table 3 shows the three years of actual operating results plus the stabilized forecast which has been derived from historical performance trended downward to reflect the lower 70% stabilized estimate of occupancy.

Where the possibility of litigation is present for property tax appraisals, many disputes could be settled by using a hotel's actual operating revenues and expenses for either the year prior to or subsequent to the date of value. As the previous examples demonstrate, most hotels older than eight years are in the plateau or declining stages of their life cycle, and the historic net income does not significantly understate what can be considered a stabilized level. For example, if the actual 1981 net income of the 10-year-old hotel was

TABLE 3

An Older Hotel: Declining Life Cycle
Statement of Income and Expenses

Year:	1980		1981		1982		Stabilized	
Number of rooms:	300		300		300		300	
Occupancy:	78%	% of	75%	% of	71%	% of	70%	% of
Average rate:	$58.77	Gross	$62.30	Gross	$66.04	Gross	$70.00	Gross
Revenues								
Rooms	$5,020,000	53.4%	$5,116,000	53.0%	$5,134,000	52.5%	$5,366,000	52.4%
Food	2,888,000	30.7	2,988,000	31.0	3,063,000	31.3	3,219,000	31.4
Beverage	1,300,000	13.8	1,345,000	13.9	1,378,000	14.1	1,449,000	14.1
Telephone	146,000	1.6	150,000	1.6	153,000	1.6	161,000	1.6
Other income	48,000	0.5	49,000	0.5	51,000	0.5	54,000	0.5
Total	9,042,000	100.0	9,648,000	100.0	9,779,000	100.0	10,249,000	100.0
Departmental costs & expenses								
Rooms	1,184,000	23.6*	1,232,000	24.1*	1,274,000	24.8*	1,341,000	25.0*
Food & beverage	3,264,000	77.9*	3,409,000	78.7*	3,541,000	79.7*	3,734,000	80.0*
Telephone	139,000	95.2*	146,000	97.3*	152,000	99.3*	161,000	100.0*
Total	4,587,000	48.8	4,787,000	49.6	4,967,000	50.8	5,236,000	51.1
Gross operating income	4,815,000	51.2	4,861,000	50.4	4,812,000	49.2	5,013,000	48.9
Undistributed operating expenses								
Administrative & general	704,000	7.5	740,000	7.7	776,000	7.9	820,000	8.0
Marketing	398,000	4.2	418,000	4.3	437,000	4.5	461,000	4.5
Property operations & maintenance	357,000	3.8	373,000	3.9	388,000	4.0	410,000	4.0
Energy	252,000	2.7	266,000	2.8	281,000	2.9	300,000	2.9
Total	1,711,000	18.2	1,797,000	18.7	1,882,000	19.3	1,991,000	19.4
House profit	3,104,000	33.0	3,064,000	31.7	2,930,000	29.9	3,022,000	29.5
Field expenses								
Insurance	26,000	0.3	27,000	0.3	29,000	0.3	30,000	0.3
Net income	$3,078,000	32.7%	$3,037,000	31.4%	$2,901,000	29.6%	2,992,000	29.2%

*Expressed as a percentage of departmental revenue

used to estimate the stabilized level, it would have understated the profit by 5.9%. The actual 1982 net income understates the stabilized level by 8.3%. An even closer relationship exists for older hotels where the actual 1981 net income of the 15-year-old hotel was 1.5% over the stabilized level and the actual 1982 net income was 3% below the stabilized level. None of these divergencies can be considered unacceptable, particularly over a period of time where the smoothing impact of averaging tends to minimize the differences.

CAPITALIZATION RATE

The capitalization rate is the weighted cost of the invested capital that takes the form of mortgage debt and equity. For property tax appraisals the capitalization rate will also include the local tax rate expressed as a percentage of market value. This allows the appraiser to capitalize the net income before real estate taxes by assuming that the ultimate tax burden will equate to the municipally mandated relationship to market value.

If the taxing jurisdiction's assessments are based on 100% of market value, then the tax rate is simply added to the overall capitalization rate. If the jursidiction assesses at less than 100% of market value, the effective tax rate is first calculated by multiplying the assessment ratio by the tax rate. The effective tax rate is then added to the overall capitalization rate.

Occasionally, the stated ratio of assessment used by the assessor differs from the actual or what is called the common level ratio. An assessed value calculated by using a ratio of assessment higher than the common level ratio will overstate a property's assessed value and tax burden. Care must be taken to ensure that the municipally stated assessment ratio is, in fact, being uniformly applied to all properties within the jurisdiction.

The example below demonstrates the procedure for valuing hotels and motels for assessment purposes. The previously cited new 300-room hotel with the upward life cycle showed a 70% stabilized level of occupancy which is expected to continue for the foreseeable future. A forecast of income and expense at the stabilized occupancy level resulted in the following operating data:

	Stabilized
Occupancy	70%
Average rate	$70.00
Rooms revenue	$5,366,000
Total revenue	$10,249,000
Stabilized net income before real estate taxes and mortgage kicker	$2,992,000

The stabilized net income before real estate taxes and mortgage kicker represents the subject's operating income and contains profits generated from the land, improvements, going concern, and personal property components. To isolate and value the real property components, the following procedure is recommended:

Capitalization Rate Data as of the Date of Value

Mortgage interest	12.5%
Mortgage kicker	2.0% of rooms revenue
Mortgage term	30 years
Mortgage constant	.1280
Loan-to-value ratio	75%
Equity dividend	12%
Assessment ratio	45%
Real estate tax rate	$57.40 per $1,000

or

$.0574 per $1

The before-tax overall rate is developed by the band of investment, which is a weighted average of the cost of capital plus an adjustment for the real estate tax rate.

Mortgage	.75	×	.1280	=	.0960
Equity	.25	×	.1200	=	.0300
After-tax overall rate				=	.1260
Tax adjustment:	.45	×	.0574	=	.0258
Before-tax overall rate					.1518

The .126 after-tax overall rate is the average of the mortgage constant and equity dividend rate at a 75%-to-25% weighting. The tax adjustment shows that the property tax burden will equate to 2.58% of the real property's market value. This relationship of the assessment ratio to the real estate tax rate is known as the effective tax rate.

The example further assumes that the mortgage requires a 2%-of-rooms revenue kicker, which can be expressed as an additional expense deduction.

Stabilized net income before	
real estate taxes and mortgage kicker	$2,992,000
Less: Mortgage kicker ($5,366,000 × .02)	107,000
Stabilized net income before real estate taxes	$2,885,000

The value of the going business and the personal property components must now be separated from the total property in order to isolate the pure real property (land and improvements) value. Since the appraisal is based on an income approach, the overall value may be subdivided by ascribing a portion of the income flow to a particular component and deducting that flow from the stabilized net income before real estate taxes.

BUSINESS VALUE ADJUSTMENT

The business component of a hotel's income stream accounts for the fact that a lodging facility is a labor-intensive, retail-type activity that depends upon customer acceptance and highly specialized management skills. In contrast to an apartment or office building where tenants sign leases for one or more years, a hotel experiences a complete turnover of patronage every two to four days. A bad reputation spreads rapidly and can have an immediate effect on occupancy. In addition a hostelry generally offers food and beverage services which further complicate the operation and require additional business and managerial talents.

Another facet of business value is the benefits that accrue from an association with a recognized hotel company through either a franchise or management contract affiliation. Chain hotels generally out-perform independents and the added value created by increased profits is exclusively business-related.

Several procedures have evolved to estimate the business value of a lodging facility. The most appropriate theory for today's environment is based on the premise that by employing a professional management agent to take over the day-to-day operation of the hotel—thereby allowing the owner to maintain only a passive interest—the income attributed to the business has been taken by the managing agent in the form of a management fee. Deducting a management fee from the stabilized net income thereby removes a portion of the business component from the income stream.

An additional business value deduction must also be made if the property benefits from a chain affiliation. This is accomplished by either increasing the management fee expense or by adding a separate franchise fee deduction. Hotel management fees, expressed as a percentage of total revenue, range from 2% to 4% for independent, nonchain management companies, and from 4% to 8% for the larger chain and nationally recognized agents. Franchise fees will usually range from 3% to 5% of total rooms revenue. Often hotels will be managed by one of the smaller independent management companies and also maintain a franchise affiliation. The proper business value deduction in this instance would be a management fee expense of 2% to 4% of total revenue plus a franchise fee of 3% to 5% of rooms revenue. The amount of business value deduction under this set of circumstances should approximate the management fee expense charged by a national hotel chain.

The following calculations show both management assumptions:

Managed by Nationally Recognized Hotel Chain

Total Revenue		Management Fee National Hotel Chain		Business Income
$10,249,000	×	.05	=	$512,000

Managed by Independent with Franchise Affiliation

Total Revenue		Management Fee Independent		
$10,249,000	×	.03	=	$307,000

Rooms Revenue		Franchise Fee		
$5,366,000	×	.04	=	215,000
		Business Income	=	$522,000

The calculation above demonstrates that the income attributed to the going business is similar under both assumptions. If the subject were an independent

hotel without a franchise identity, the proper business value deduction in this instance would be $307,000.

The theory of using a management fee in property tax assessment valuations to separate the income attributed to the going concern from the income attributed to the overall property is further supported by the fact that a large number of hotels are operated by managing agents and their fees have become a normal operating expense that is routinely included in all hotel appraisals.

PERSONAL PROPERTY ADJUSTMENT

The personal property within a hotel is known as furniture, fixtures, and equipment (F F & E). Although some jurisdictions assess and tax personal property separately, it must be isolated and excluded from the real property components. Two calculations are necessary to remove the personal property value from the income flow: a return of personal property and a return on personal property.

The return of personal property is based on the fact that F F & E has a relatively short useful life and must be replaced on an ongoing basis. The Internal Revenue Service's "Depreciation Guidelines and Rules" state that the life expectancy for hotel furnishings and equipment averages six to ten years. Although the replacement of F F & E is a capital expenditure and is not included on an accountant's income and expense statement, it does represent a reduction in cash flow and equity return, which has a negative effect on a property's market value. Hotel companies and appraisers account for the frequent replacement of F F & E by establishing an expense deduction known as a reserve for replacement. This fund reduces the hotel's cash flow in annual installments by an amount necessary to replace all existing F F & E with new F F & E over an assumed useful life. Two procedures are generally used for calculating the reserve for replacement: straightline and percentage of revenue.

STRAIGHTLINE METHOD

The current cost to furnish and equip the subject property with new F F & E is estimated to be $10,250 per room. This represents guest rooms, lobby, restaurant and lounge furnishings, kitchen, front desk, office equipment, and all other items of F F & E expressed on a per room basis. The useful life is estimated at 10 years. The yearly reserve for replacement or return of personal property is calculated as follows:

Number of Rooms		Replacement Cost		Total Cost
300	×	$10,250	=	$3,075,000

Estimated life		=	10 years
Yearly return of personal property			$308,000

A somewhat lower yearly return of personal property would result if an interest-bearing sinking fund was established to accumulate the reserve for replacement. In reality, however, hotels are not closed down and totally refurbished once every eight to ten years. The replacement process is ongoing with soft goods lasting one to three years, case goods eight to ten years, and kitchen equipment twelve to fifteen years. The actual reserve fund generally has a minimal balance and any accumulation of interest is insignificant. The use of a sinking fund calculation in establishing a yearly return of personal property would therefore not be appropriate.

PERCENTAGE OF REVENUE

The total stabilized revenue for the subject property is estimated at $10,249,000 and the appropriate reserve for replacement, expressed as a percentage of revenue, has been set at 3%. The yearly reserve for replacement or return of personal property is calculated as follows:

Total Revenue		Percentage of Revenue		Yearly Return of Personal Property
$10,249,000	×	.03	=	$307,000

The percentage of revenue procedure is well supported and documented by numerous hotel management companies who stipulate specifically in their contracts that a reserve for replacement must be maintained and the formula is to be based on a percentage of total revenue. The industry norm for a reserve for replacement expressed as a constant percentage ranges from $2\frac{1}{2}\%$ to $3\frac{1}{2}\%$. Sometimes the formula starts with a lower percentage (1% to 2%) during the initial years of operation and increases in a series of steps to a 4% to 5% level in the seventh to tenth year. For appraisal purposes the constant percentage is the most appropriate.

The return on personal property is the second calculation required to remove the income attributed to personal property from the income stream. It is based on the premise that a component of a property is entitled to an annual return equal to the cost of the capital comprising that component. In this instance the component consists of all F F & E currently in use at the subject property. The value of the F F & E component can be estimated in several ways. A personal property appraiser might inventory and value each item, thereby producing a highly supportable value estimate, but this procedure can be both time-consuming and costly. If the taxing jurisdiction separately assesses personal property, using the current assessed value alleviates many disputes. Occasionally, the book value of the F F & E may be utilized, but this method tends to understate its market value in use.

The percentage rate of return on personal property should reflect the cost of capital commonly used to purchase F F & E. Chattel mortgages, which normally bear interest rates ranging from two to five points over real estate mortgages, demonstrate the perceived risk in personal property investments. Unfortunately, chattel financing is somewhat rare and interest rates for these loans are difficult to document. The current interest rates on hotel mortgages probably understate the required F F & E rate of return, but this readily available data establishes a firm benchmark that is difficult to dispute.

The value of the F F & E currently in use at the subject property was estimated at $4,000 per room and supported by the personal property assessment. The percentage rate of return was based on a 12.5% mortgage interest rate. Since the F F & E is subject to personal property tax, the personal property tax rate is loaded into the rate of return in the same manner as the real property tax rate is combined with the overall rate. In the subject's jurisdiction F F & E is assessed at 100% of market value and the current personal property tax rate is .015. Combining the personal property rate of return of .125 with the personal property tax rate results in a total personal property rate of .14. The return on personal property is calculated as follows:

Number of Rooms		Value of Existing F F & E		Total Value
300	×	$4,000	=	$1,200,000
Rate of return and personal property taxes				.14
Return on personal property				$ 168,000

The total income attributed to personal property is the combination of both the return of and on personal property.

Return of personal property	$307,000
Return on personal property	168,000
Income attributed to personal property	$475,000

Deducting the income attributed to the business and the income attributed to personal property from the stabilized net income before real estate taxes results in the income attributed to the real property components of land and improvements.

Stabilized net income before real estate taxes	$2,885,000
Less:	
Income attributed to the business	522,000
Income attributed to personal property	475,000
Stabilized net income attributed to real property	$1,888,000

The valuation process using the income capitalization approach takes the stabilized net income attributed to real property, which was calculated before real estate taxes, and divides that amount by the before-tax overall rate.

$$\frac{\text{Stabilized net income attributed to real property}}{\text{Before-tax overall rate}} = \frac{\$1,888,000}{.1518} = \$12,437,417$$

Market value of real property   or, $12,400,000

PROOF OF VALUE

The value of the real property can be proven by deducting the real and personal property taxes from the stabilized net income before real estate taxes and using an overall rate without the tax adjustment to verify the value of the real property component.

Market value of real property	$12,400,000
Assessment ratio	.45
Assessed value	$ 5,580,000
Tax rate	.0574
Real estate tax	$ 320,000
Stabilized net income attributed to real property	$ 1,888,000
Less: Real estate tax	320,000
Stabilized net income	$ 1,568,000

$$\frac{\$1,568,000}{.126} = \$12,444,444$$

or, $12,400,000

Using a market valuation of the subject's real property of $12,400,000, the above calculation shows that the assessed value would be $5,580,000 and the tax burden amounts to $320,000. Deducting the tax burden from the stabilized net income attributed to real property produces a stabilized net income of $1,568,000. The market value is verified when the stabilized net income is capitalized by the after-tax overall rate of 12.6%.

ALLOCATION OF VALUE

An interesting exercise that shows the relative values among a hotel's components is the allocation of value. The following calculation sets forth the valuation of the subject's four components, which represent the total property value.

Stabilized net income before real estate taxes	$2,885,000
Less:	
Return of personal property	307,000
Personal property taxes	18,000
Real estate taxes	320,000
Net income attributed to total property	$2,240,000

$$\frac{\$2,240,000}{.126} = \$17,777,777$$

Total property value	$17,780,000

The value of the total property is calculated by starting with the stabilized net income before real estate taxes and deducting the return of personal property, which represents the reserve for replacement normally charged in all hotel appraisals. Personal property and real estate taxes are then deducted, leaving net income attributed to total property. This amount includes income attributed to real property components and business and personal property components. The value of the total property is calculated by dividing the net income attributed to total property by the after-tax overall rate of 12.6%.

The following table shows the allocation of the total property value:

Component	Income Attributed	Rate of Return	Unrounded Component Value	% of Total Property Value
Real property	$1,568,000	.126	$12,444,444	70%
Personal property	150,000	.125	1,200,000	7
Business	522,000	.126	4,142,857	23
Total property	$2,240,000		$17,787,301	100%

The subject property's land and improvements comprise 70% of the total property value with personal property and business value representing 7% and 23%, respectively. A newer hotel would probably have a higher percentage of value allocated to the personal property which would come at the expense of the real property component.

CONCLUSIONS

The procedures for valuing a hotel's real property components are based on current hotel investment structures where management contracts are prevalent and many hostelry owners assume passive positions while employing companies to handle the day-to-day business activities. Twenty to 50 years ago, it was normal for a hotel company to lease a lodging facility from

a landlord and pay rent for its use. In many instances the company furnished and equipped the hotel, so the rental payment excluded income attributed to the personal property and actually represented a pure income to the real estate. These leases greatly simplified the valuation of hotels for assessment purposes because the value of the real property could easily be determined from the capitalized value of the stabilized rental payments.

Twenty-five years ago, a typical economic rental formula for a leasehold position in a hotel wherein the landlord owned the land and improvements and was responsible for payment of real estate taxes, and the tenant owned the personal property and paid all operating expenses, was

Source of Revenue	Rental Based on Percentage of Revenue
Rooms	25%
Food	5
Beverage	10
Other Income	20

Based on the forecasted stabilized revenues used in the previous example, the following stabilized economic rent was calculated:

	Stabilized Revenue		Percentage Rent		Stabilized Rent
Rooms	$ 5,366,000	×	.25	=	$1,342,000
Food	3,219,000	×	.05	=	161,000
Beverage	1,449,000	×	.10	=	145,000
Other	54,000	×	.20	=	11,000
Total	$10,088,000				$1,659,000

A leased-fee capitalization rate of 10.8% was considered appropriate, reflecting a somewhat lower risk and less management involvement than the fee capitalization rate of 12.6% previously used. Since the landlord is responsible for real estate taxes, the .0258 adjusted tax rate must be added to produce a .1338 before-tax overall rate.

Assuming a long-term lease, the value of the leased fee representing the land and improvements can be estimated by capitalizing the total stabilized rent by the before-tax overall rate.

$$\frac{\$1,659,000}{.1338} = \$12,399,103$$

Market value of real property $12,400,000

Obviously, the leased-fee procedure set forth above appears far simpler than previous approaches using net income forecasts, management fees, and F F & E deductions. Unfortunately, entire hotels (land and improvements) are seldom leased any more and justification for an up-to-date economic rental

formula and leased-fee capitalization rate is virtually impossible. More importantly, current hotel buyers are not purchasing hotels based on the leased-fee valuation procedure, so an appraiser using this method would not be reflecting the market.

The appraisal of hotels for assessment purposes in which only the real property components are valued can be performed in a manner utilizing the financial and operating structure demonstrated by current hotel transactions. By starting with a stabilized net income representing returns to the four components and deducting income attributed to business and personal property, a pure real property income flow remains to be capitalized into a value estimate. This procedure appears somewhat complicated, but when taken in a step-by-step, logical manner, it can be well supported and documented by actual hotel operational and financial data.

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