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Maximum Justifiable Investment Analysis Determines Property Valuation

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Abstract

Investors and developers are often faced with the task of determining the worth or value of a real estate entity that presently exists or is proposed for development. This article explains the process for determining the value of a proposed project and, subsequently, the maximum investment dollars the project can cover, while at the same time producing a reasonable return for the investor. A proposed 300-room hotel serves as the real estate entity to be analyzed.

Maximum Justifiable Investment Analysis Determines Property Valuation

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Investors and developers are often faced with the task of determining the worth or value of a real estate entity that presently exists or is proposed for development. This article explains the process for determining the value of a proposed project and, subsequently, the maximum investment dollars the project can cover, while at the same time producing a reasonable return for the investor. A proposed 300-room hotel serves as the real estate entity to be analyzed.

Maximum justifiable investment analysis is used to determine valuation, which is the term applied to methods by which the fair market value of a given property is estimated. Fair market value is, in turn, defined by the *Real Estate Appraisal Terminology* text as follows:

> The highest price in terms of money which a property will bring in a competitive and open market, allowing a reasonable time to find a willing buyer and seller each acting prudently, neither being under abnormal pressure.[1]

Implicit in this definition are the following key points:

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

It should be noted that fair market value does not represent true value, which is one determined only as a result of bargaining between

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two parties. The market value estimated in this article is based upon the projected potential earning power of a property if it were developed and operated as a business.

There are three basic approaches available for performing valuations for real estate:

- **Replacement cost approach:** Fair market value is estimated based on current costs to reproduce the property, less any depreciation.

- **Market data approach:** Fair market value is estimated based on sales prices of similar properties actually purchased in free market conditions.

- **Income approach:** Fair market value is assumed to be the equivalent of the present value of future net cash flows accruing to the benefit of owners.

Replacement Cost Based on Reproduction

The replacement cost approach is based on the assumption that an informed purchaser would pay no more for a property than the cost of replacement. The replacement cost approach 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 industry averages for construction costs. The value of the land is added to the determined reproduction costs and depreciation is then deducted. Depreciation is defined as a loss in value caused by one or more of the following factors:

- **Physical deterioration:** The physical wearing of the property.

- **Functional obsolescence:** The lack of desirability in layout, style, and design, as compared to a new property serving the same functions.

- **Economic obsolescence:** The loss in value from causes outside the property itself.

Various sources of appraisal and valuation literature recommend utilizing the replacement cost approach for new properties, which are not affected by the various forms of depreciation, as well as for unique or specialized improvements such as churches and libraries lacking a comparable market and income potential. Lodging facilities are particularly vulnerable to functional changes, physical deterioration, and uncontrollable factors. In some instances, a hotel can suffer from functional and economic obsolescence before construction is completed. As the building and other improvements age and begin to depreciate, the resulting loss in value becomes more difficult to qualify. Estimating the impact of various forms of obsolescence involves judgmental considerations that are difficult to support; this weakens the credibility of this approach, a main criterion for the rejection of this method.

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Another significant reason for rejecting this approach is that the underlying assumptions in the replacement cost approach method of valuation do not reflect the investment rationale of typical buyers. Hotel, lodging, and resort properties, as all income-producing properties, are 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.

Approach Looks at Fair Market Value

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 another with the same use. This approach estimates market value by comparing the sales price of recent similar transactions with the various attributes of the subject property. Any dissimilarities between the subject and comparable properties are resolved by making appropriate adjustments. These differences may pertain to age, location, construction, physical condition, layout, equipment, size, and/or external economic and market factors.

The reliability of the market data approach depends upon two basic factors:

- availability and verification of comparable sales data, and
- degree of comparability or the extent of adjustment necessary to equalize the differences between the subject and the comparable property.

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

Income Approach Estimates Present Value

The income approach converts anticipated future benefits of property ownership (cash flow) into an estimate of present value. Generally included in this approach is a discounted cash flow procedure. The income approach has been chosen as the preferred technique for valuing commercial properties because it most closely reflects the investment rationale and strategies of a typical buyer. This is particularly applicable to income properties, as most of the data used in this approach have already been adjusted by market factors, thereby reducing the subjective content to a minimum.

In valuing a hotel via the income approach, the following steps need to be undertaken:

- projection of cash flows available for replacement reserve, debt service, and taxes on income before adjustments for the project;
- estimate of a probable debt service repayment schedule for the project;
- selection of a discounting rate—defined as the percentage pretax

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yield a prudent investor would require for a similar type investment; and

• application of a proper discounting procedure.

Cash Flow Should Cover 10 Years

Projection of cash flow available from operations before debt service and taxes on income need to be prepared for the first 10 years of operation of the hotel, 1986 through 1995. Exhibit A illustrates cash flow projections before debt service and taxes on income for a proposed 300-room hotel, based on industry standards. The projections were based on the assumption that 1990 represents a stabilized year of operation for the proposed hotel and, thus, were only adjusted for inflation at a compounded rate of approximately 8 percent per year.

It is estimated that a mortgage rate for this type of investment should be 12 percent. Generally, most major leisure time-oriented investments require a 25 percent equity contribution with a 75 percent mortgage loan. These percentage distributions were also assumed in analyzing the proposed hotel's value. The estimated term of the loan is 25 years.

Projected cash flows for the project have been discounted to the present at a rate of 20 percent, representing the pretax return on equity that a prudent investor would require for similar type investment. Included in this discount rate are considerations based upon the debt-equity ratio and financing terms of the project. Two factors determine the appropriate discounting procedure for valuing the proposed hotel: the investment period and the residual value.

Due to the following factors, the typical period for an investment of this type is 10 years:

• The tax shelter provided by accelerated depreciation is normally exhausted by this time.
• Often, major changes in a facility's market position and/or market sources change past a 10-year period.
• Major equipment replacement decisions are often clustered about this time.

Accordingly, a 10-year period was chosen in valuing the proposed project. This does not imply that the economic life of the facility is limited to 10 years; indeed, it may extend well beyond that period. However, for purposes of analyzing an initial investment by an investor, 10 years is considered a reasonable period after which continued holding should be evaluated.

Residual value represents the amount a hypothetical investment will yield when sold at the end of the investment period. It is assumed the project would be sold for an amount equal to 100 percent of its original value at the end of the 10 years. The resulting valuation under the income approach, including the underlying computations, is $22,338,000, or $74,460 on a per room basis (see Exhibit A).

As illustrated in Exhibit A, a developer or investor could construct a 300-room hotel at a cost of about $74,460 per room or $22.3 million, stated in 1983 dollar amounts. This project would provide the devel-

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Exhibit A

Proposed 300-Room Hotel
Maximum Justifiable Investment

(Expressed in thousands of dollars; adjusted for inflation)

	Present (1983)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Cash flow available for debt service and taxes on income from operations	N/A	$2,000	$2,500	$2,800	$3,200	$3,600	$3,900	$4,200	$4,500	$4,800	$5,200
Equity contribution (X)	-25.00										
Annual debt service (X)	N/A	-9.56	-9.56	-9.56	-9.56	-9.56	-9.56	-9.56	-9.56	-9.56	-9.56
Proceeds from sales (X)	N/A										100.00
Debt retirement (X)	N/A										-65.85
Net cash flows: knowns	-	2,000	2,500	2,800	3,200	3,600	3,900	4,200	4,500	4,800	5,200
unknowns (X)	-25.00	-9.56	-9.56	-9.56	-9.56	-9.56	-9.56	-9.56	-9.56	-9.56	24.59
Present value factors	N/A	.8333	.6944	.5787	.4822	.4019	.3349	.2791	.2325	.1938	.1615
Present values of: knowns	-	1,667	1,736	1,620	1,543	1,447	1,306	1,172	1,047	930	840
unknowns (X)	-25.00	-7.97	-6.64	-5.53	-4.61	-3.84	-3.20	-2.67	-2.22	-1.85	3.97
Total of the present values:											
Sum of the knowns	13,308										
Sum of the unknowns	-59.58x										

Maximum justifiable
investment   x = $22,338,000

Per room   x = $74,460

The comments and assumptions contained in this report are an integral part of these projected statements.
Totals reflect rounding.

oper/investor with a 20 percent return on equity which was assumed to be 25 percent of the project's cost.

It should be emphasized that the cost of debt, the equity participation factor, and the required return on equity are variables that differ greatly by project and have a direct impact on the resulting value of a real estate project. Generally, large lending institutions can provide a developer/investor with guidelines by type of real estate entity for these items.

Investment Becomes Clearly Defined

The prior analysis provides the investor with a clearly defined investment decision. In the example, given the assumed factors, i.e., cash flow, discounting percentage, equity/debt factors, and residual value estimates, the proposed 300-room hotel can be assumed to represent a value of $22,338,000 in 1983 dollars. On a per available room basis, this represents approximately $74,500. If the total development costs of the proposed project exceed $74,500 per unit, the returns on equity would not reach the desired 20 percent level; thus the investment might not be appropriate. If, however, the development (or purchase price for an existing property) costs are less than $74,500 per unit, the desired equity return level would be surpassed and the proposed investment should be strongly considered.

The income approach to valuation is generally the only effective method in outlining maximum justifiable investment; it can be performed by financial analysts, without the need for specific appraisal professionals. While not exact, this approach to valuing income-producing property provides a comprehensive review of many of the investment factors affecting a "real life" circumstance, rather than the use of the often short-sighted capitalization rate or earnings/rent-roll multiple approach. The maximum justifiable investment approach is one used extensively throughout the lodging industry and in other real estate investment ventures and should be considered when investment factors and/or cash flows are critical to the final purchase of an income-producing project.

Footnote

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