

CHAPTER 7. INCOME APPROACH TO VALUE

- 7-1. CAPITALIZATION. The annual net income remaining after payment of expenses is considered to be the principal source of value of the property. Value arises from the right to receive this income stream, and multifamily housing is simply one of several possible investments which may be made for the purpose of producing income, or yield on the investment. The value of real estate then is the present worth of the benefits of ownership as anticipated by those investors, buyers, and sellers who constitute the market. Capitalization is the process of expressing future benefits in dollars and discounting them to present worth at the capitalization rate which is necessary to attract capital to similar investments.
- 7-2. COMPONENTS OF THE CAPITALIZATION RATE. An expectation of profit is the primary motive for purchasing income property. Profit is expressed as an annual rate of investment yield on the portion of investment remaining from year to year. Profit, however, is also residual income in excess of cost. Since observation indicates that the earning power of building improvements usually diminishes and eventually terminates after some period of years, it is necessary to allocate part of the net periodic income to the recapture of wasting purchase capital. The years of earning power of the building improvements are called the economic life of the improvements; this economic life ends whenever the total income from the property does not exceed the land value multiplied by the market rate of return on land. Thus, one component of a capitalization rate is profit. This is called the interest rate, the yield, or the net rate. Another component of the capitalization process is provision for recapture of wasting purchase capital, which is done within the estimated remaining economic life of the building improvements. When this component is expressed as a rate, it is called the recapture rate. The recapture rate is dependent upon the estimated remaining economic life of the improvements.
- 7-3. ESTIMATED ECONOMIC LIFE.
- a. Economic Life. Economic Life is the period over which a property will yield a return on and of investment in building improvements over and above the return due to land. This period can never exceed the physical life of the improvements and generally is shorter than physical life.

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- (7-3) b. Site Influences. Economic Life is a term applying usually to a structure which has utility but which actually relates to the combination of the structure and site. It is defined as that period of time remaining during which the combination of the specific structure and specific site will earn at least enough to pay all expenses and a reasonable return on the land value. Such fair

return is that sum that could be earned were the site devoted to its most productive use, i.e., its most likely use if vacant land. Thus, in order to earn the maximum on the land value as well as upon the cost of original structure, the structure must be so designed as to produce a maximum return upon both land and building originally, and to be amortized (depreciated) fully out of income within the specified period of time designated as its economic life period. Failing in that objective, through obsolescence of structure or of the use itself, economic life may be extended by modernization or conversion to another use, or such cure may be impractical and the structure have no further value.

- c. General Location Influences. Economic life is an estimate. It is the judgment of the probable term of years over which the vicinity and all the physical and economic conditions surrounding the site and its proposed use will produce a return for such use and of the suitability of the structure to such use. Economic life may never exceed the estimated remaining physical life of the structure, for obvious reasons, and it may be less. However, physical life may be extended more readily than economic life since the curing of deterioration, including functional obsolescence, will lie within the property itself while decline or change affecting economic potential may lie to the exterior of the site boundaries, in vicinity and community or in the economy.
- d. Physical-Economic Life. Structures may be designed purposely for short physical life to return a small investment in the structure and to earn taxes and some interest for a structure until the site matures for a higher use. Structures may also be designed deliberately for almost perpetual life as with certain public buildings or others of the "monumental" type. The maximum return is gained from designing the structure to last physically and economically for approximately the same period of time. Assumption must be made as to prudent care of the physical property,

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including maintenance and repair and the replacement of some components. Assumptions must also be made as to the stability of the vicinity, and its ability to continue the flow of income to the property. Both assumptions are termed "estimates" based upon experience, observation and judgment rather than mathematical or scientific rule or calculation.

7-4. OVERALL CAPITALIZATION RATE.

- a. Overall Rate. Sometimes called direct capitalization, the simplest form of capitalization consists of dividing the

annual net income by the overall capitalization rate to derive the value, as follows:

$$\begin{array}{rcl} \text{Net Income} & = & \text{Value} \\ \text{Overall Capitalization Rate} & & \\ \$17,510 & = & \$206,000 \\ .085 & & \end{array}$$

The overall capitalization rate is also called the composite rate. Since the numerator in the equation is income only, it is evident that the composite rate of the denominator must be a combination of several ingredients, which will not only reflect the value of income at yields attractive to a prospective investor, but also will provide for the recapture of wasting purchase capital. The overall rate combines within itself the rate of return for land and also the rate of return plus rate of recapture for the buildings and expresses within itself the relationship between the income from the entire property and the value of the entire property. This kind of capitalization process is responsive to changing market conditions. It is very easy to extract the overall (or composite) rate from a comparable sale, and equally simple to apply this overall capitalization rate to the subject property.

- b. Extracting the Overall Rate. The overall or composite rate indicated by a comparable property selling for \$144,000, with an annual net income of \$11,520, is extracted as follows:

$$\begin{array}{rcl} \text{Sales Price} \times \text{Overall Rate} & = & \text{Net Income} \\ \$144,000 \times \text{Overall Rate} & = & \$11,520 \\ \\ \text{Overall Rate} & = & \frac{\$11,520}{\$144,000} \\ \\ \text{Overall Rate} & = & .08 \end{array}$$

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- c. Applying the Overall Rate. When the subject property has similar attractiveness and safety for an investor as the comparable above, when its remaining economic life is approximately the same, and when financing is available at approximately the same interest rate and term as were available for the previous transaction, then the comparable sale above and other data might result in this appraisal where subject property had net income of \$15,200:

$$\begin{array}{rcl} \$15,200 & = & \text{Value} \\ \hline & & .08 \end{array}$$

$$\begin{aligned} \$15,200 &= \$190,000, \text{ Capitalized Value} \\ &.08 \end{aligned}$$

However, the use of overall capitalization rates from other properties having greatly dissimilar remaining economic lives, or having access to very different mortgage interest rates or terms than will be available to the subject proposed transaction, or where the relationship of land value to sales price is significantly different, etc., cannot be recommended without adequate adjustment of the overall rate to compensate for these differences.

7-5. CASH FLOW CAPITALIZATION RATE.

- a. Cash Flow Method. Investors in real estate determine the value of property, and their actions establish interest and recapture rates. There are many kinds of investors who use various methods of analysis in selecting their investments. One way many buyers test an otherwise acceptable property is by subtracting the annual mortgage payment from the net income. The remainder, called cash flow to equity, is then divided by the desired or required rate of return to equity to determine the amount of equity investment to be offered to purchase the property.

As an example, assume the following:

Net Income	\$ 80,100	
Best Mortgage Terms Available; 7%		
25 years	750,000	
Annual Mtge. Payment, Principal and Interest		63,600
Investor's Required Cash Flow to Equity		11%

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- (7-5) This investor would utilize the most favorable mortgage terms available, whether in existing mortgages or proposed financing. Having determined that a 25 year 7% mortgage for \$750,000 is the best available, he subtracts the annual payments to debt service for that mortgage (\$63,600) from the net income of the property before recapture (\$80,100) to get cash flow to equity (\$16,500). He divides the amount of cash flow (\$16,500) by the desired rate of cash flow to equity (11%) to result in the equity investment (\$150,000). The sum of this equity investment (\$150,000) and available mortgage amount (\$750,000) becomes the price at which the investor will offer to purchase the property (\$900,000) because this is the price at which income from the property is sufficient to pay expenses, to pay total debt service on the mortgage, and to return to the investor the desired cash flow rate (11%) on this equity

investment. The cash flow rate is all yield without recapture on the investors equity investment, and is based on the assumption that the value of the property will at least equal the investment when the mortgage is paid off, so that payment of mortgage principal in the debt service is sufficient provision for recapture.

- b. Extracting Rate of Cash Flow to Equity. Assume the following characteristics concerning a sale of comparable property.

Sales Price	\$150,000
Mortgage Balance Assumed	120,000
Cash Paid	30,000
Net Income	11,700
Annual Debt Service	8,640

The above facts would allow rate of cash flow to equity to be easily extracted, as follows:

Annual debt service (\$8,640) is subtracted from net income (\$11,700) to give cash flow to equity (\$3,060).

Amount of cash flow (\$3,060) is divided by equity investment (\$30,000) to equal rate of cash flow to equity (10.2%).

- c. Applying the Cash Flow Rate. The cash flow rate of return to the equity can be easily utilized to develop an overall capitalization rate. Assume the following facts:

Subject Property Net Income	\$12,010
Comparables Indicate Cash Flow Rate	10.2%
Best Available Mortgage Financing for Subject:	
Loan-Value Ratio	90%
Interest Rate	6.75%
Initial Curtail	1.50%
MIP	.50%
Debt Service Rate	8.75%

The rate of cash flow to equity can be used to develop an overall capitalization rate, as follows:

Debt Service Rate 8.75% x 90% Mortgage	7.875%
Cash Flow to Equity Rate 10.2% x 10% Equity	1.020%
Overall Rate by Cash Flow Method	8.895%

In Section K of FHA Form 2264, net income \$12,010 -- rate 8.895% = \$135,000 Capitalized Value.

- a. Band of Investment Theory. The rate developed is a weighted average of mortgage and equity rates of return which market data disclose as being applicable to comparable properties. The weighting reflects the percentage of total value occupied by each band of investment representing a mortgage or an equity position. As an example, let us assume a situation in which investigation shows that in sales of comparable properties financing was available for a 90% loan at 6% interest and that buyers demand a 10% return to induce them to invest in 10% equities. Interest rate is developed as follows:

Mortgage Rate 6% x 90% Mortgage	= 5.40%
Equity Return Expected 10% x 10% Equity	= 1.00
Interest Rate	6.40%

Where such rates are developed provision must be made for recapture based on the economic life of the project. Assume a 50 year remaining economic life, 2% recapture rate.

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(7-6)	Land as 10% of Total Value 10% x 6.40%	.64%
	Improvements 90% of Total Value 90% x 8.40%	*7.56%
	Overall Rate by Band of Investment	8.20%

*Includes 2% Recapture

- b. Extracting a Band of Investment Rate. In extracting a capitalization rate by the band of investment method, the following steps are used:
- (1) Determine overall capitalization rate.
 - (2) Estimate the portion of overall rate attributable to recapture of building investment.
 - (3) Determine portion of overall rate representing return (interest rate without recapture) on total property, land and building. This interest rate on total property is the same interest rate on total investment, both mortgage and equity.
 - (4) Determine interest rate for equity as a portion of whole investment and convert to rate of return to equity.

As an example, a sale of comparable property is assumed to have the following characteristics:

Sale Price	\$1,000,000
Net Income	94,000

Estimated Remaining Economic Life (Years)	50
Approximate Portion of Value Representing Land	15%
Interest Rate of Mortgage	7%
Mortgage Loan Ratio	80%

Steps are performed for the example above as follows:

- (1) Net income (\$94,000) divided by sale price (1,000,000, = Overall Capitalization Rate (9.4%).

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- (7-6) (2) Building recapture rate (2%) multiplied by portion of value allocated to buildings (85%) = portion of capitalization rate attributable to recapture (1.7%).
- (3) Overall Rate (9.4%) less recapture portion (1.7%) = interest rate on total property land and buildings (7.7%) and on total investment mortgage and equity.
- (4) Interest rate for total investment (7.7%) less the portion representing interest on the mortgage (80% x 7%) = portion representing interest on the equity (20% x E), where E is rate of return on equity.

$$\begin{aligned}
 7.7\% - (80\% \times 7\%) &= 20\% \times E \\
 7.7\% - 5.6\% &= 20\% \times E \\
 2.1\% &= E \\
 20\% &
 \end{aligned}$$

E = 10.5% (Rate of Return on Equity,

- c. Applying the Band of Investment Rate. The interest rate of return to the equity can be utilized to develop an overall capitalization rate in the following steps:

- (1) Various comparable sales are analyzed as above to determine interest rates to equity, and the indicated market interest rate to equity is selected. If analysis of various rates of return to equity extracted from several market transactions indicates that the thinner equities get rates of return to equity which are higher, it is appropriate to make an adjustment for this factor. Care should be used in making this adjustment in that it should be made only in amounts as indicated by market transactions.
- (2) The interest rate of the best financing available to the subject is determined. For this purpose, MIP is considered part of mortgage interest.
- (3) The interest rate of the mortgage is multiplied by the mortgage portion of the total investment. The

interest rate for the equity is multiplied by the portion of total investment represented by the equity. These two products are added together, to result in an

- (7-6) interest rate (without recapture) for the entire investment. This is also the interest rate for the entire property, land and buildings to which recapture must be added.
- (4) Determine the economic life and the recapture rate of the building investment. Multiply the building recapture rate by the percentage which indicates the portion of total value represented by buildings.
- (5) The product will be that part of an overall capitalization rate necessary for recapture of building investment.
- (6) Add the component for recapture from (4) above to the interest rate for the entire property from (3) above. The sum is the overall capitalization rate by the band of investment method. When income is divided by this overall rate, the result will be the value of the the property. For example, assume the subject property has the following characteristics:

Net Income	\$99,000
Part of Value Allocated to Land	10%
Mtg. Available 6.75% Int. .5% MIP	7.25%
Loan Ratio Available	90%
Rate of Return to Equity, extracted from Comparable Sales	10.5%
Estimated Remaining Economic Life	50 years

Steps are performed for the example above as follows:

- (1) Comparable sales have had return to equity extracted by the band of investment method. Assume that the indicated interest rate for the subject equity is 10.5%.
- (2) Interest rate (and MIP, if any) of the best financing available to subject transaction is determined to be 6/75% plus .5% MIP, or 7.25%.
- (3) Mortgage Rate 7.25% x 90% Mtg. = 6.525%
Equity Return 10.5% x 10% Equity = 1.05 %
- | | |
|---------------|--------|
| Interest Rate | 7.575% |
|---------------|--------|

This is the interest rate for the total investment and also interest rate for entire property, land and

buildings to which recapture must be added.

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- (4) For 50 years remaining economic life, the building recapture rate is 2%. Recapture rate (2%) x part of value allocated to buildings (90%) = that part of the overall capitalization rate necessary for recapture of building investment (1.8%).

Interest Rate for Property 7.575%
Recapture Provision 1.8 %
Overall Rate by Band of Investment 9.375%

- (5) In Section K of FHA Form 2264, the assumed income (99,000) is divided by the capitalization rate (9.375%) to result in a Capitalized Value of \$1,056,000.

7-7. VALIDITY OF THE SEVERAL METHODS OF CAPITALIZATION. Previous paragraphs have explored and illustrated three means by which an overall capitalization rate can be extracted from data and applied in the capitalization approach to value insofar as HUD processing is concerned. Other methods used by the profession in the capitalization approach, such as the Inwood, Sinking Fund, Declining Annuity and Elwood methods, while they will not be used by HUD-FHA, are equally valid within the limitations and assumptions inherent in each. Capitalization methods, however, are procedural mathematical tools which aid in converting a known income stream into value. However, these tools are not self-validating. Each method of capitalization can produce the correct value only when the correct capitalization rate is used. The correct capitalization rate is that which can be extracted from market transactions of properties comparable to the subject property by extraction methods which are appropriate to the particular capitalization method to be used.

When an extracted capitalization rate is applied to the income of the subject property by the capitalization method first planned, it will produce a value comparable with and indicated by the market transactions used to produce the rate. If, then, a second method of capitalization is contemplated, and from the same market transactions another capitalization rate is extracted by extraction methods which are appropriate to the second capitalization method to be used, it may be numerically different from the rate first extracted. However, when the second capitalization rate is applied to the income of the subject property by the steps required by the second capitalization method, it also will produce a value compatible with that

(7-7) indicated by the market transactions used to produce the rate. The value will be the same. Thus, a third, fourth and fifth method of capitalization might be used, each with its own appropriate method of extracting a capitalization rate from the comparable sales transactions, and they will all produce similar values providing significant differences in property and mortgage characteristics have been accounted for in the rate selection. Of the three methods explained in this Chapter, the Cash Flow method is generally most responsive to fluctuating mortgage rates and terms. For this reason it more nearly reflects the thinking of many investors when comparables reflecting similar mortgage terms are not available.