



### Income Capitalization

Income capitalization is the process of converting a property's income into a value. This can be accomplished through two applications, yield and direct capitalization. Yield capitalization is used to convert future benefits into a present value. This is a complex application based on anticipated market conditions and utilizes discounted cash flow analysis. Direct capitalization is used to convert one year's income into a value. This application is the most practical for everyday use since it can be readily applied for commercial and investment (income) properties that have stabilized occupancy.

### Direct Capitalization

Direct capitalization uses income rates and income factors to convert income to value. The most widely used of these are the overall capitalization (cap) rate, the gross income multiplier and the net income multiplier.

The formula to convert income into a value using the *overall cap rate* ( $R_0$ ) is as follows:

$$\text{Net Operating Income} / R_0 = \text{Value}$$

As an example, say Dean Real Estate is hired by a client to sell an income property that is fully occupied. After a thorough analysis of the property and market, the net operating income (NOI) is determined to be \$127,500 and the  $R_0$  is estimated to be 8.50%. Therefore, the value of the property is calculated as follows:

$$\$127,500 / .085 = \$1,500,000$$

The formulas to convert income into a value using the *gross income multiplier* (GIM) and the *net income multiplier* (NIM) are as follows:

$$\text{Gross Income} \times \text{GIM} = \text{Value}$$

$$\text{Net Operating Income} \times \text{NIM} = \text{Value}$$

Say a property's gross income is \$187,500 and it's NOI is \$125,000. After a thorough analysis of the market, the GIM is estimated to be 8.0 and the NIM is estimated to be 12.0. Therefore, the value of the property is calculated as follows:

$$\$187,500 \times 8.0 = \$1,500,000$$

$$\$125,000 \times 12.0 = \$1,500,000$$

### Estimating An Overall Cap Rate

There are several techniques available to estimate the overall cap rate. The three most common and practical ones are summarized below.

**Extraction From Sales:** Say Dean Real Estate sells a 22 unit apartment building for a client for \$1,800,000. Since Dean Real Estate knows the NOI is \$153,000, an overall cap rate can be extracted from the sale using the following formula:

$$\text{NOI} / \text{Price} = R_0$$

And thus the overall cap rate is estimated as follows:

$$\$153,000 / \$1,800,000 = 0.85 \text{ or } 8.50\%$$

**Band Of Investment - Mortgage & Equity:** This technique considers the premise that most commercial and investment properties are purchased with equity and debt capital and thus the overall cap rate must satisfy the return requirements for both the debt and equity positions. The formula is as follows:

$$(M \times R_M) + (E \times R_E) = R_0$$

Where, M is the loan-to-value ratio (known as LTV),  $R_M$  is the mortgage constant, E is the equity-to-value ratio (essentially the down-payment portion) and  $R_E$  is the equity dividend rate (cash on cash rate).

Say market commercial loan terms are 80% LTV, 7.0% interest rate, 25 year amortization with monthly payments, and thus the  $R_M$  calculates to 8.48%. Also, the  $R_E$  is determined to be 10.0%. The overall cap rate is estimated as follows:

$$(.80 \times 0.0848) + (.20 \times .10) = .0878 \text{ or } 8.80\%$$

**Debt Coverage Formula:** This technique is generally used by lenders and is based on the premise that the pre-tax cash flow is the primary criteria used by buyers and sellers. The formula is as follows:

$$\text{DCR} \times R_M \times M = R_0$$

The DCR (debt coverage ratio) is simply the ratio of NOI to annual debt service (ADS). For instance, say the NOI is \$127,500 and the ADS is \$102,000, the DCR is then 1.25. Using the  $R_M$  and M from above, the overall cap rate is estimated as follows:

$$1.25 \times 0.0848 \times .80 = .0848 \text{ or } 8.50\%$$

### Estimating Income Multipliers

The GIM and NIM are very helpful in determining accurate values for commercial and investment properties. The formulas for each are as follows:

$$\text{Price} / \text{Gross Income} = \text{GIM} \quad \text{Price} / \text{NOI} = \text{NIM}$$

Say an income-producing office building recently sold for \$1,200,000 and the gross income at the time of sale was \$150,000. The GIM is:  $\$1,200,000 / \$150,000 = 8.0$

Say this same office building had a NOI of \$100,000 at the time of sale. The NIM is:  $\$1,200,000 / \$100,000 = 12.0$

### Conclusion

Direct capitalization, when applied properly, provides an accurate value for many types of commercial and investment properties. However, market knowledge and a skilled analysis are crucial to its reliability.



Specializing in commercial & investment brokerage with a focus on Metro Boston/South Shore MA and Southeastern MA. To discuss your real estate needs, please call 781.982.2929 or 508.824.7946. You may also visit our website at [www.DeanRealEstate.com](http://www.DeanRealEstate.com).

All right reserved. Reproduction of this publication is prohibited.