

## THE VALUATION OF INCOME PROPERTIES USA

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## **1. INTRODUCTION**

The major objective of real estate investors is to maximize their wealth, while balancing the investment risks. In deciding whether to buy or dispose of a property, investors use a wide variety of analytical approaches, ranging from relatively simple techniques, to complex after-tax cash flow analysis.

This article will discuss the basic or traditional approaches used by investors, appraisers, and realtors for determining the value for income producing real estate.

The financial statements, particularly the Income and Expense Statement, are used to determine the value of revenue properties. The statements presented by the vendor are often a blend of facts and fantasy. Often the Income Statement is manipulated in order to justify the selling price based on the prevailing Cap Rates. In order to make a reasonable estimate of value, the Financial Statements often have to be redone by including items that have been omitted, and by adjusting any figures that appear to be out incorrect compared to comparable properties. To do this requires an understanding of Income and Expense statements, familiarity with the operating costs for different types of properties, and the ability to be a financial sleuth; flushing out the misleading information and sorting out the facts from fiction.

Successful commercial realtors and investors are skilled at analyzing and restructuring financial statements. The later part of the article deals with the analysis of financial statements.

We will start by first reviewing the various approaches used to value income producing real estate.

## **2. APPRAISING INCOME PRODUCING REAL ESTATE**

An appraisal is an estimate of value; as of a specific date, supported by the relevant data based upon the analysis of factors influencing value. Of interest to investors is the market value, which is defined as the highest price that 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.

Appraisers traditionally use three approaches to determine market value: (1) the market approach; (2) the cost approach; and (3) the income approach. There are a number of basic economic concepts or assumptions which underlie the appraisal process. They are:

### **Principle of Substitution**

If two properties have the same utility, or benefits from the buyer's perspective, the property with the lowest price will sell first. As an example, a buyer will not pay more for an existing property than the cost to acquire a site and construct an improvement of equal utility.

### **Future Benefits**

The estimate of value should be based on a prediction of the future, not past performance. While past history may be useful in predicting the future, changes may be taking place that makes projections based on past history unreliable. This idea is especially important when the income approach to value is being used, as estimates of future cash flows influence the market value.

## **Concepts of Change, Regression, and Progression**

Change is constant and inevitable. Changes and trends influence the value of a property. The Concept of Regression states that the value of a superior property in a neighborhood will be affected negatively by surrounding inferior properties. The Concept of Progression states that an inferior property will benefit if it is in a superior neighborhood. Investors often use the Concept of Change by identifying early a neighborhood which is improving, and then purchasing at bargain prices.

## **Competition and Profit**

In free markets, unusually high profits cannot continue forever. When a property market experiences high profits, it quickly attracts competition, which increases the supply. Eventually the profits decline or losses occur. This situation often occurs in the development industry, where the first developers in a rising market quickly sells out the project at a handsome profit. This is recognized by other developers who are attracted to the high profits, land prices are bid up, the developments become more costly and less profitable and eventually losses occur.

Another example is where a shopping centre is able to charge high rents because of a lack of competition in the area. Eventually another shopping centre developer will be attracted to the area, and the shopping centre's profit will start to decline.

## **Land Residual**

In developing real estate, land can be seen as playing a passive role, and the land can be viewed as having a Residual Value. As an example, the value of a piece of land to a developer is determined by calculating the market value of the completed project, subtracting all costs, and an appropriate profit given the riskiness of the development, to determine how much to pay for the land. i.e., the land cost is a residual.

## **Recent**

When appraising properties using comparables it is important that the comparable is "Recent," which means that since the sale of the comparable, there has been no changes in the market place which influences the value. This does not mean that there have been no changes in the market place, but that the changes have not affected the property value. As an example, interest rate may fall but house prices remain unchanged.

## **Conformity**

Experience has shown that maximum value tends to occur when there is a reasonable degree of physical and economic conformity in the area where the property is located. If a large office tower is located amongst small retail stores, the value of the building will be less than if it was positioned in an area where there are a number of similar office towers.

## **Similarity**

Determining the value of an income property involves using comparables which must be "similar" to the subject property in terms of age, size, operating costs, financial arrangements, lease terms, general location, economic environment, expected capital appreciation or depreciation etc.

Finding similar properties that have sold recently is a major challenge. Firstly, there are relatively few sales of commercial properties; secondly, getting all the relevant information such as the terms of the leases or the Income and Expense Statement is difficult, and thirdly, it is very difficult to find similar properties. While

you may be able to locate properties which are similar in age, building size, and neighborhoods, but they may not be at all similar in terms of the leases, quality of the tenants, and financing.

Despite these difficulties, market values have to be determined by making sound judgments as to the value by making adjustments to the comparables and the subject property; and by the application of common sense and experience.

### **3. THE THREE APPROACHES TO APPRAISAL**

The following is a review of the three approaches used by appraisers to determine the value of a property

#### **1. Cost Approach**

The Cost approach relies on the Principle of Substitution, i.e., buyers will not pay more for an existing building than an amount equal to the cost of a replacement.

#### **2. Market Data or Comparable Approach**

This approach also uses the idea of substitution, which states that a property is worth approximately the same as another property that offers similar utility or benefits.

#### **3. The Income Approach**

The Income Approach assumes that the value of the property is based on the future cash flow that the property is expected to generate.

This article focuses on the Income and Comparable approaches for determining the value of income producing properties. The Cost Approach is not generally applicable to the valuation of income properties.

#### **4. INCOME AND EXPENSE STATEMENTS**

The income for a revenue property can be broken into five distinct levels, which are shown in Table 1 below, followed by a description of each level of income.

**TABLE 1**  
**REVENUE PROPERTY**  
**TYPICAL INCOME AND EXPENSE STATEMENT**

1. POTENTIAL GROSS INCOME (PGI)	\$ 275,000
less: Vacancy Allowance (2%)	5,500
Credit Loss Allowance (0.5%)	1,375
plus: Other Income (laundry, etc.)	<u>2,515</u>
2. EFFECTIVE GROSS INCOME (EGI)	<u>\$ 270,640</u>
less: OPERATING EXPENSES	
Property management (4% of EGI)	10,826
Utilities, light and heat	26,000
Property taxes	18,000
Maintenance	7,000
Other expenses	15,000
<b>Note:</b> Mortgage payments, depreciation, and capital expenditures are excluded.	
Total Operating Expenses	<u>\$ 76,826</u>
3. NET OPERATING INCOME (NOI)	\$ 193,814
less: Debt Service (P + i)	<u>160,000</u>
4. CASH FLOW BEFORE TAXES	33,814
less: INCOME TAXES	<u>9,100</u>
5. CASH FLOW AFTER TAX	\$ 24,714

#### **Potential Gross Income (PGI)**

The Potential Gross Income, which is sometimes called the "Scheduled Rental Income" is the total rent or income that would be generated if the building was fully rented at the prevailing market rates. If a shopping centre had 100,000 square feet of rental space, and the lease rate was \$20 p.s.f., the Potential Gross Income would be \$20 p.s.f. x 100,000 sq.ft., i.e. \$2,000,000 per year.

## **Vacancy and Credit Loss Allowance**

A Vacancy Allowance is a provision for vacancies that depends in part on the general rental market conditions, the ability of the property manager, and the rent levels. If the manager is aggressive and sets high rents, then the chances of a vacancy are higher due to turnovers, than if the rents are set at more reasonable levels. If the building is continually full, with no vacancies, this may be an indication that the rents are too low, and that there may be an opportunity to increase the rents and hence the value of the building.

The Credit Loss Allowance is a provision for a likely loss of income on rented units or space caused by tenants failing to pay their rent.

## **Other Income**

In addition to generating rent, buildings may generate a variety of miscellaneous incomes that are called "Other Income". Laundry, parking, vending machine revenues and sign rentals are examples.

## **Effective Gross Income (EGI)**

The Effective Gross Income is the income after deducting the Vacancy and Credit Loss Allowances from the Potential Gross Income.

Care has to be taken when discussing gross incomes to identify whether the figures being quoted are for the Potential or Effective Gross Income

## **Operating Expenses (OE)**

Operating Expenses are direct expenses involved in running the building and may include a maintenance or equipment replacement reserve, which is a non-cash provision for future expenditure for major repairs and equipment replacement. Generally, the reserves for maintenance and replacements are not shown on the Vendor's Income and Expenses Statement but often buyers and financial lenders add a replacement reserve.

Operating expenses are numerous and include repairs and maintenance, utilities, property taxes, wages and benefits, property management, insurance, etc. In the case of rental apartment buildings, the operating costs may run between 35% to 45% or more of the effective gross income, depending on the age of the building, quality of the insulation, type of heating system, local weather conditions etc.

There are three major items, which may appear on the Income and Expense statement, which are deleted for the purpose of establishing the Net Operating Income. They are:

### **1. Mortgage payments**

Mortgage payments or mortgage interest payments are not included in the operating expenses because interest expenses reflect a financial, not an operating decision. In determining the Net Operating Income, we are interested in seeing how much income can be generated by the property. A revenue property may show a healthy net operating income, but because it is overburdened by excessive financing, may show an overall negative cash flow. The reason for the negative cash flow or operating loss is due to the financing, not the operating revenues and expenses.

### **2. Depreciation Claims**

Depreciation which is a non-cash allowance for expensing capital items such as the building, elevators, etc., is an arbitrary figure. Depreciation often appears as an expense on financial statements, and must be deleted from the operating expenses when valuing an income property.

### **3. Capital expenditures and extraordinary or unusual non-recurring expenses**

Expenditures such as replacing the appliances, carpets, or major maintenance such as roof repairs may be included in the Vendor's financial statements, but are deleted when calculating the Net Operating Income when using a Cap Rate to determine the value of a property.

For a variety of reasons, vendor's financial statements often include expense items which are irrelevant to the operation of the building, such as directors' fees, travel expenses, or charitable donations. Clearly these are not related to the operation of the building and must be deleted.

### **Net Operating Income (NOI)**

The Net Operating Income is probably the mostly widely used indicator of the building's financial performance, and is frequently used for determining the value of the property.

The Net Operating Income is the cash remaining after deducting the Operating Expenses from the Effective Gross Income. There are several items that often appear on financial statements that must be deleted before calculating the Net Operating Income (NOI).

1. Debt service, i.e., principal and interest payments are ignored because the Net Operating Income reflects the earning capacity of the property exclusive of financing.
2. Depreciation allowances or any other purely bookkeeping deductions are ignored.
3. Capital expenditures or non recurring expenses that provide long term benefits such as replacing appliances or the roof

### **Debt Service (DS)**

Debt Service refers to the annual or monthly mortgage payments of principal and interest.

### **Before Tax Cash Flow (BTCF)**

The Cash Flow before Tax, which is sometimes called the "Spendable" income, is the annual amount that flows to the owner, before the income taxes are paid.

### **After Tax Cash Flow (ATCF)**

The After Tax Cash Flow represents the annual cash that the owner earns after paying income taxes.

## 5. TRADITIONAL FINANCIAL MEASURES

Investors use a wide variety of financial measures to determine how much they should pay for the property. This section will review and explain the traditional financial measures used for evaluating income properties.

In order to evaluate real estate investments, a number of financial measures are used - each offering advantages and disadvantages and used to varying degrees by investors. Each investor tends to favour a particular approach. Some favoring simple measures or "rules of thumb," and others favoring the more complex measures such as the "Net Present Value" or "Discounted Cash Flow" approach. In addition, each investor will explicitly or implicitly compare real estate opportunities to other non-real estate investment opportunities such as stocks and bonds, as well as compare alternate real estate investment opportunities.

In selling commercial real estate, the salesperson should recognize that the approach used to analyze a real estate opportunity is unique to each individual investor and presentations should be tailored to the information needs of the investor.

The purpose of financial measures is to present a summary or an index or ratio so that the investment opportunity can be compared with other investment opportunities and the financial rewards and risks clearly identified.

The reality of a real estate investment is extremely complex, involving many legal and financial relationships, and estimates and projections of future conditions. This detail must be summarized in order to facilitate comparison of investment opportunities prior to making investment decisions.

The method used to calculate such summaries is to make a comparison of the benefits and the costs of the investment. Thus each index is some form of a ratio of benefits to cost:

$$\text{Yield} = \frac{\text{Benefits}}{\text{Costs}}$$

The many different indices used in real estate investment analysis result from using different definitions of costs and benefits.

The purpose of this section is to present the methods of calculations of yield measures and to examine what information they do, and more importantly, do not provide. As a general comment, the use of mathematical measures or yields often gives a greater sense of accuracy and certainty than can ever be warranted in the real estate investment context. An excessive reliance on such measures, thereby ignoring many of the market risks, trends and uncertainties that would be identified in a comprehensive and balanced investment feasibility study, is perhaps the greatest single short-coming of real estate investment analysis.

In the development and utilization of various mathematical ratios as measures of the estimated potential yield on a real estate investment, one is constantly compelled to trade off simplicity for detail. Quick and easily understood measures provide relatively little information, while highly informative measures are complex and more time consuming. Consequently, there is no single "correct" measure of yield. Rather, the measure appropriate to the circumstances must be utilized and the client must be made aware of the limitations of the measure used.

Further, one must always be conscious of the fact that all yield measures are constructed by mathematical manipulation of estimated factors (rents, expenses, taxes, etc.). Thus, regardless of the sophistication of the calculation of investment yield ratios; they still utilize estimates from the feasibility study. Consequently, an emphasis on market analysis is fundamental to investment analysis. When estimating investment yields, one

is well advised to remember a fundamental rule that applies to the use of all formulas - the quality of ratios presented cannot be greater than the quality of information used to calculate the ratios (i.e., garbage in means garbage out). Real estate investment analysis is not simply the calculation of ratios. The use and calculation of yield ratios is merely a subsidiary component of the process of estimating which of several courses of action will best protect the investor's interests.

In discussing the financial measures the following example will be used to illustrate the calculations.

**EXAMPLE 1 – GEORGIAN APARTMENTS**  
Annual Income and Expense Statement

POTENTIAL GROSS INCOME	\$ 350,000
less: Vacancy Allowance (2%)	7,000
Credit Loss Allowance (1%)	3,500
plus: Parking Income	7,500
 EFFECTIVE GROSS INCOME	 \$ 347,000
 OPERATING EXPENSES	
Total Operating Expenses	 <u>107,570</u>
NET OPERATING INCOME	 \$ 239,430

Sale price: \$3,420,000 (including acquisition costs)

Mortgage: \$1,539,000

Debt Service: \$160,000 (Principal and interest) per year

**Potential Gross Income Multiplier (PGIM)**

Alternate name: Potential Gross Rent Multiplier

The Potential Gross Income Multiplier (PGIM) is expressed as:

$$\text{Potential Gross Income Multiplier (PGIM)} = \frac{\text{Market (MV)}}{\text{Potential Gross Income (PGI)}}$$

$$\text{PGIM} = \frac{\text{MV}}{\text{PGI}}$$

Using the above example:

$$\text{PGIM} = \frac{\text{MV}}{\text{PGI}}$$

$$= \frac{3,420,000}{350,000}$$

$$\text{PGIM} = 9.77$$

Alternatively, if the Potential Gross Income Multiplier can be established from comparables, we can calculate the market value. For example, if the Potential Gross Income Multiplier for comparable revenue properties is 9, and the Potential Gross Income for the subject property is \$135,000, the market value can be calculated as follows:

$$GIM = \frac{MV}{EGI} \quad \text{or} \quad MV = GIM \times EGI$$

$$MV = 9 \times \$135,000$$

### **Effective Gross Income Multiplier (EGIM)**

Alternate name: Effective Gross Rent Multiplier

The Effective Gross Income Multiplier (EGIM) is expressed as:

$$EGIM = \frac{\text{Market (MV)}}{\text{Effective Gross Income (EGI)}}$$

$$EGIM = \frac{MV}{EGI}$$

The market value or sale price should include any costs associated with the sale such as the property transfer tax, legal costs, mortgage brokerage fees etc., since these represent part of the initial investment.

Using the example:

$$\begin{aligned} EGIM &= \frac{MV}{EGI} \\ &= \frac{3,420,000}{347,000} \end{aligned}$$

$$EGIM = 9.86$$

Alternatively, if the Effective Gross Income Multiplier can be established from comparables, we can calculate the market value. For example, if the Effective Gross Income Multiplier for comparable revenue properties is 10, and the Potential Gross Income for the subject property is \$135,000, the market value can be calculated as follows:

$$\begin{aligned} GIM &= \frac{MV}{EGI} \quad \text{or} \quad MV = GIM \times EGI \\ & MV = 10 \times \$135,000 \\ & = \$ 1,350,000 \end{aligned}$$

**Note:** In calculating the Gross Income Multiplier (GIM), realtors and investors may use either the Potential Gross Income or the Effective Gross Income, and you always have to ask how the Gross Income Multiplier has been calculated. In particular, ask whether a Vacancy and Credit Loss Allowance has been included in calculating the Gross Income Multiplier. Unfortunately, there is no consistency in the industry ,and the Potential or Effective Gross Income may be used in calculating the Gross Income Multiplier. The preferred method is to use the Effective Gross Income, since it reflects the vacancies and credit loss allowances.

## **Net Income Multiplier (NIM)**

The Net Income Multiplier is expressed as:

$$\text{Net Income Multiplier (NIM)} = \frac{\text{Market Value}}{\text{Net Operating Income (NOI)}}$$

$$\text{i.e. NIM} = \frac{\text{MV}}{\text{NOI}}$$

Using the example:

$$\text{NIM} = \frac{\text{MV}}{\text{NOI}}$$

$$\text{NIM} = \frac{3,420,000}{239,430}$$

$$= 14.28$$

If the Net Income Multiplier is known from comparables, the market values can be determined by:

$$\text{MV} = \text{NOI} \times \text{NIM}$$

As an example, if the Net Operating Income (NOI) for a revenue property is \$180,000, and the Net Income Multiplier (NIM) based on comparables is 7, the market value can be calculated as follows:

$$\begin{aligned}\text{MV} &= \text{NOI} \times \text{NIM} \\ &= 180,000 \times 7 \\ &= \$1,260,000\end{aligned}$$

## **Capitalization Rate (Cap Rate)**

The Cap Rate is calculated as follows:

$$\text{Cap Rate} = \frac{\text{Net Operating Income}}{\text{Market Value}} \times \frac{100}{1}$$

$$\text{Cap Rate} = \frac{\text{NOI}}{\text{MV}} \times \frac{100}{1}$$

Using the example:

$$\begin{aligned}\text{Cap Rate} &= \frac{\text{NOI}}{\text{MV}} \times \frac{100}{1} \\ &= \frac{239,430}{\$3,420,000} \times \frac{100}{1} \\ &= 7\%\end{aligned}$$

The Cap Rate of 7% represents the annual return before mortgage payments and income taxes on the total investment of \$3,420,000.

Alternatively, if the Cap Rate can be established from comparables, we can determine the likely selling price. For example, if the Cap Rate is 7.5%, based on comparables, and the Net Operating Income for an apartment is \$105,000, the potential selling price can be calculated as follows:

$$\begin{aligned} MV &= \frac{\text{NOI}}{\text{Cap Rate}} \times \frac{100}{1} \\ &= \frac{105,000}{7.5} \times \frac{100}{1} \\ &= \$1,400,000 \end{aligned}$$

### **Relationship between the Cap Rate and the Net Income Multiplier**

The Net Income Multiplier is the inverse of the Cap Rate

$$\begin{aligned} \text{NIM} &= \frac{1}{\text{Cap Rate}} \times \frac{100}{1} \\ \text{or Cap Rate} &= \frac{1}{\text{NIM}} \times \frac{100}{1} \end{aligned}$$

As an example, if the NIM is 11, the Cap Rate is:

$$\begin{aligned} \text{Cap Rate} &= \frac{1}{\text{NIM}} \times \frac{100}{1} \\ \text{Cap Rate} &= \frac{1}{11} \times \frac{100}{1} \\ &= 9.09 \% \end{aligned}$$

Both the Cap Rate and its counterpart the Net Income Multiplier are used in the real estate industry but in recent times the Cap Rate has become the more popular measure. Regardless of which measure is used, they both produce the same estimate market value.

### **Using the Financial Measures**

The financial measures such as the Gross and Net Income Multipliers, and the Cap Rate are simple ratios, which by themselves have no value. They are only useful when compared against comparable properties, which are similar in terms of age, income stream, size, financing, legal structure, general condition, etc., and have sold recently.

The financial measures such as the Cap Rate, and the Multipliers, i.e., the Gross and Net Income multipliers are used to determine:

- a. how much to pay for a property
- b. the likely selling price

As an example, you are considering buying an older duplex property which has an Effective Gross Income of \$29,000 per year. Your analysis of comparable properties suggests that the Effective Gross Income Multiplier is around 11. The market value would be:

$$\begin{aligned} MV &= \text{Effective Gross Income Multiplier (EGIM)} \times \text{Effective Gross Income (EGI)} \\ &= 11 \times \$29,000 \\ &= \$319,000 \end{aligned}$$

### **Finding Gross and Net Income Multipliers and Cap Rates**

One of the most difficult and perplexing problems for newcomers to commercial real estate is finding current Gross and Net Income Multipliers, and the Cap Rates. Determining the value of an income property generally involves establishing either the Gross or Net Income Multipliers, or the Cap Rate from comparables.

There are a number of difficulties:

- a. Finding comparables and market information

Information relating to a sale of a commercial property is often confidential. While the sale price can usually be determined, the Income and Expense Statement, Net Operating Income, etc. is often not available, making it difficult to calculate the financial measures.

- b. Discovering the underlying motives behind the purchase and adjustments that may have been made by the purchasers.

The financial measures are simply ratios that have been derived from the purchase price and the income and expenses, and reflect the results of the attitudes and the negotiations between the buyer and the seller, the economic conditions etc. In some instances, the purchasers may be strongly motivated by income tax considerations. Other times the motivation may be to move money into the United States by overseas investors.

Often purchasers make adjustments to compensate for particular circumstances relating to the particular property. As an example, if a purchaser estimates that there is to be \$150,000 to be spent immediately on major repairs, then the \$150,000 will be deducted from the purchase price. If the building has an assumable first mortgage, which is well below the current interest rate, the purchaser may pay more for the property than for a comparable, which requires financing at the current interest rate.

If you unaware of special buying or selling motives, or that the purchaser has made adjustments to the price because of special circumstances, such as the requirement for major repairs, or because of

favorable or unfavorable existing financing, then the calculation of the financial measures will be incorrect. This may lead to misleading estimates of market value for the subject property.

Later on we will discuss a variety of special circumstances that you should be aware of when trying to determine the Gross Income Multipliers, Net Income Multiplier, and the Cap Rate.

On the surface, the calculation of Cap Rates seems a relatively simple process, but it is fraught with difficulty and uncertainty, and requires a lot of digging for information, questioning, and being alert to special circumstances that may distort the answers.

There is a tendency to automatically accept Cap Rates given by real estate agents, appraisers, etc. without verifying the figures. Establishing the market value for income properties requires that you do a lot of homework, and work diligently at developing accurate financial measures which truly reflect the underlying activities behind the sale, and that the properties being used as comparables are truly comparables.

c. The number of comparables is often limited

Finding comparables for a residential property is relatively easy. There are usually plenty of recent house sales and an abundance of comparables or near comparables. In contrast, there are relatively few commercial sales and finding comparables is very difficult because there may not be many comparables available and obtaining the information such as the income and expenses may be difficult.

As an example, finding comparables for a 5,000 square foot, 10-year-old suburban retail complex, which has five tenants with different lease renewal dates and is situated in a poor retail location. There is unlikely to be a direct comparable available which has sold recently. The approach in this situation, is try to find some sales that are at least close to this situation and then make adjustments to try and take into account the specific differences such as the timing of the lease renewals, location factors, age, financing, etc.

### **Advantages and disadvantages of the Gross and Net Income Multipliers, and the Cap Rate**

The advantages are:

1. Relatively simple measures, easy to calculate and explain.
2. They are reasonable predictors of value provided they are used by buyers and sellers. If not, the results may be incorrect.
3. At the preliminary stages they provide an indication as to the likely selling price or whether the property is under or overpriced, and hence are valuable in identifying whether a particular property is worth further investigation and a more extensive analysis.

Disadvantages:

The Gross Income Multiplier ignores:

- Operating Costs
- Capital appreciation or depreciation, i.e., increasing or decreasing property values
- Financing, and the impact of financial leverage on market value

- Principal and interest payments
- Income taxes
- Changing cash flows. As an example, the Effective Gross Income may be as follows:

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
Effective Gross Income	\$65,000	\$68,000	\$75,000

The Gross Income Multiplier does not account for changing future incomes as shown in the example, nor does it take into account future major expenditures such as replacing the roof, appliances, etc.

The Gross Income Multiplier is most commonly used when the operating costs are unknown or suspect. With small residential revenue properties, the owner often does a lot of the repairs, the accounting records are inaccurate and some of the expenses may be manipulated to reduce income taxes. The financial statements, if they are available, may be inaccurate. However, the rents are known or can quickly be verified, therefore it is common practice to use the Gross Income Multiplier for valuing small revenue properties such as duplexes and triplexes.

#### Disadvantages - Net Income Multiplier and the Cap Rate

The Net Income Multiplier and the Cap Rate suffers from the same faults as the Gross Income Multipliers but does take into account the operating expenses, but ignores future capital expenditures, changing income and expenses over time, financing, capital appreciation or depreciation, income taxes, etc.

The Cap Rate is probably the most commonly used measure for evaluating real estate. A great deal of care must be taken in using Cap Rates. Inaccurate information or unusual circumstances can result in incorrect estimates of value using the Net Operating Income Multiplier or the Cap Rate approach to establishing value.

#### **Financial Measures which take into account the impact of Financing**

Financing plays an important part in real estate investing and influences the financial returns. The Cap Rate ignores financing and provides an overall return on the purchase price based on the Net Operating Income and the purchase price.

Some investors are more interested in the return on their invested capital, i.e., their equity in the property. The financial measure which reflects financing is the "Return on Equity (ROE)". Also called "Cash on Cash" or "Equity Dividend Rate (EDR)".

$$\text{Return on Equity (ROE)} = \frac{\text{Net Operating Income (NOI)} - \text{Debt Service (DS)}}{\text{Equity (E)}} \times \frac{100}{1}$$

Also called "Equity Dividend Rate (EDR)" or "Cash on Cash"

where the Equity = Purchase Price - Mortgage

$$\text{ROE} = \frac{(\text{NOI} - \text{DS})}{\text{E}} \times \frac{100}{1}$$

Using the previous example where

NOI = \$239,430

DS = \$160,000 (Principal and Interest)

Sale Price = \$3,420,000

Mortgage = \$1,539,000

Return on Equity is calculated as follows:

$$\text{ROE} = \frac{(\text{NOI} - \text{DS})}{\text{Equity}} \times \frac{100}{1}$$

$$\begin{aligned}\text{ROE} &= \frac{(239,430 - 160,000)}{(3,420,000 - 1,539,000)} \times \frac{100}{1} \\ &= \frac{79,430}{1,881,000} \times \frac{100}{1} \\ &= 4.22\%\end{aligned}$$

Generally when investors use financing to partially fund the acquisition, they normally expect the financing to increase the return. In real estate, the Cap Rate is often less than the interest cost for the mortgage. In this case the use of financing decreases rather than increases the return. As an example, the Cap Rate for quality apartments may be around 5.5%, and interest rates for first mortgages are 7%. Often potential investors raise the question "Why should I invest in real estate to get a 5.5 % return when I can put my money into mutual funds bonds, and get a return of 8%?" The reason that investors accept a lower return or Cap Rate is because the Cap Rate return does not include capital appreciation, which is often the major reason why people invest in real estate, i.e., the ultimate return is often much higher than the Cap Rate. The Cap Rate also ignores some of the tax advantages of real estate investments such as depreciation claims and interest expense claims.

If the Cap Rate is less than the interest rate being paid on the mortgage, the investor will experience negative financial leverage, i.e., the Return on Equity will be less than the Cap Rate. As an example, a property may show a 6 % Cap Rate, the interest rate on the first mortgage is 7%, and the Return on Equity is 4%, i.e., the use of financing has reduced the Return from 6% to 4%, which is negative financial leverage. Hopefully the offsetting factor and the reason for investing is a strong capital appreciation.

The Return on Equity (ROE) or the Equity Dividend Rate (EDR) is a useful measure because it provides a Return on Equity (ignoring capital appreciation, income taxes, etc.) but is not widely used in the industry. Some investors use the Return on Equity approach or variations of this approach. It is widely used by Appraisers, and often appears in appraisal reports.

### **Financing Criteria**

Often you need to calculate the amount of financing that might be available for a revenue property and have to do this from the perspective of a lender. Lenders use two approaches to determine to loan amount, and select the approach which provides the lowest loan amount. The two approaches are the:

- a) Loan to Value Ratio
- b) Debt Service Ratio. Also called the "Debt Coverage Ratio"

## **Loan to Value Ratio**

The Loan to Value Ratio =  $\frac{\text{Mortgage}}{\text{Market Value for Lending Purposes}}$

First mortgage lenders maybe restricted to a Loan to Value Ratio of 75%, unless mortgage insurance is provided.

As an example, if the lender has determined that the market value of lending purposes is \$1,600,000 and the Loan to Value Ratio is 75%, then the loan amount is:

$$\text{The Loan to Value Ratio} = \frac{\text{Mortgage}}{\text{Market Value for Lending Purposes}}$$

$$\text{Mortgage} = 75\% \times \$1,600,000$$

$$= \$1,200,000$$

### **Debt Service Ratio (or Debt Coverage Ratio)**

The Debt Service Ratio is defined as:

$$\text{Debt Service Ratio (DSR)} = \frac{\text{Net Operating Income}}{\text{Mortgage Payment (P+i)}}$$

If the Net Operating Income for a property is \$180,000 per year, and the annual debt service is \$150,000, the Debt Service Ratio is:

$$\begin{aligned}\text{Debt Service Ratio} &= \frac{\text{NOI}}{\text{DSR}} \\ &= \frac{180,000}{150,000} \\ &= 1.20\end{aligned}$$

The Debt Service Ratio used by lenders ranges from 1.15 to 1.30 or higher, and reflects the degree of risk. A Debt Service Ratio of 1.20 means that the Net Operating Income is 20% higher than the debt service or mortgage payment. From the lender's perspective, the Debt Service Ratio provides a buffer or safety factor. In the above example, the Net Operating Income could drop by 20%, before the investor experiences a negative cash flow before tax. Lenders may consider apartments to be a reasonably safe investment and may use a Debt Service Ratio of 1.15 to 1.25. For higher risk properties such as a special purpose building or a one tenant industrial building, a Debt Service Ratio of 1.25 or higher might be used. Basically, the less risky the investment from the lender's perspective, the lower the Debt Service Ratio and the higher the loan amount.

In calculating the Net Operating Income the lenders will generally include a Vacancy and Credit Loss Allowance, even if the building is fully leased with excellent tenants with long-term leases.

While the investors may manage the property themselves, the financial lender will always include a property management fee, because if there is a default on the loan, the lender will have to take control of the property. If this happens, they will have to pay for the services of a property manager or use their own staff.

Financial statements rarely include a Maintenance Reserve so the lender generally adds a maintenance reserve of 2% to 3% of Gross Income to the operating expenses.

In calculating loan amounts you have to duplicate the approach used by the lender by including:

- a) a Vacancy and Credit Loss Allowance, regardless of whether the building is fully leased to financially strong tenants such as a bank

- b) a property management fee which generally ranges from 3.50% to 5% of the Effective Gross Income
- c) a maintenance reserve - a rough estimate is 2% of Potential Gross Income, but this figure can vary depending on the age and condition of the appliances, carpets, heating systems, etc.
- d) any adjustments or additions or deletions to the Income and Expenses because they are incorrect. If the lender feels that the rents are too high, or that certain expenses have been omitted, or are too low, the figures will be adjusted. As one lender commented to the author, "I have rarely seen financial statements from an owner or a buyer, where the figures are accurate and truly represent the financial performance of the building. The Net Operating Income on the statements provided to us is always too high, and we have to adjust the figures so that they more accurately reflect the true financial performance of the property."

## **6. MORE FINANCIAL TOOLS FOR ANALYSING REAL ESTATE INVESTMENTS**

Investors use a wide variety of financial tools, in addition to traditional financial measure; Gross and Net Income Multipliers, Cap Rate, and the Return on Equity or Cash on Cash Return.

### **Cost per Unit**

In evaluating rental apartment buildings, investors often calculate the Cost per Unit to decide if the asking price is reasonable by comparing the figure against comparable buildings that have sold recently.

If the asking price was \$1,750,000 and the building contains 37 units, the cost per unit based on the asking price is \$1,750,000/37 which is \$47,297.

This is a fairly rough approach because of the influence of the unit mix, size of the units, etc., but it does provide a quick assessment as to whether the asking price is reasonable. As an example, if the cost per unit for an apartment is \$95,000 and the cost for a comparable condominium unit is \$99,000, then the price is likely too high because condominiums generally sell for a much higher unit price than comparable apartments.

### **Cost per Square Foot**

Another approach is the "Cost per Square Foot" (based on the rentable or livable area). If the asking price is \$2,300,000, and there are 37 units, with an average size of 700 square feet, then the Cost per Square Foot is:

$$\begin{aligned}\text{Cost per square foot} &= \frac{\$2,300,000}{37 \times 700} \\ &= \$89 \text{ p.s.f.}\end{aligned}$$

This figure can then be compared against comparables and also the cost to develop a new building to see if the price is reasonable.

## **Rents per Square Foot per Month**

In order to quickly check the reasonableness of the rents or to see if the rents can be increased, apartment buyers often calculate the rents per square foot. If the rents for an apartment are \$680 for a 630 square foot one bedroom unit, the rent per square foot per month is:

$$\begin{aligned}\text{Rent per Sq.ft. per month} &= \frac{680}{630} \\ &= \$1.08/\text{sq.ft./month}\end{aligned}$$

If comparable rents are \$1.14/sq.ft./month, the investors may feel there may be opportunity to increase the rents over time.

## **Operating Expense Ratio (OER)**

In order to quickly verify the accuracy of the Income and Expense Statement, the Operating Expenses are calculated as a percentage of the Potential or Effective Gross Income. If the Effective Gross Income is \$125,000, and the operating costs are \$42,000, the Operating Expense Ratio based on the Effective Gross Income is:

$$\begin{aligned}\text{Operating Expense Ratio} &= \frac{\$42,000}{\$125,000} \times 100 \\ &= 33.6\%\end{aligned}$$

This Operating Expense Ratio can be compared against comparable buildings to decide if the reported operating costs are realistic. If not, then the financial statements have to be analyzed to find out why the Operating Expense Ratio appears to be out of line with comparable buildings. Typical operating expenses range from 35% to 45% or more of Potential Gross Income depending on the condition of the building, location, cold versus warm climates etc. As an example; buildings in cold climates have snow removal costs, whereas buildings in hurricane zones may have substantially high insurance costs which will influence the Operating Expense Ratio.

Operating costs expressed as a percentage of the Effective Gross Income is a common measure used by rental apartment building buyers, but can be misleading if rents have been increasing rapidly. While two buildings may be comparable, if one landlord has been aggressive in increasing the rents, and the other landlord's rents are below market, then the operating cost expressed as a percentage of Effective Gross Income will be different, yet the buildings are comparable. To overcome this problem, investors often calculate the Operating Costs per Unit per Year.

## **Operating Costs per Unit per Year**

If the annual operating costs are \$95,000, and there are 60 units, the annual operating cost per unit is  $\$95,000/60 = \$1,583$ .

Operating Costs per Unit per Year range from around \$1,300 for newer apartment buildings up to \$2,400 or higher for older, inefficient, and dated apartment buildings.

This figure is very useful to verify where the operating costs on the Income and Expense Statement are accurate. Quite often the vendor will omit expenses, or understate the actual expenses in order to make the investment look more attractive.

## **7. FINANCIAL STATEMENTS**

In dealing with revenue properties you must be able to read, analyse, understand and construct Financial Statements. Financial statements can vary from inaccurate statements that have been manipulated by vendors to make the property look good by playing with the revenue and expenses; to accurate, audited financial statements prepared by professional accountants.

### **Financial Statements**

#### Audited statements

Many financial decisions by investors, banks, appraisers, financial lenders etc. are based on financial statements. In order to be assured that the financial statements are accurate, the statements are often prepared and audited by an registered public accountant authorized to prepare audited statements. In an audit, the registered accountant is responsible for an examination of the accounting system, records and reports in accordance with generally accepted auditing standards. Based on this examination, an opinion is expressed as to the fairness, in accordance with generally accepted accounting principles, applied on a consistent basis to the financial statements and accompanying notes. The auditor's opinion of the financial statements is an extremely important piece of information which external users place much significance.

The auditor's report may take several forms, depending on the result of the audit. It may be a:

- a) unqualified opinion
- b) qualified opinion
- c) disclaimer or adverse opinion

#### Unqualified Opinion

An "Unqualified Opinion" is the most favourable report. The following is an example of an "Unqualified Auditor's Opinion".

#### AUDITOR'S REPORT

To the Shareholders of ABC APARTMENTS Corp.

I have examined the balance sheet of as at December 31, 2007 and the statements of income, retained earnings and changes in financial position for the year then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the company as at December 31, 2007 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

City

(signed)

### Qualified Opinion

A Qualified Opinion is a modification to a Unqualified Opinion and includes the words "Except for"

### Adverse Opinion

An adverse opinion states that the financial statements do not fairly represent the financial position or the results from operation in conformity with generally accepted accounting principles applied on a consistent basis and then proceeds to state the reason for the adverse opinion.

### Disclaimer of Opinion

A Disclaimer of Opinion is used by the registered accountant where insufficient information has been obtained in order for the accountant to form an opinion of fairness or when the financial results are uncertain such as a pending, major legal action which has been commenced against the company. Some of the reasons for an Adverse Opinion or a Disclaimer are:

1. Scope of auditor's examinations has been restricted by the client. As an example, the client wouldn't allow the accountant to physically check the inventories.
2. Financial statements have not been performed in accordance with generally accepted accounting principles. As an example, the client insisted on valuing inventories at the selling price rather than historical costs which is the accepted method.
3. Accounting principles used in the financial statements have not been consistently applied. As an example, the inventories were valued using both LIFO (Last in, first out) and FIFO (first in, first out) methods.
4. There are unusual uncertainties affecting the financial statements which cannot be reasonably estimated at the date of auditor's report. As an example, there may be an unresolved lawsuit and insurance claim that once resolved could materially affect the financial affairs of the firm.

### Unaudited Financial Statements

A registered accountant may be engaged by the owner of an income property or a business to prepare unaudited financial statements or the accountant may be asked to prepare statements for tax purposes. The purpose of the statements will influence the financial statements.

Statements may be prepared for submission for a mortgage, income tax filing, internal control, or for providing financial information for selling the property. In each case the financial statements would differ. As an example, depreciation may be recorded differently on each of the statements. In the case of the income tax return , the depreciation is claimed as is at the rate and method specified by the IRS. Likely depreciation would be omitted from financial statements prepared for selling the building.

Statements prepared for the IRS will attempt to produce the lowest taxable income and may include expenses not directly related to the running of the building such as automobile expenses.

Statements prepared for selling the building will attempt to make the Net Operating Income as high as possible. Although a registered accountant may have prepared the statements, there will be a signed disclaimer, which serves as a notice to the readers. The disclaimer will state that no audit, review or any other attempt has been made to verify the accuracy, completeness, or the relevancy of the information provided on the financial statements.

The following is an example of a "Disclaimer of Opinion".

"The company balance sheet ABC Apartments Corp. as of December 31, 2007 and the related statements of income and retained earning were not audited by us and therefore we do not express an opinion on them."

If the statements were prepared for internal use only the "Disclaimer of Opinion" will state that the financial statements are restricted for internal use and therefore do not necessarily include all the disclosures that might be required for a fair presentation.

#### Owner prepared Statement

You will often encounter statements which have been prepared by the owner or his staff and may or may not have been prepared by a trained accountant. Particular care has to be taken in using Owner Prepared Statements as they may be manipulated to make the Net Operating Income as high as possible. It is not uncommon for the income to be based on next year's projected rent and the expenses are based on last year's expenditures. Important expenses may be left out, and maintenance expenditures may deliberately be postponed prior to the sale of the building so as to lower the expenses to make the building look financially more attractive.

It is important to analyze the Income and Expense Statements to see if they are reasonable and make any appropriate adjustments before estimating the likely sale price or presenting the financial information to others.

When dealing with owner prepared financial statements you have to be aware that they may be manipulated and inaccurate.

#### Proforma Statements

Some financial statements presented by owners are not really statements but are projections or Proforma Statements which are based on projected rents and expenses. This is quite common particularly if it is the early part of the owner's financial year. As an example, the financial statements for the year 2007 if they are being given to you, for example, in June 2007 will likely contain a mix of actual and projected incomes and expenses. In this case, ask for the 2007 year-to-date income and expenses so that you can identify the actual and projected figures. You should also ask for the statements for the previous two years.

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### **Verifying the Financial Statements**

If you have audited financial statements you can place a high degree of faith in the financial statements in terms of accuracy and a representation of the financial performance of the property or business. Even so, it still may be necessary to delete certain figures such as director salaries, mortgage payments, car expenses, depreciation, etc. to produce an Income and Expense statement that represents the results of operations of the property itself.

When working with financial statements that you feel may be inaccurate you can take the following steps to verify the information:

- a) Ask the owner to provide receipts for the major expenses items that can be verified such as property taxes, heating (electric, gas, oil), maintenance, and insurance etc.
- b) If possible, obtain a copy of the tax return filed with the IRS for the property or business. This approach would probably be one of last resort, and many vendors would be reluctant to provide you with the tax return.
- c) Have the vendor warrant the accuracy of the information.
- d) Probably the most important step you can take is to specialize and become familiar with typical rent levels and operating costs for different types of buildings. As an example, if you specialize in selling or investing in rental apartment buildings, you will become familiar with the rental levels and operating costs for rental apartment buildings. This will enable you to quickly reconstruct the financial statements so that they more accurately reflect the financial performance of the property.
- e) Your assessment should include a general inspection of the property to identify the general conditions of the building and whether the building has been well maintained and whether preventative maintenance has been performed or the repairs and maintenance have been postponed. Following the physical inspection you can then decide whether the maintenance expenses reported appear reasonable or not.
- f) Obtain quotations for expenses such as insurance, elevator maintenance, property management, garbage collection etc.

## **8. THE DIFFICULTIES OF FINDING AND USING CAP RATES**

While Cap Rates are probably the most common financial measure used by investors, real estate agents and appraisers, there are a number of problems associated with establishing and using Cap Rates. We will first look at the difficulties of finding Cap Rates and then review some of the situations where there are problems with using Cap Rates.

### **Finding Cap Rates**

Realtors and investors new to commercial real estate are often puzzled about Cap Rates, and how you find them, since there are no published lists of typical Cap Rates for different types of real estate investments.

Realtors and investors tend to specialize in particular areas of commercial real estate such as apartment buildings, industrial buildings, etc. and are constantly monitoring the sales. Through this monitoring process, they are able to determine the Cap Rate from the most recent sales. In addition they are constantly talking to other realtors, appraisers and lenders, which help them keep abreast of changes in the marketplace and the prevailing Cap Rates.

If you are new to commercial real estate, you will find it initially difficult to determine Cap Rates for different kinds of real estate investments. Perhaps the easiest way is to get to know appraisers, financial lenders and commercial realtors that you can contact to find out about the current Cap Rates. Contact with buyers and sellers may also help you find Cap Rates because the buyer and seller are often very familiar with what's happening in the marketplace. The quickest way to find realistic Cap Rates is from a mortgage lender or broker who specializes in financing the type of property you are trying to value.

In addition, you should start to monitor the sales in your area of interest which will help you become familiar with what investors are paying and what Cap Rates are being used.

The major problem is that you can find out the sales price, but unless you can determine the Net Operating Income, you will not be able to determine the Cap Rate, since you need both the sale price and the net operating income to determine the Cap Rate.

In commercial buildings such as office buildings, warehouses, etc., if you know the rents or can estimate them, you can determine the approximate Net Operating Income. The Net Operating Income will be very close to the Effective Gross Income because the tenant pays for almost all of the landlord's operating expenses. In other words, with a little homework and by making some assumptions, you can determine the Net Operating Income for commercial buildings where the tenant pays the bulk of the landlord's operating expenses. All you need is the rent, which you can estimate or obtain from the real estate listing, or by contacting the agent who sold or leased the property. This approach works well if there are only one or two tenants, and you can find out or establish the rents. It becomes more difficult if there is a large number of tenants in the building, who are on different lease rates and where the terms and conditions of the leases vary substantially.

Rental apartment buildings present a different problem because the landlord pays for most of the expenses except for the electricity paid by the tenant. Expenses vary greatly depending on the age of the building, type of heating systems, general upkeep and maintenance, the local Climate, etc. Once you become familiar with apartments and become knowledgeable about rents and operating expenses you can estimate the Net Operating Income and if you know the sales price, you can then calculate the Cap Rate.

If you are familiar with Cap Rates for one type of property you may be able to use common sense to estimate the likely Cap Rates for other types of properties.

If the Cap Rates for prime apartments is 6%, the Cap Rate for quality strip retail may be 9% and for marginal retail stores the Cap Rate may be 11 to 12% or higher. Cap Rates reflect risk. The more risky the investment, the higher the Cap Rates. This relationship can be used to provide a rough estimate of the Cap Rate. If you know the Cap Rate for one kind of investment, you may be able to intuitively work out the Cap Rates for other types of properties by taking into account the differences in the risk and adjusting the Cap Rate to reflect the difference in risk.

### **Problems associated with Cap Rates**

There are a number of situations where the Cap Rate may be incorrect or misleading. The Cap Rate is a simple measure determined by dividing the Net Operating Income by the sales price or market value:

$$\text{Cap Rate} = \frac{\text{Net Operating Income} \times 100}{\text{Market Value}} \quad 1$$

This Cap Rate is just the tip of the iceberg. Often there are a lot of underlying factors that the investor has considered in determining the purchase price and which may effect the Cap Rate. We will examine some specific situations where the Cap Rate calculation using the cap rate may be incorrect and introduce the idea of the "apparent" and "true" Cap Rate.

#### **a) Rental Apartment buildings that are approved as a condominium**

There are a large number of apartment buildings or rental properties that have been operating for a number of years as rental projects, but when they were built, the investors had the building approved as a condominium. This means that the tenancies can be terminated and the individual units sold off. The value of a condominium rental apartment building is generally higher than a rental apartment building and the resultant Cap Rate is lower. As an example, if an apartment building that has not been stratified sells for a 7.50% Cap Rate, a comparable condominium apartment building may sell for a lower Cap Rate i.e., a higher price. The reason for the difference is that an investor can buy a stratified building, terminate the tenancies, perhaps renovate the units, lobby, etc. and sell the individual units, and make a development or speculative profit.

When trying to find out the Cap Rate for a recent apartment building sale, you need to find out whether the building has been approved for a condominium or not. The Cap Rate will be lower for buildings that have been stratified, compared to those that have not been stratified.

### b) Buying an opportunity to increase rents

Sometimes an "apparent" low Cap Rate is because the investor is buying an opportunity to increase rents, because the rents are below market. After buying the property, the investor will bring the rents up to market rents, which will increase the value of the property. The ability to raise rents will depend on the local rent control laws.

As an example, an investor has paid \$3,300,000 for a 40 unit apartment building. The rents are \$750 per month, but he feels that they are \$150 per month below market rents for comparable properties. The Operating Costs are 43% of the Effective Gross Income, and the Cap Rate for similar properties that are rented at market value is 8%. The "Apparent Cap Rate" can be calculated as follows assuming the Vacancy and Credit Loss Allowance is 2%.

Potential Gross Income	
40 units x \$750 x 12 months	\$360,000
Less: 2% Vacancy and credit loss allowance	<u>7,200</u>
Effective Gross Income	\$352,800
Less: Operating Expenses	
43% x \$352,800	<u>\$151,704</u>
Net Operating Income	\$201,096

$$\begin{aligned}
 \text{Apparent Cap Rate} &= \frac{\text{NOI}}{\text{MV}} \times 100 \\
 &= \frac{\$201,096}{3,300,000} \times 100 \\
 &= 6.1\%
 \end{aligned}$$

The "Apparent Cap Rate" is 6.1 % compared to a Cap Rate of 8% for comparables. This seems to indicate that the investor has paid too much for the property, however, he has paid more for the property because of the potential to increase the market value by raising rents. The profit from raising the rents is:

$$\text{MV} = \frac{\text{Net Operating Income}}{0.061}$$

In this case, we are interested in the increase in market value caused by the increase in rents. The profit is:

$$\begin{aligned} \text{Profit} &= \frac{\text{Increase in the NOI} \times 100}{\text{Cap Rate}} \\ &= \frac{\$150 \times 40 \text{ units} \times 12 \text{ months} \times 100}{8} \\ &= \$900,000 \end{aligned}$$

The Cap Rate once the rents have been increased, based on the purchase price of \$3,300,000 is:

$$\begin{aligned} \text{Cap Rate} &= \frac{\text{NOI} + \text{Rent Increase} \times 100}{\text{MV}} \\ &= \frac{\$201,096 + (\$150 \times 40 \text{ units} \times 12 \text{ months}) \times 100}{3,300,000} \\ &= 8.28\% \end{aligned}$$

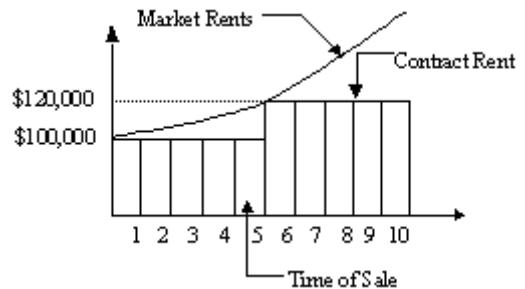
The apparently low Cap Rate of 6.1% compared to typical Cap Rates of 8.0% is because the investor sees a chance to make a handsome profit by increasing rents, and has paid more for the property.

### c) Development Sites

An unusually low Cap Rate may be because the purchaser is buying a property because of the development potential. As an example, a site that is ripe for a condominium project may have an old apartment building on the site. If you calculate the Cap Rate based on the Sale Price and the Net Operating Income, it will be very low. The value of property is based on the development potential rather than the present income. The "Land Residual" or "Backdoor Approach" determines the value of land. One way of testing whether the property has development potential is to ask "If the building burnt down, would we replace it with a similar property?" If the answer is "No," then the value of the site will likely be determined by the development potential rather than the income. As an example, down town parking garages would be valued based on the development potential or land value rather than on the income from the parking fees.

### Cap Rates and Leases

There can be problems using Cap Rates to determine values when a lease is coming up for renewal. For example, a purchaser is considering buying a single tenant office building, where the current net operating income is \$100,000, but the lease is coming up for renewal for another five year term and the new lease rate is expected to increase the net operating income to \$120,000 in three months' time and the Cap Rate is 10%. The change in the Net Operating Income is shown in the diagram below:



The Impact of a Lease Renewal on Market Value

This situation creates a number of problems in determining the market value. Both the seller and the buyer are aware that the lease rate will go up. The Net Operating Income is expected to increase to \$120,000 per year, based on the new lease rate, but this amount is not certain because the new lease rate has not been settled. The seller will try and argue that the market value should be based on a Net Operating Income of \$120,000 which is \$1,200,000 (i.e.,  $\$120,000/10 \times 100/1$ ) while the buyer will argue that there is no guarantee that a higher lease rate will be achieved. The initial offer would be \$1,000,000 (i.e.,  $\$100,000/10 \times 100$ ). Likely the market value like somewhere between \$1,000,000 and \$1,200,000. This situation illustrates the problem of determining the value of a property when the income is likely to increase significantly in the near future.

There are several ways to handle this situation:

- 1 . Recommend to the vendor that the lease be renegotiated before the property is offered for sale so that the uncertainty related to the lease rate and Net Operating Income is removed and the purchaser can determine the value of the property based on a known future income stream.
2. If the lease renewal rate cannot be negotiated prior to the sale, the purchase price can be based on a Base Price plus an increase in the purchase price beyond the Base Price which reflects the final lease renewal rate.

Using the above example, the purchase price could be calculated as follows:

- a. Base Price \$1,090,000
- b. The Base Price will be increased by \$100,000 for every \$1,000 per year increase in income beyond \$109,000 per year once the lease has been renewed.

As an example, if the lease renewal resulted in a final Net Operating Income of \$115,000, the purchase price would be:

$$\text{Purchase Price} = \text{Base Price of } \$1,090,000 + \frac{(115,000 - 109,000) \times 10,000}{1,000}$$

$$\begin{aligned}\text{Purchase Price} &= \$1,090,000 + 60,000 \\ &= \$1,150,000\end{aligned}$$

This use of formulas to determine the final purchase price is a useful technique for handling situations where the income is changing in the near future but neither the buyer or seller know the final figure until the lease renewal rates have been negotiated and finalized.

The above example is for a one tenant building. The problem becomes more complex when there are multiple tenancies. It would be naive to think that a buyer uses the Cap Rate and the Net Operating Income to determine the value of a large office building or a regional shopping centre. In determining the value the buyer will analyze every lease, estimate the likely renewal rates, the cost of tenant inducements, estimate any capital expenditures such as upgrading the lobby and common area, etc., and use this information to determine how much they will pay for the property. The analysis could take several months and involve an exhaustive investigation into the current and future financial performance of the building.

#### **d) Cap Rates and favorable and unfavorable Financing**

Cap Rates ignore financing but there are circumstances where the financing will influence the purchase price and a Cap Rate calculated on the "Apparent" sale price and the Net Operating Income is incorrect. For

example, if a purchaser paid \$1,000,000 for a property that had a net operating income of \$100,000, the Cap Rate would appear to be 10% (i.e.,  $\$100,000/\$1,000,000 \times 100/1$ ). However, if the purchaser assumed a mortgage, which has a high interest rate of 9%, compared to the current market rate of 7%, with three years left on the term. In this case, the purchaser would pay less for property to offset the additional interest expense over the remaining term of the mortgage. If we assume that the present value of the increased interest cost to the purchase caused by assuming a mortgage with a rate higher than the current market rate is \$100,000 over the remaining term, then the buyer will offer \$100,000 less for the unfavorable financing. The true price if we wish to use this property as a comparable is \$1,100,000 (i.e.,  $\$1,000,000 + \$100,000$ ), i.e., the property would have sold for \$1,100,000 if there wasn't unfavorable financing being assumed by a purchaser. The true Cap Rate is 9.1%, not 10% (i.e.,  $\$100,000/\$1,100,000 \times 100/1$ ).

Assuming favorable financing produces the opposite effect. The purchaser will pay more for the property because of the reduced interest costs over the remaining term of the mortgage.

To take this into account you would subtract the present value of the interest savings over the remaining term of the mortgage to arrive at the true purchase price.

#### e) Adjusting the Sales Price for immediate repairs

Often the purchaser will lower the price if immediate repairs are needed which can result in an incorrect estimate of the Cap Rates if you are not aware of how the purchaser determined the price. As an example, you have found a comparable that sold for \$1,194,444, and the Net Operating Income is \$130,000, which gives a Cap Rate of 10.88%. On further investigation, you discover that the purchaser estimated that \$250,000 was needed for immediate repair to the roof, to remove the asbestos in the building, and update the fire safety system.

The purchaser would determine the value as follows if the Cap Rate for this type of building is 9%.

Market value based on a 9% market Cap Rate:	$\frac{\$130,000}{9\%} \times \frac{100}{1}$	\$1,444,444
Less: Cost of immediate repairs		<u>250,000</u>
Purchase Price:		\$1,194,444

This example illustrates that you can incorrectly calculate the Cap Rate using the Sale Price and the Net Operating Income if there are underlying factors, which caused the seller and the purchaser to accept a lower or higher price. In this case, the "Apparent" Cap Rate based on the sales information was 10.88%, but the True Cap Rate is 9% when you take into account the \$250,000 that the purchaser deducted from the sale price to pay for the urgent repairs.

#### Summary

Extreme care has to be taken when calculating Cap Rates for comparables, and serious mistakes can be made by calculating the Cap Rate based on the Sale Price and the Net Operating Income if there are hidden factors that influenced the sale price. As mentioned at the start, the Sale Price, Net Operating Income and the resultant Cap Rate is the tip of the iceberg. Under the surface may be a variety of factors that have influenced the sale price including:

Apartment buildings that have been stratified and therefore offer the potential to sell the individual units for a profit

Rents that are below market and the buyer can increase the value quickly by raising the rents

The value of the property is determined by the development potential rather than the Net Operating Income.

The lease(s) are coming up for renewal in the near future which will increase or decrease the Net Operating Income

Purchasers that are assuming favorable or unfavorable financing or situations where the vendor is providing favorable finance, will cause the purchaser to increase or lower the purchase price to reflect the additional interest savings or costs over the remaining term of the mortgage

If the purchase feels that there is a need for immediate, urgent repairs, the cost of the repairs may be deducted from the purchase price.

To correctly calculate a Cap Rate you need to investigate whether the sale was straightforward, or whether there were important underlying factors which influenced the ultimate selling price.

## **9. DETERMINING THE VALUE OF MIXED USE BUILDINGS**

Mixed use buildings, such as buildings that have retail space on the ground floor and offices or rental apartments on the second and third floor, are popular with some investors because they offer the chance to diversify and reduce their risks because the building has several different types of tenancies.

To determine the value of a mixed use building, you calculate the Net Operating Income for each type of tenancy (e.g. Retail and Apartments), and then calculate the market value using the Cap Rate relevant to each type of tenancy. As an example:

An investor is considering purchasing a mixed use building. The information on the property is:

24 One bedroom apartments rented at \$650 per month.

The operating expenses for the rental apartments \$50,500 per year.

Retail area is 6,000 square feet and leases for \$19 per square feet (net net net).

The investor feels that a Vacancy and Credit Loss Allowance of 3% should be used, and that the Cap Rate for the apartments is 8%, and 11% for the retail space.

The value of the building would be determined as follows:

### **Market Value of the apartments:**

Potential Gross Income:

24 units x \$650/month x 12	\$187,200
Less: Vacancy and Credit Loss allowance (3%)	<u>5,616</u>
Effective Gross Income	\$181,584

Less: Operating Expenses	<u>50,500</u>
Net Operating Income	\$131,084

$$\text{Market value} = \frac{\text{Net Operating Income} \times 100}{\text{Cap Rate}} \quad 1$$

$$= \frac{\$131,084 \times 100}{8} = \$1,638,550 \quad 1$$

**Market Value of the retail space:**

Potential Gross Income

\$19 per sq ft (net net net ) x 6,000 square feet	\$114,000
Less: Vacancy and Credit Loss allowance (3%)	<u>3,420</u>
Effective Gross Income:	\$110,580

Less: Operating Expenses (triple net lease)	<u>0</u>
Net Operating Income	\$110,580

$$\text{Market value} = \frac{\text{Net Operating Income} \times 100}{\text{Cap Rate}} \quad 1$$

$$= \frac{\$110,580 \times 100}{11} = \$1,005,273$$

**Market Value**

The market value is the total of the market value for the retail component plus the market value for the apartment component.

Market value = Market value of the apartments + market value of the retail space

$$\begin{aligned} &= \$1,638,550 + \$1,005,273 \\ &= \$2,643,823 \end{aligned}$$