



## Property Analyzing Formulas

This document includes a set of formulas used to analyze various aspects of property investment and management. Let's break down each formula:

### 1. **Net Income ROI (Return on Investment)**:

- Calculation: Gross income minus operating expenses, interest, and depreciation, divided by owner's equity.
- Purpose: Measures the return on investment based on the net income generated relative to the equity invested.

$$\frac{\text{Gross income} - \text{operating expenses} - \text{interest} - \text{depreciation}}{\text{Owners equity}} =$$

### 2. **Cash Return on Investment**:

- Calculation: Remaining cash after debt service divided by cash investment.
- Purpose: Evaluates the return on investment based on the cash generated relative to the initial investment.

$$\frac{\text{Remaining cash after debt service}}{\text{Cash investment}} =$$

### 3. **Total ROI**:

- Calculation: Remaining cash after debt service plus principal reduction, divided by cash investment.
- Purpose: Provides a comprehensive measure of return on investment considering both cash flow and equity appreciation.

$$\frac{\text{Remaining cash after debt service} + \text{principal reduction}}{\text{Cash investment}} =$$

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## 4. **\*\*NOI (Net Operating Income)\*\*:**

- Calculation: Gross income minus total operating expenses.
- Purpose: Represents the income generated after deducting all operating expenses, serving as a key indicator of property profitability.

$$\text{Gross income} - \text{total operating expenses} =$$

## 5. **\*\*Sales Price (used for offering price)\*\*:**

- Calculation: Net operating income divided by cap rate.
- Purpose: Helps determine the appropriate sales price of the property based on its income-generating potential.

$$\text{Net operating income} = \frac{\text{Sales price}}{\text{Cap rate}}$$

## 6. **\*\*Cap Rate (Capitalization Rate)\*\*:**

- Calculation: Net operating income divided by sales price.
- Purpose: Indicates the rate of return an investor can expect from the property based on its current income relative to its purchase price.

$$\text{Cap Rate} = \frac{\text{Net operating income}}{\text{Sales price}}$$

## 7. **\*\*Debt Service Coverage Ratio\*\*:** (ratio of cash available to pay loan. Need between 1.00.-1.40.)

- Calculation: Net operating income divided by principal plus interest.
- Purpose: Measures the property's ability to cover its debt obligations with its operating income.

$$\text{Debt Service Coverage Ratio} = \frac{\text{Net operating income}}{\text{Principal} + \text{interest}}$$

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## 8. **Operating Efficiency Ratio**: (operating expenses per sqft of property)

- Calculation: Total operating expenses divided by square feet.
- Purpose: Evaluates the efficiency of property management by comparing operating expenses per square foot.

$$\text{Total operating expenses} = \text{Square feet}$$

## 9. **Gross Rent Multiplier**: (rent multiplier between gross income and purchase price)

- Calculation: Purchase price divided by gross income.
- Purpose: Provides a quick way to assess the relationship between the property's purchase price and its rental income.

$$\text{Purchase price} = \text{Gross income}$$

10. **Operating Ratio**: (ratio between total operating expense and gross income. Commercial properties have higher and multi families tend to be higher/c expenses vary who pays for them. Between 30-70%)

- Calculation: Total operating expenses divided by gross income.
- Purpose: Indicates the proportion of gross income consumed by operating expenses, reflecting the property's operational efficiency.

$$\text{Total operating expenses} = \text{Gross income}$$

11. **Break Even Ratio**: (serves performance of cash flows and income and expenses. Less than 100% or 1.0 BER for buy and hold properties.)

- Calculation: Total operating expenses plus debt service divided by gross income.
- Purpose: Determines the level at which property income covers expenses and debt service, with a ratio below 1.0 indicating profitability.

$$\text{Total operating expenses} + \text{debt services} = \text{Gross income}$$

These formulas collectively offer a comprehensive toolkit for property investors and managers to assess financial performance, profitability, and operational efficiency.