

Raising Your Commercial IQ

101 How to Analyze and Value Income Properties

Commercial Basics

In-house Training Program Instructor Guide, Agenda and Timetable

Neil Osborne M.B.A.
DL. (604) 988-9964
nosborne@investitsoftware.com
Investit Software Inc.
Toll free 877-878-1828
North Vancouver BC
Canada V7R 3N4
investit@investitsoftware.com
www.investitacademy.com
www.investitpro.com
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101. INSTRUCTOR GUIDE

Class hours

Allow approximately 16 hours of class time. For example, four, four-hour sessions meeting once per week.

Content choices

In some cases, you may not want to present all the course material. For example, if the class consists of residential realtors or rookie commercial interested in learning more about commercial real estate, some topics may be too advanced. If this is the case, skip the topic.

Teaching process

The teaching process consists of alternating between playing the:

1. micro videos
2. flashcards, answering the flashcard questions, and class discussions

by following the “Agenda Time Table” below.

The micro videos provide an introduction to the topic. The flash cards actively involve the student in the learning process and reinforce the material presented in the micro videos.

Flash cards

A great way to learn the basics. The Participant Guide contains:

1. Question
2. Space for the participant to write the answer
3. The answer is on the flip side of the flashcard.

Teaching using flashcards.

Allow the participants time to complete the flashcard questions and then:

Review each flashcard question and answer and encourage questions and discussions. Enliven with your own experience and local examples.

This approach provides the opportunity for active class involvement.

1. Questions, answers, and lively in-depth discussions
2. Provides the instructor with an opportunity to provide local examples and personal experiences.

Example.

Questions related to Cap Rates provide an opportunity to present the Cap Rate for different types of income properties in your area.

Participants always appreciate local examples.

Competency Test

We strongly recommend that participants take the “Competency Test.” before commencing the 101 In-house course and then take the “Competency Test” again after completing the course to measure their progress.

The “Competency Test” measured their understanding of basic commercial real estate terms and calculations.

Prior to taking the 101 in-house course, the competency test grade is generally around 45% to 55%, indicating they have a lot to learn. The grade typically improves to 85% plus after taking the 101 in-house program.

Class Quiz

At the end of the last session, it’s recommended that the participants take Quiz No. 1. The quiz questions are in the Participant Guide. Allow about 15 to 20 minutes to answer the quiz questions, then review the answers by playing the flashcard set “Quiz No. 1.”

AGENDA TIME TABLE

GROSS INCOME MULTIPLIERS & CAP RATES

Line number	Play Micro Video	Manual Page Number	Play Flash Card Set	Participant Package Page number
1	Gross Income Multipliers (5 min)	6		
2	Cap Rates (4 min)	8		
3	Calculating the Cap Rate (2 min)	8		
4	Calculating the Net Operating Income (1 min)	9		
5			Gross Income Multipliers	22
6			Cap Rate. Calculations	25
7	Finding Cap Rates (6 min)	10		
8	Cap Rates. Fundamental assumptions (2 min)	11		
9	Don't trust the Cap Rate (5 min)	11		
10	Understanding Cap Rates (4 min)	13		
11	Cap Rates and Risk (1 min)	13		
12	Cap Rate and Capital Appreciation (1 min)	13		
13	Cap Rates and Equity requirements (1 min)	13		
14	Cap Rates and House Prices (1 min)	14		
15	Cap Rates and Vacancy Risk (2 min)	14		
16	Cap Rate examples (1 min)	14		
17	Locations with low Cap Rates (3 min)	14		
18	Cap Rates depend on the type of property (6 min)	15		
19	Cap Rates are influenced by? (8 min)	15		
20	Sensitivity analysis (6 min)	16		
21			Understanding Cap Rates	28

FINANCIAL RATIOS

Line number	Play Micro Video	Manual Page Number	Play Flash Card Set	Participant Package Page number
22	Return on Equity (ROE) os Cash on Cash (6 min)	17		
23	Financing Ratios to determine loan amounts (3 min)	19		
24	Operating Expense Ratio (OER) (8 min)	20		
25	Default Ratio (Breakeven Point) (2 min)	21		
26	Other Financial Measures (1 min)	22		
27	Which measure should you use? (3 min)	22		
28			Return on Equity and Cash on Cash	30
29			Financing Ratios. Calculations	31
30			Using the Default Ratio (Breakeven Point)	34

RENTAL APARTMENT BUILDINGS

Line number	Play Micro Video	Manual Page Number	Play Flash Card Set	Participant Package Page number
31	How to analye a rental apartment building (6 min)	23		
32	Quick tips for analyzing Income and Expenses (1 min)	24		
33			How to examine operating expenses	35
34			Tips for analyzing income and expenses	37
35	Analyzing an apartment building. Case study (15 min)	25		
36			Impact of future capital expenditures on value	38

BUILDING INSPECTIONS

Line number	Play Micro Video	Manual Page Number	Play Flash Card Set	Participant Package Page number
37	The importance of engineering inspections (9 min)	34		

COMMERCIAL PROPERTIES

Line number	Play Micro Video	Manual Page Number	Play Flash Card Set	Participant Package Page number
38	Valuing commercial properties (3 min)	40		
39	Types of Leases and Rent (3 min)	41		
40	Free Rent (1 min)	42		
41	Percentage Rents (1 min)	42		
42	Rentable areas (2 min)	43		
43	Quoting rents as a rate. Issues(1 min)	43		
44	Measuring space (1 min)	43		
45	Reading a lease. Trips and Traps (7 min)	44		
46			Types of Leases	39
47			Types of Rent	40
48			How to define and measure space	41
49			Tips for reading leases	43
50	Screening an investment. Case study0 (3 min)	48		

INTRODUCTION TO LONG TERM INVESTMENT ANALYSIS

Line number	Play Micro Video	Manual Page Number	Play Flash Card Set	Participant Package Page number
51	Long Term Investment Analysis versus Cap Rate Approach (18 min)	50		
52	Long Term Real Estate Investment Analysis (12 min)	57		
53			Using Cap Rates. Issues and problems	45
54			Intro. Long term real estate investment analysis	47
55			Discounted cash flow analysis	49
56			Developing the Net Cash Flow and Internal Rate of Return (IRR). Example	51
57			Impact of financial leverage	53

VALUING EXISTING BUILDINGS WITH DEVELOPMENT POTENTIAL

Line number	Play Micro Video	Manual Page Number	Play Flash Card Set Other Topics	Participant Package Page number
58	Valuing obsolete buildings	63		

OTHER TOPICS

Line number	Play Micro Video	Manual Page Number	Play Flash Card Set Other Topics	Participant Package Page number
59			Why professional engineering inspections are so important	58
60			Valuing properties with development potential	59
61			Quiz No.1 Have the class take Quiz No. 1 and then review the flash card answers	65

PRACTICE QUIZ and 101 COURSE EXAM

Suggest the participants take the **101 Practice Quiz** to test their knowledge and measure their progress.

They can take the test many times, and the grade will be recorded and can be reviewed

The quiz results are confidential and cannot be viewed by anyone else.

101. Course Exam.

Encourage the students to take the 101 course exam which is set up by your manager or office administrator.

FLASH CARDS QUESTIONS & ANSWERS

Gross Income Multipliers. Calculations

Q1.

There are two ways to calculate the Gross Income Multiplier.
What are they and what is the difference?

Your answer

1) The Potential Gross Income Multiplier (PGIM)

2) The Effective Gross Income Multiplier (EGIM)

The difference?

Potential Gross Income Multiplier (PGIM) ignores the Vacancy & Bad Debt Allowance

The Effective Gross Income Multiplier (EGIM) takes into account the Vacancy & and Debt Allowance

Q2.

Write down the formulas for the:

Gross Income Multiplier (GIM)

Effective Gross Income Multiplier (EGIM)

Your answer

$$\text{Potential Gross Income Multiplier} = \frac{\text{Sale price}}{\text{Potential Gross Income}}$$

$$\text{Effective Gross Income Multiplier} = \frac{\text{Sale Price}}{\text{Effective Gross Income}}$$

Q3.

If the Sale price of an income property is \$1,200,000 and Potential Gross Income is \$130,000 calculate the Potential Gross Income Multiplier (PGIM)?

Your answer

$$\begin{aligned} \text{Potential Gross Income Multiplier (PGIM)} &= \frac{\text{Sale Price}}{\text{Potential gross Income}} \\ &= \frac{\$1,200,000}{\$130,000} \\ &= 9.23 \end{aligned}$$

Q4.

If the Sale price of an income property is \$1,500,000 and Potential Gross Income is \$125,000 and the Vacancy and Bad Debt Allowance is 5% calculate the Effective Gross Income Multiplier (EGIM)?

Your answer

Effective Gross Income = Potential Gross Income	\$125,000
Less: Vacancy & Bad Debt Allow.	6,250 (5%)
Effective Gross Income	\$118,750

$$\text{Effective Gross Income Multiplier (EGIM)} = \frac{\text{Sale Price}}{\text{Effective Gross Income}}$$

$$= \frac{\$1,500,000}{\$118,750}$$

$$= 12.63$$

Q5.

What are the formulas for calculating the potential selling price of an income property if you know the:

Potential Gross Income Multiplier (PGIM)

Effective Gross Income Multiplier (EGIM)

...from comparables?

How do you calculate the Effective Gross Income?

Write the formulas down and then check **Your answers** on the flip side.

Your answer

Using the Potential Gross Income Multiplier (PGIM)

$$\begin{aligned} \text{Sale Price} &= \text{Potential Gross Income Multiplier (PGIM)} \times \text{Potential Gross Income (PGI)} \\ &= \text{PGIM} \times \text{PGI} \end{aligned}$$

Using the Effective Gross Income Multiplier (EGIM)

$$\begin{aligned} \text{Sale Price} &= \text{Effective Gross Income Multiplier (EGIM)} \times \text{Effective Gross Income (EGI)} \\ &= \text{EGIM} \times \text{EGI} \end{aligned}$$

Effective Gross Income = Potential Gross Income - Vacancy and Bad Debt Allow.

Q6.

Based on the following information calculate the potential sales price using:

- 1) Potential Gross Income Multiplier (PGIM) of 12
- 2) Effective Gross Income Multiplier (EGIM) of 14

Potential Gross Income: \$120,000

Vacancy and Bad Debt Allowance: 7%

Perform the calculations and then check the flip side

Your answer

Based on the Potential Gross Income Multiplier (PGIM)

$$\begin{aligned} \text{Sale price} &= \text{PGIM} \times \text{Potential Gross Income} \\ &= 12 \times \$120,000 \\ &= \$1,440,000 \end{aligned}$$

Based on Effective Gross Income Multiplier (EGIM)

$$\begin{aligned} \text{Effective Gross Income} &= \text{Potential Gross Income} - \text{Vacancy and Bad Debt Allowance} \\ &= \$120,000 - 120,000 \times 7\% \\ &= \$111,600 \end{aligned}$$

$$\begin{aligned} \text{Sale price} &= \text{EGIM} \times \text{Effective Gross Income} \\ &= 14 \times \$111,600 \\ &= \$1,562,400 \end{aligned}$$

Q7.

What does Bad Debt Allowance refer to?

Note. Also called "Credit Losses"

Your answer

Refers to space or units that were rented but the tenant failed to pay the rent and had to be evicted.

Vacancy refers to empty space or vacant unit.

END

Cap Rate calculations

Q1.

Write down the formulas for:

- 1) Calculating the Cap Rate
- 2) Determining the Sales Price using the Cap Rate from comparables

Compare your answer with the formulas shown on the flip side

Your answer

$$\text{Cap Rate (\%)} = \frac{\text{Net Operating Income (NOI)} \times 100}{\text{Sale Price}}$$

$$\text{Sale Price} = \frac{\text{Net Operating Income (NOI)}}{\text{Cap Rate}}$$

Q2.

How would you define the Operating Expenses?

When using a Cap Rate to determine the value of an income property what expenditures should be removed from an Income and Expense statement when calculating the Net Operating Income (NOI)

Your answer

Operating costs are regular cost associated with operating the building such as taxes, insurance and maintenance which are called TIM's. Operating Costs could include Property Management.

Example of items that need to be removed when using a Cap Rate to determine the value.

- 1) All non-recurring expenditures such as:
 - Replacing a section of carpet or a some of the appliances
 - Painting the exterior of the building
 - Commercial building. Leasing fees for renting vacant space
 - Major one time repairs such as replacing the roof or HVAC system
 - 2) Mortgage and loan interest costs
 - 3) Depreciation
 - 4) Income taxes
-

Q3.

Which of the following expenses should be removed from the Income and Expense Statement when using the Net Operating Income (NOI) and the Cap Rate to calculate the value of the property? Mark with an "X"

- Insurance
- Property taxes
- Upgrading the elevator
- Elevator service contract
- Landscaping service contract
- Mortgage Interest costs
- Repairs to a retaining wall
- Security
- Painting 40% of the building exterior
- Property management

Your answer

Item marked with "X" are non-recurring expenses and need to be removed from the Income & Expense Statement when using a Cap Rate to determine the value of a property.

- Insurance
- Property taxes
- Upgrading the elevator X
- Elevator service contract
- Landscaping service contract
- Mortgage Interest costs X
- Expensive repairs to a dangerous crumbling retaining wall X
- Security
- Painting 40% of the building exterior X
- Property Management

Q4.

How do you calculate the Net Operating Income (NOI)?

Your answer

Potential Gross Income	\$175,000
Less: Vacancy & Bad Debt Allowance	<u>7,000 (4%)</u>
Effective Gross Income	\$168,000
Less: Operating Expenses	<u>60,000</u>
Net Operating Income (NOI)	\$ 108,000

Q5.

Using the following information calculate the likely selling price using the Cap Rate approach to determine the value of the income property

Net Operating Income (NOI): \$125,000

Cap Rate: 6% (from comparables)

Your answer

Potential Sales Price = $\frac{\text{Net Operating Income (NOI)}}{\text{Cap Rate}}$

$$= \frac{\$125,000}{6\%}$$

$$= \$2,083,333$$

Q6.

Using the following information calculate the Cap Rate

Net Operating Income (NOI): \$120,000

Sale Price: \$2,500,000

Your answer

Cap Rate = $\frac{\text{Net Operating Income (NOI)} \times 100}{\text{Sale Price}}$

$$= \frac{\$120,000 \times 100}{\$2,500,000}$$

$$= 4.80\%$$

END

Understanding Cap Rates

Q1.

The lower the Cap Rate the higher or lower the property value?

Your answer

A low Cap Rate generates a higher value than a high Cap Rate

Q2.

Using an Net Operating Income (NOI) of \$120,000

Calculate the property value using a:

1) 5% Cap Rate

2) 10% Cap Rate

Your answer

Sale Price = $\frac{\$120,000 \times 100}{5.00\% \text{ Cap Rate}}$
= \$2,400,000

Sale Price = $\frac{\$120,000 \times 100}{10.00\% \text{ Cap Rate}}$
= \$1,200,000

The **LOWER** Cap Rate of 5% generates a higher value than the **HIGHER** Cap Rate of 10%

Q3.

From a BUYERS perspective which do they prefer?

A higher or a lower Cap Rate?

From SELLERS perspective which to they prefer?

A higher or a lower Cap Rate?

Your answer

BUYERS want to pay the least amount possible so they like using a HIGHER Cap Rate to lower the purchase price

SELLERS want to get as high a price as possible so they like using LOWER Cap Rates

Q4.

What are two fundamental assumptions that are made when using the Cap Rate to determine the value of an income property?

Your answer

1) The Net Operating Income (NOI) is constant and goes on forever

Year	1	2	3	Etc
Net Operating Income	\$120,000	\$120,000	\$120,000	Forever

2) The property is never sold

Q5.

Why would an investor buy an income property at a 3.00% Cap Rate and finance with a first mortgage at 5.00%?

Your answer

Because of the potential for capital appreciation

Hopefully the Net Operating Income (NOI) and the value of the property increase over time

Q6.

The higher the perceived risk the HIGHER or LOWER the Cap Rate?

Your answer

The higher the risk the HIGHER the Cap Rate

To offset the higher risk investor's want a higher return which means paying less for the property which means using a higher Cap Rate to determine the value of the income property

Q7.

The higher the anticipated CAPITAL APPRECIATION the HIGHER or LOWER the Cap Rate?

Your answer

The **HIGHER** the anticipated Capital Appreciation the **LOWER** the Cap Rate

Q8.

How does a HIGH Cap Rate effect the amount of EQUITY (Down Payment) needed by the investor?

Your answer

HIGH Cap Rate

Generates a lower purchase price and requires a lower down payment or less equity

Example: 8.00 % Cap. Equity or down payment might be as low as 25%

LOW Cap Rate

Generates a higher price and requires a hefty down payment or equity

Example: 3.5 % Cap. The equity or down payment ` might be 60% or more

END

Return on Equity and Cash on Cash

Q1.

The Return on Equity (ROE) goes under a number of different names. Write them down then check **Your answer** on the flip side.

Your answer

The alternate names for Return on Equity (ROE) are:

- 1) Cash on Cash Return
- 2) Equity Dividend Rate (EDR). Used by appraisers in appraising income properties

Purpose: What is the return I am getting on the money I invest which is my equity or down payment?

Equity is the down payment. Takes into account the mortgage financing.

Q2.

Write down the formula for calculating Return on Equity (ROE) or Cash on Cash Return. Check **Your answer** on the flip side.

Your answer

The formula for calculating the Return on Equity (ROE) or Cash on Cash Return is:

$$\text{Return on Equity (ROE)} = \frac{(\text{NOI} - \text{Debt Service}) \times 100}{(\text{Price} - \text{Mortgage})}$$

$$= \frac{\text{Cash Flow before Tax}}{\text{Cash invested}}$$

= Cash on Cash (This is why it's called Cash on Cash)

$$= \frac{(\$130,000 - 93,000) \times 100}{(\$1,625,000 - 1,252,000)}$$

= 9.92% Return on Equity (ROE) or Cash on Cash Return

Note: Debt Service is the annual payment of "Principle plus Interest"

Example

Net Operating Income (NOI): \$130,000

Debt Service: \$93,000 per Yr. Annual (P+ I) payment

Purchase Price: \$1,625,000

Mortgage: \$1,252,000

Q3.

Calculate the Return on Equity (ROE) or Cash on Cash Return using the following information

Net Operating Income (NOI): \$165,000 per year

Debt Service: \$110,000 per year

Purchase Price: \$1,700,000?

Mortgage: \$1,200,000

Your answer

The formula for calculating the Return on Equity (ROE) or Cash on Cash Return is:

$$\text{Return on Equity (ROE)} = \frac{(\text{NOI} - \text{Debt Service}) \times 100}{(\text{Price} - \text{Mortgage})}$$

$$= \frac{\text{Cash Flow before Tax}}{\text{Cash invested}}$$

$$= \text{Cash on Cash (This is why it's called Cash on Cash)}$$

$$= \frac{(\$165,000 - 110,000) \times 100}{(\$1,700,000 - 1,200,000)}$$

$$= 11.00\% \text{ Return on Equity (ROE) or Cash on Cash Return}$$

Note: Debt Service is the annual payment of "Principle plus Interest"

Example
 Net Operating Income (NOI): \$165,000
 Debt Service: \$110,000 per Yr. Annual (P+ I) payment
 Purchase Price: \$1,700,000
 Mortgage: \$1,200,000

Q4.

Calculate the Return on Equity (ROE) or Cash on Cash Return using the following information

Net Operating Income (NOI): \$165,000 per year

Debt Service: \$110,000 per year

Purchase Price: \$1,700,000?

Mortgage: \$1,200,000

Check **Your answer** on the flip side.

Your answer

The formula for calculating the Return on Equity (ROE) or Cash on Cash Return is:

$$\text{Return on Equity (ROE)} = \frac{(\text{NOI} - \text{Debt Service}) \times 100}{(\text{Price} - \text{Mortgage})}$$

$$= \frac{\text{Cash Flow before Tax}}{\text{Cash invested}}$$

$$= \text{Cash on Cash (This is why it's called Cash on Cash)}$$

$$= \frac{(\$165,000 - 110,000) \times 100}{(\$1,700,000 - 1,200,000)}$$

$$= 11.00\% \text{ Return on Equity (ROE) or Cash on Cash Return}$$

Note: Debt Service is the annual payment of "Principle plus Interest"

Example
 Net Operating Income (NOI): \$165,000
 Debt Service: \$110,000 per Yr. Annual (P+ I) payment
 Purchase Price: \$1,700,000
 Mortgage: \$1,200,000

END

Financing Ratios Calculations

Q1.

Lenders use two ratios for determining the first mortgage amount

Write them down together with the formula and check **Your answers** on the flip side

Your answer

The two ratios used by lenders to determine the amount of the first mortgage amount are:

1) Loan to Value Ratio (LTV)

$$= \frac{\text{First mortgage amount}}{\text{Purchase Price}}$$

$$= \frac{\$900,000}{\$1,500,000} \times 100$$

$$= 60\%$$

<p>Example</p> <p>Purchase Price: \$1,500,000</p> <p>First Mortgage: \$900,000?</p> <p>Net Operating Income (NOI): \$190,000.</p> <p>Debt Service: \$145,000 per Yr.</p>
--

2) Debt Service Coverage Ratio

$$\frac{\text{Net Operating Income (NOI)}}{\text{Debt Service}}$$

$$\frac{\$190,000}{\$145,000}$$

$$= 1.31$$

Q2.

Using the following information calculate the:

- 1) Loan to Value Ratio(LTV)
- 2) Debt Service Coverage Ratio (DSCR)

Purchase Price: \$3,700,000

First Mortgage: \$2,500,000

Net Operating Income (NOI): \$230,000 per Yr.

Debt Service: \$175,000 per Yr. Annual (P +I) payment

Your answer**1) Loan to Value Ratio (LTV)**

$$\frac{\text{First mortgage amount}}{\text{Purchase Price}} \times 100$$

$$= \frac{\$2,500,000}{\$3,700,000} \times 100$$

$$= 68\%$$

Example

Purchase Price: \$3,700,000

First Mortgage: \$2,500,000

Net Operating Income (NOI): \$230,000 per Yr.

Debt Service: \$175,000 per Yr.

2) Debt Service Coverage Ratio

$$\frac{\text{Net Operating Income (NOI)}}{\text{Debt Service}}$$

$$= \frac{\$230,000}{\$175,000}$$

$$= 1.31$$

Q3.

How does the lender use the

Loan to Value Ratio (LTV)

Debt Service Coverage Ratio (DSCR)

to determine the loan amount of the first mortgage?

Your answer

The lender calculates the mortgage amount using the:

Loan to Value Ratio (LTV)

Debt Service Coverage Ratio (DSCR)

and selects the method that generates the lowest loan amount

Example. A lender calculates the following:

Loan to Value Ratio (LTV) 75% Mortgage: \$6,300,000

Debt Service Coverage Ratio (DSCR): 1.25 Mortgage: \$5,800,000

The lender chooses the lowest loan amount which is \$5,800,000 based on the 1.25 Debt Service Coverage Ratio

Q4.

What are the common numbers that traditional first mortgage lenders use for determining a loan amount for quality income properties:

Loan to Value Ratio (LTV)?

Debt Service Coverage Ratio (DSCR)?

Your answer

Traditionally first mortgage lenders tend to use:

Loan to Value Ratio (LTV): Up to 75% of appraised value

Debt Service Coverage Ratio (DSCR): 1.25 or higher

The Loan to Value Ratio (LTV) set the upper ceiling where the lender will not loan more than 75% of the appraised value

If the Cap Rate is relatively low it's generally the Debt Service Coverage Ratio (DSCR) that determines the loan amount not the Loan to Value Ratio (LTV)

The above figures can vary depend on the personal wealth of the investor and the risk assessment carried out by the lender

Q5.

The Debt Service Coverage Ratio (DSCR) and the Loan to Value Ratio (LTV) are helpful in determining whether and when a property can be refinanced.

If the lender uses:

Loan to Value Ratio (LTV): 75% of appraised value

Debt Service Coverage Ratio (DSCR): 1.25

Which one of the following properties has the potential to be refinanced with a larger mortgage?

	Property A	Property B	Property C
Loan to Value Ratio	77%	72%	69%
Debt Coverage Ratio	1.28	1.20	1.29

Your answer

If the lender uses:

Loan to Value Ratio (LTV): 75% of appraised value

Debt Service Coverage Ratio (DSCR): 1.25

It may be possible to refinance PROPERTY C because the Loan to Value (LTV) is 69% which is less than 75% and the Debt Service Cover Ratio (DSCR) is 1.29 and could be reduced to 1.25 subject to not exceeding the Loan to Value Ratio of 75%

Which one of the following properties has the potential to be refinanced with a larger mortgage?

	Property A	Property B	Property C
Loan to Value Ratio	77% ❌	72% ❌	69% ✅
Debt Coverage Ratio	1.28	1.20 ❌	1.29 ✅

CAUTION Commercial Mortgage contracts often include a clause that prevents refinancing or allows refinancing but imposes a hefty interest penalty making it financially unattractive to refinance the first mortgage.

Q6.

From the lender's perspective what does a:

Loan to Value Ratio (LTV) of 75% of appraised value and a Debt Service Coverage Ratio (DSCR) of 1.25 mean?

Your answer

A loan to Value Ratio (LTV) of 75% means that the maximum first mortgage cannot exceed 75% of appraised value provided the Debt Service Coverage Ratio (DSCR) is 1.25 or higher.

The Debt Service Coverage Ratio (DSCR) of 1.25 is the lenders margin of safety. The "Operating cash Flow before tax" can drop by approximately 25% before a negative cash flow develops.

END

Using the Default Ratio (Breakeven Point)

Q1.

Write down the formula for calculating the Default Ratio (Breakeven Point)

Check your answer on the flip side.

Your answer

$$\text{Default Ratio} = \frac{(\text{Operating Expenses} + \text{Debt Service})}{\text{Effective Gross Income}} \times 100$$

Q2.

Using the following information calculate the Default Ratio or Breakeven Point

Operating Expenses: \$110,000 per Yr.

Debt Service: \$130,000

Effective Gross Income (EGI): \$300,000

Your answer

$$\text{Default Ratio} = \frac{(\text{Operating Expenses} + \text{Debt Service})}{\text{Effective Gross Income}} \times 100$$

$$\begin{aligned} \text{Default Ratio} &= \frac{(110,000 + 130,000)}{300,000} \times 100 \\ &= 80\% \end{aligned}$$

The building breaks even when 80% rented

Q3

How do we use the Default Ratio or Breakeven Point?

Your answer

The Default Ratio allows you to assess the investment risk and the potential for refinancing the building

RISK. The higher the Default Ratio the higher the investment risk

A building with a Default Ratio of 95% is potentially a risky investment. A small drop of 5% or more the Net Operating Income would quickly create an operating loss

A building with a 75% Default Ratio is a much safer investment as the Net Operating Income would have to drop 25% before the building would experience an operating loss

POTENTIAL for REFINANCING

Once the Default Ratio is 85% or higher there is little room to increase the first mortgage
A Default Ratio of 65% would indicate there may be potential to increase the first mortgage

Q4.

What does the Default Ratio or Breakeven Point mean?

Your answer

The Default Ratio (Breakeven Point) is an excellent measure of risk

Examples**Default Ratio**

50% means that the building has to be 50% rented to breakeven which suggests a low risks investment

90% means that the building has to be 90% rented to breakeven which suggests a high risks investment

Typical values are around 80%. It's probably unwise to have a default ratio higher than 85%

END

How to examine operating expenses

Q1.

Write down the formula for the Operating Expenses Ratio (OER)

Check your answer on the flip side

Your answer

There are two ways to calculate the Operating Expense Ratio (EOR):

1) Using Potential Gross Income (PGI)

2) Using Effective Gross Income (EGI)

$$\text{Operating Expense Ratio (EOR)} = \frac{\text{Operating Expenses} \times 100}{\text{Potential Gross Income (PGI)}}$$

$$\text{Operating Expense Ratio (OER)} = \frac{\text{Operating Expenses} \times 100}{\text{Effective Gross Income (EGI)}}$$

Q2.

How do we use the Operating Expense Ratio (OER)?

Your answer

The Operating Expense Ratio (OER) is used to check if the expenses shown on the Income & Expense Statement are realistic or has the seller deliberately reduced the expenses to increase the Net Operating Income to make the property look more valuable?

Q3

Which is best method for checking expenses?

Using the:

1) Operating Expense Ratio (OER) based on the Potential Gross Income (PGI)?

2) Operating Expense Ratio (OER) based on the Effective Gross Income (EGI)?

Your answer

An investor should use the Operating Expense Ratio (OER) based on the Effective Gross Income because it takes into account the vacancies which gives a more accurate picture as to whether expenses are realistic or not.

Q4.

Using the following information calculate the Operating Expenses Ratio (OER) using the Effective Gross income (EGI)

Potential Gross Income (PGI): \$250,000 per Yr.

Vacancy: 5.00%

Operating Expenses: \$95,000 per Yr.

Your answer

Operating Expense Ratio (OER) = $\frac{\text{Operating Expenses} \times 100}{\text{Effective Gross Income}}$

Effective Gross Income = Potential Gross Income - Vac. loss

$$\begin{aligned} \text{Operating Expense Ratio (OER)} &= \frac{\$95,000 \times 100}{\$250,000 - 5\% \times 250,000} \\ &= 40\% \end{aligned}$$

Q5

What are typical Operating Expense Ratios for:

- a) Rental apartment buildings
- b) Commercial buildings. Office, Industrial and Retail

Your answer

The Operating Expenses Ratio (OER) varies widely depending on the age and the condition of the building. For rental apartment buildings the OER varies widely depending on whether the landlord or the tenant pays for the heating of the unit and for hot water

Typical Operating Expense Ratios (OER)

Rental Apartment Buildings 35% to 45%+ including property management

Motels: 55% to 65% Operating Expense Ratio

Public Storage: 35% to 45% Operating Expense Ratio

Commercial Buildings

Office: 40% to 50%+ Incl. Pty Management

Industrial: 30% to 35%+ Incl. Pty Management

Retail: 45% to 50%+ Incl. Pty Management

Note. Use with caution. These are rough rules of thumb

END

Tips for analyzing income & expenses

Q1.

What is the best way to analyze individual revenues for a Rental Apartment Building?

Your answer

Revenues

Rent. Express as a \$ per Unit per Month

E.g. \$900 per unit per Month

Laundry Revenue. \$ per Unit per month

E.g. \$15 per Unit per Month

Parking: \$ per Space per month

E.g. \$55 per Space per Month

Q2.

What's the best way at analyze individual expenses for a rental apartment building?

Your answer

Individual Expenses.

A maintenance amount on the Income & Expense Statement of \$60,000 is not very help in checking to see if it's realistic.

Express as a \$ per Unit per Yr. Example for a 70 unit building

Maintenance per Unit per Yr. = $\$60,000/70$ units

= \$850 per Yr.

Does this seem reasonable?

What if the Maintenance was \$15,000 per Yr?

= $\$15,000/70$ units

= \$214 per unit per Yr.

Far too low suggesting the seller is deliberately understating the maintenance expense and the expenses need to be revised.

Q3.

List operating expenses which can be;

- a) quickly verified
- b) hard to verify

Your answer

Operating Expenses that can easily be verified

Property Taxes

Contracts. Any service that is being provided under contract such as:

- Property Management
- Security services
- Resident caretaker
- Elevator service and maintenance contract
- Insurance
- Garbage pickup services
- Etc.

Operating Expenses that can hard to verify Maintenance and Repairs Snow removal

END

Impact of future capital expenditures on value

Q1.

Write down three examples of future capital expenditures that might lower the price that a buyer is willing to offer the seller.

Your answer

Roof has to be replaced within one year.

Cost \$560,000

The parking area is in rough shape and needs replacing. Cost \$290,000

There is an order from the City to upgrade the fire alarm system. Cost \$175,000

Q2.

Calculate the price that a buyer might offer using the following information:

Net Operating Income: \$250,000

Market Cap Rate: 5.00% (From comparables)

As part of the diligence the buyer engaged professional engineering firm to assess the building.

The engineers estimated that there is \$625,000 of urgent repairs including replacing the roof and caulking the leaking windows.

Your answer

1) Calculate the price

$$\begin{aligned}
 \text{Price} &= \frac{\text{Net Operating Income (NOI)} \times 100}{\text{Cap Rate}} \\
 &= \frac{\$250,000 \text{ (NOI)}}{5.00\%} \\
 &= \$5,000,000
 \end{aligned}$$

2) Adjust for urgent major expenditure's

Price	\$5,000,000
Cost of urgent repairs	<u>-625,000</u>
Adjusted Price	\$4,375,000

END

Types of Leases

Q1.

What is a Gross Lease or a Full Service Lease?

Write down **Your answer** then check **Your answer** on the Flip Side

Your answer

Gross Lease or Full Service Lease

The tenant pays a fixed amount of rent such as \$3,000 per month

In most cases the tenant pays for their light and may or not pay for cost of heating their space.

The landlord pays for the operating costs such taxes, insurance and maintenance (TIM's)

The term Full Service Lease can mean different things. You need to **READ the LEASE** or Offer to LEASE which will define what the term "Full Service Lease" means.

Q2.

What's the disadvantage of a Gross Lease or a Full Service Lease from a Landlord's perspective?

Your answer

Landlords don't like Gross Leases or Full Service Leases

As operating costs like property taxes increase the landlord cannot pass the additional costs on to the tenant.

This means that the Net Operating Income (NOI) declines over time which may reduce the value of the building.

Q3.

What is a Modified Gross Lease?

Your answer

It is a variation of the Gross Lease where the tenant pays for some of the landlord's operating expenses as spelled out in the lease. There are many variations of a gross lease.

Examples

1. Tenant pays the gross rent plus the increase in property taxes, insurance and maintenance over the base year.
 2. Tenant pays the increase the property taxes over the base year plus snow removal.
-

Q4.

What is an Indexed Lease or a Gross lease with an escalation clause?

Your answer

A gross lease where the base rent is increased each year by a specified percent as spelled out in the lease or increased by the change in the specified Consumer Price Index (CPI) to help offset the increase in the landlords operating expenses..

NOTE. There are many types of Consumer Price Indexes. The lease will specify the Consumer Price Increase (CPI) to be used in calculating the annual increase in rent.

Government's often use a Gross Lease with some form of annual escalation when negotiating a lease. Also called an Indexed Lease.

Q5.

What's a Triple Net Lease (NNN)

Also called a Net Lease.

Your answer

A Triple Net Lease means a tenants pays their proportional share of the landlord's operating expenses such as taxes, insurance and maintenance (TIM's).

Triple Net Lease is a somewhat ambiguous term.

As an example, does the tenant pay their share of the Property Management fee? How about administrative costs? Or the depreciation of mechanical equipment?

To answer these types of questions you need to **READ the LEASE** which spells out what operating costs the tenant pays and what operating cost landlord pays.

END

Types of Rent

Q1.

What is the Base Rent?

Your answer

The “Base Rent” is the rent paid by the tenant to the landlord.

Commercial example:

Base Rent is \$24 per Sq.Ft per year paid monthly at the beginning of the month

Note. some states use a monthly rate.

E.G. \$2.00 per Sq. Ft per Month

Q2.

What is “Additional Rent”?

Your answer

Additional Rent

Payment by the tenant to the landlord under a “Triple Net Lease (NNN)for the landlord’s operating expenses as specified in the lease.

Also called:

- Recoverable Expenses

- Reimbursable Expenses

- Pass Through

- TIM’s (Taxes, Insurance & Maintenance

- CAMs (Common Area Maintenance)

Q3.

What is Free Rent?

Your answer

Landlords often offer “Free Rent” as a tenant inducement to rent the space.

Example

Four months free rent where the tenant doesn’t pay the Base Rent for four months.

Generally the free rent periods will be spread over several years to reduce the landlord’s risk if the tenant breaks the lease and leaves.

Example.

Four months free rent with one month of free rent occurring every year for four years

Q4.

Does "Free Rent" apply to the "Additional Rent"?

Your answer

Generally "Free Rent" only applies to the "Base Rent" not to the "Additional Rent".

If the lease arrangement is "Triple Net" the landlord wants to get paid the "Additional Rent" in order to recover the operating expense as specified in the lease.

Q5.

Explain "Percentage Rent"

Your answer

The tenant pays a "Base Rent" or the % Rent whichever is the larger.
Often used when leasing retail space and by shopping center owners.

Example

Base Rent: \$600,000 per year

% Rent: 5% of sales

Sales: \$18,000,000 per Yr.

$\% \text{ Rent } 5\% \times \$18,000,000 = \$900,000$

Tenant pays the % Rent of \$900,000 because it is larger than the Base Rent of \$600,000 per year

END

How to Define & Measure Commercial Space

Q1.

What is the Rentable Area and the Gross Leasable Area (GLA)?

Write down **Your answer** and check the Flip Side

Your answer

The Rentable area is the area used to calculate the rent and varies by the type of real estate.

Industrial. The rentable area is generally the area occupied by the tenant

Retail space. Called the Gross Leasable Area (GLA). It's the area occupied by the tenant

Office Space. See the next flash card

Q2.

How do you calculate the rentable area in an office building?

Your answer

In an office building the landlord wants to get paid rent based on the area occupied by the tenant which is called the "Usable Area" plus the tenant's share of the common areas such as the lobby, corridors etc. which is the "Rentable Area".

Rentable Area = Usable Area x Load Factor or Common Area Factor

Various names are used to identify the Load Factor.

Load Factor, Common Area Factor

Add On Factor, R/U (Rentable Area/Usable Area)

Example: Usable Area: 9,000 Sq. Ft Load Factor or Common Area Factor: 14%

Rentable Area = 9,000 Sq. Ft plus 14% = 10,260 Sq. Ft

Q3.

Calculate the Base Rent per month for an office building using the following information:

Base Rent: \$30 per Sq. Ft per Yr. based on the "Rentable Area"

Usable Area: 10,000 Sq. Ft. This is the area occupied by the tenant

Add on Factor: 13%

Your answer

Base Rent: \$30 per Sq. Ft per Yr. based on the "Rentable Area"
Usable Area: 10,000 Sq. Ft. This is the area occupied by the tenant.
Add on Factor: 13%

Rentable Area = Usable Area plus the Add On Factor of 13%
= 10,000 Sq. Ft x 1.13
= 11,300 Sq. Ft

Monthly Base Rent = $\frac{11,300 \text{ Sq. Ft} \times \$30 \text{ per Sq. Ft per Yr}}{12}$
= \$28,250

Q4.

What are the "BOMA" standards

Your answer

The BOMA (Building Owners and Manager Association) standards are widely used by landlords and tenants for measuring space in office, retail, industrial and flex buildings.

Q5.

What are the dangers associated with quoting rents as \$ per Sq. Ft per Yr. or Month?

Your answer

When calculating the rent the landlord and the tenant may use different areas to calculate the rent which can lead to misunderstandings as to the amount of the rent.

Example. Office building

Rentable Area: 10,000 Sq. Ft includes a portion of the common areas like corridors.

Area occupied by the tenant: 9,000 Sq.Ft

Rent Rate: \$30 per Sq. Ft per Yr

Tenant calculates the rent as 9,000 Sq.Ft x \$30 = \$270,000 per year

Landlord calculates the rent as 10,000 Sq.Ft x \$30 = \$300,000 per year.

This creates problems between the landlord and tenant.

Q6.

What's the simple solution to the problems created by quoting rent as \$ per sq. Ft per Yr. or Month?

Your answer

Quote the rent as an amount.

The rent is \$120,000 per year paid monthly

This simple approach avoids the problems of defining the rentable area and how the space will be measured avoiding potential misunderstanding between the landlord and the tenant.

END

Tips on reading leases

Q1.

Why is it so important to read a lease carefully?

Your answer

Because very important clauses are often buried in the middle of the lease where the reader is skimming through quickly and not paying attention, missing really important clauses.

Q2.

When reading a lease look for who pays what?

Flip side

What expenses are paid by the landlord and what expenses are paid by the tenant?

Be careful of the term Triple Net (NNN) it can be ambiguous and misleading.

READ THE LEASE which will define what operating expenses are paid by the tenant to the landlord in the form of "Additional Rent". Sometimes called "Recoverable Expenses"

Q3.

What is a "Demolition Clause"?

Your answer

A "Demolition Clause" is the landlord's right to terminate the tenancy on the issuance of a rezoning, development or building permit from the City as specified in the lease.

Tenants don't like Demolition Clauses because it is very costly to move to another space and disrupts the tenant's business.

On the other hand if a developer is buying an old tenanted building to demolish and build a new building they need to check to see if there is a demolition clause otherwise they may have to wait until all the leases expire.

Q4.

Tips for reading a lease

Your answer

Read the lease several times. Leases are complex legal documents and need to be read carefully. Read with a purpose. Ask a question and go looking for the answer in the lease.

Examples

Is there a "Demolition Clause"?

When is the next rent increase and how is it calculated?

What operating expenses does the tenant pay?

ETC.

Q5.

How are the renewal rates or rent increases in a lease determined?

Also called "Rent Steps" or "Rent bumps"

Your answer

The lease will specify the date of the rent increase and how the new rent will be determined?
There are a variety of ways to specify how the rent will increase.

Examples

The lease may specify the new rate. The rent increases to \$27 per Sq. Ft per year April 1 2021

The renewal rate will be based on market rents at the time of renewal

Based on the change in the specified Consumer Price Index (CPI)

Escalating or indexed lease.

The lease increases every year by 3% or the lease increases every year based on the change in the specified Consumer Price Index? (CPI)

END

Using Cap Rates. Issues and problems

Q1.

The “Apparent Cap Rate” versus the “True Cap Rate”

Your answer

The Cap Rate is just the tip of the iceberg.

There can be a whole host of hidden factors that the buyer might take into account when determining the purchase price.

We will explore a few of them.



Q2.

The impact of “urgent major repairs” on the purchase price

Your answer

The impact of “urgent major repairs” on the Sale Price

Sale Price: \$3,200,000 Net Operating Income: \$275,000 per year

$$\text{“Apparent Cap Rate”} = \frac{\$275,000 \times 100}{\$3,200,000} = 8.59\%$$

BUT... the buyer deducted \$425,000 because the roof had to be replaced, the elevator upgraded
 Sale Price based on “Normal” building = \$3,200,000 + \$425,000 = \$3,625,000

$$\text{“True Cap Rate”} = \frac{\$275,000 \times 100}{\$3,625,000} = 7.59\%$$

True Cap Rate is 7.59%. The “Apparent Cap Rate” is 8.59%. A 12% difference.

Q3.

Cap Rates can't handle changing cash flows over time

Flip to see an example

Your answer

The impact of the timing of a lease renewal on the cash flow and property value. Example.



The Cap Rate approach doesn't work very well when the cash flows change over time.

Clearly Property A is worth more than Property B.

To evaluate these two cash flows we would use "Discounted Cash Flow Analysis" and calculate the Internal Rate of Return (IRR) and the Net Present Value (NPV) using the investor's discount rate.

END

Intro. Long Term Real Estate Investment Analysis

Q1.

What is long term real estate investment analysis?

Your answer

Long term real estate analysis involves projecting out the cash flow before and after tax over a number of years.

Takes into account:

1. The purchase of the property
2. Future capital expenditures
3. Financing and any future financing or refinancing
4. The generation of revenues and expenses over the analysis or holding period
5. Mortgage payments (P +I)
6. Proceeds from the sale of the property

Q2.

Write down how to develop the cash flow before tax.

Your answer

The calculation of the yearly cash flow before tax is:

Potential Gross Income
Less: Vacancy Loss
 Effective Gross Income
Less: Operating Expenses
 Net Operating Income
Less: Debt Service (Principal & Interest Payments)
 Cash Flow before tax

Q3.

Show me an example of an "Operating Cash Flow Projection"

Your answer

	Year 1	Year 2	Year 3	Year 4	Year 5
CASH FLOW BEFORE TAX					
Potential Gross Income	499,200	516,900	535,320	553,506	573,372
Less: Vacancy & Credit Loss Allow	14,256	14,751	15,266	15,772	16,326
Effective Gross Income	484,944	502,149	520,054	537,734	557,046
Operating Expenses	221,374	230,523	240,079	248,972	258,293
Net Operating Income	263,570	271,626	279,975	288,763	298,753
Less: Principal Payments	28,318	30,517	32,886	35,439	38,190
Interest payments	149,040	146,841	144,472	141,919	139,168
CASH FLOW BEFORE TAX	86,212	94,268	102,617	111,405	121,395
Less: Income Tax at 35.00%	8,051	10,265	14,017	17,986	22,446
CASH FLOW AFTER TAX	78,162	84,003	88,601	93,419	98,950

Q4.

What's the advantage and disadvantage of using cash flow analysis over using the Cap Rate approach to determine the value of an income property?

Your answer

The Cap Rate approach is very simple method to quickly determine the value using:

$$\text{Value} = \frac{\text{Net Operating Income}}{\text{Cap Rate (from comparables)}}$$

The Cap Rate approach is simple and quick but ignores:

1. Long term capital appreciation
2. Ignores financing and the impact of financing on the return on investment
3. Changing cash flows over time
4. Future capital expenditures such as replacing the roof for \$300,000 in 5 years' time

The cash flow analysis is a much more rigorous the Cap Rate and takes into account:

Changing Revenue and Expenses over time

Future capital expenditure such as replacing the roof in year 3 for \$325,000

Mortgage payments (P+I)

Takes a lot longer to develop the cash flows compared to using the Cap Rate approach to determine the value.

Q5.

How long of a time period do you use when developing the yearly cash flows and carrying out long term real estate investment analysis?

Your answer

It depends on the type of income property and how long the investor is planing to keep the property.

Rental Apartment Buildings:

Five years is sufficient. Maybe 10 years.

Office, Industrial & Retail properties Ten years

With commercial buildings with leases it is best to analyze over 10 years to take into account the impact of periodic increases in rent on the long term value.

As an example Tenant A's rent increases every 3 years based on 2.5% compounding per year.

END

Discounted Cash Flow Analysis

Q1.

Which would you rather have?

1) \$1,000,000 today or \$1,000,000 in 10 years' time?

Your answer

\$1,000,000 today because you can invest the \$1,000,000 and earn interest for the next 10 years

In choosing the \$1,000,000 today you intuitively carried out "Discounted Cash Flow Analysis" and recognized the "Time Value of Money"

Discounted cash flows analysis projects the cash flow over the holding period and takes onto account "The Time Value of Money"

Q2.

You are going to loan me \$10,000 and I'm offering you the following two repayment plans. The annual payment is at the end of each year.

Which would you prefer as the lender Plan A or Plan B?

From your perspective which is the less risky option? Plan A or Plan B?

Year	Plan A	Plan B
0	\$<10,000>	\$<10,000>
1	4,000	6,000
2	5,000	5,000
3	<u>6,000</u>	<u>4,000</u>
Total	\$ 15,000	\$ 15,000
Return (IRR)	_____%	_____%

Your answer

Year	Plan A	Plan B
0	\$<10,000>	\$<10,000>
1	4,000	6,000
2	5,000	5,000
3	<u>6,000</u>	<u>4,000</u>
Total	\$ 15,000	\$ 15,000
Return (IRR)	21.65%	25.35%

Plan B provides the highest return.

If you chose Plan B you intuitively applied "Discounted Cash Flow Analysis" and have taken into account the "Time Value of Money"

Always balance "Risk" and "Reward" 

Which is less Risky? Plan A or B?

Plan B because you receive the money back faster. Sooner is better than later

Q3.

What is the Internal Rate of Return (IRR)?

How do you calculate the Internal Rate of Return?

Your answer

The Net Cash Flow report shows the cash flow from the time the property is acquired until it is sold which is used to calculate the Internal Rate of Return (IRR)

Net Cash Flow (Before Tax)						
Parklane Place 40 Unit Apartment Building - Rental Apartment Building Example						
Yr	Investment	Financing		Operating Cash Flow (Before Tax)	Sales Proceeds (Before Tax)	Net Cash Flow (Before Tax)
		Borrow	Paid Back			
1	\$(3,770,000)	\$2,000,000	-	\$ 86,212	-	\$(1,683,788)
2	-	-	-	94,268	-	94,268
3	-	-	-	102,617	-	102,617
4	-	-	-	111,405	-	111,405
5	-	\$(250,000) Roof Replacement	-	121,395	-	(128,605)
6	-	-	-	131,294	-	131,294
7	-	-	-	141,986	-	141,986
8	-	-	-	152,724	-	152,724
9	-	-	-	163,611	-	163,611
10	-	-	\$(1,594,349)	175,117	\$4,936,12	3,516,930
Total						\$ 2,602,443

Financial Returns (Before Tax) with Financing	
Internal Rate of Return (IRR)	10.61 %
Net Present Value (NPV) at 13%	\$(296,501) ←

Need to drop the price by \$296,501 to get a 13% Return (IRR)

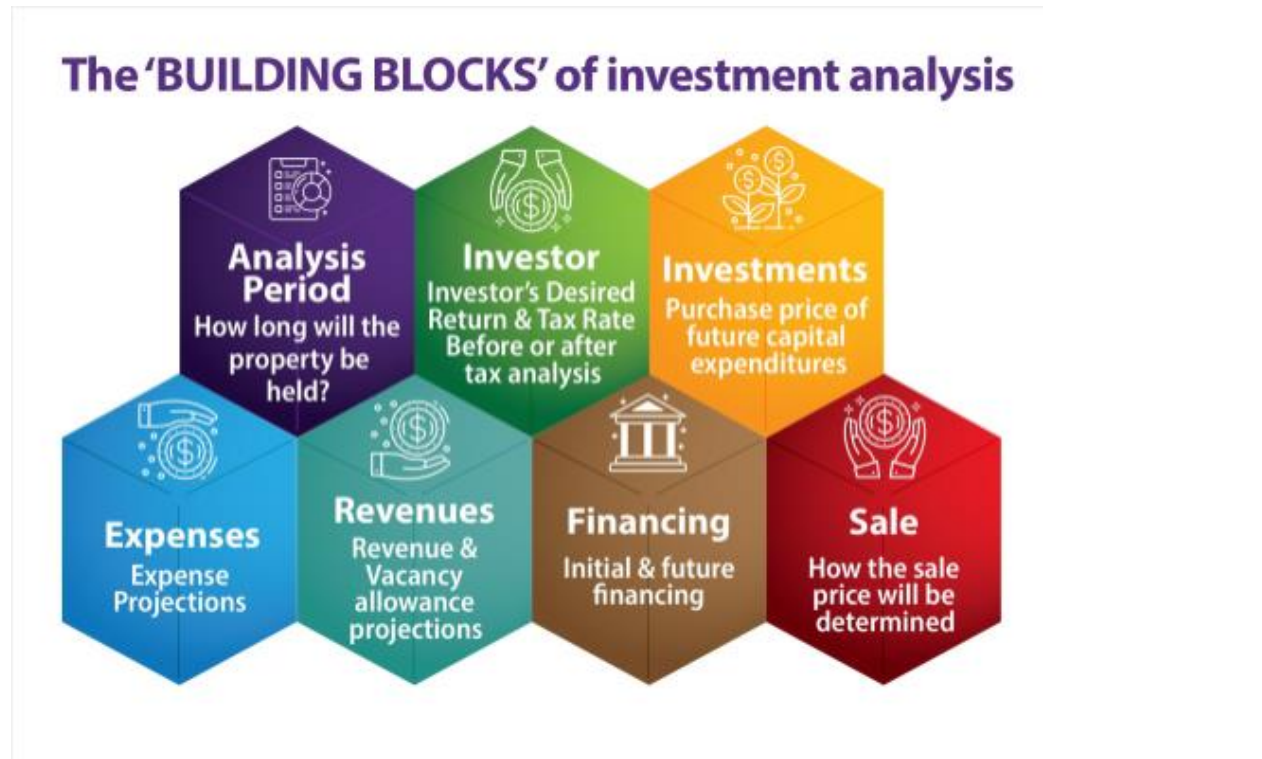
END

Developing the Net Cash Flow and Internal Rate of Return (IRR). Example

Q1.

What are the steps involved in carrying out real estate investment analysis?

Your answer



Q2.

Developing the Net Cash flows and Internal Rate of Return (IRR). Example on the flip side.

Your answer

You have a choice to invest in either Property A and B. Each property will generate the following net cash flows. Which one would provide you with the best overall financial return?

Property A because the Internal Rate of Return (IRR) is 11.62% compared to 10.88% for Property B

Net Cash Flow

Year	Property A	Property B	
0	\$<1,000,000>	\$<1,200,000>	← (Purchase Price - Mortgage = Equity)
1.	81,000	58,000	← (Net Operating Income - Debt Service)
2.	83,000	60,000	(= Cash Flow before Tax)
3.	84,000	61,000	
4.	87,000	67,000	
5.	87,000	68,000	
6.	89,000	69,000	
7.	<10,000>	70,000	
8.	90,000	112,000	
9.	92,000	115,000	
10.	93,000	117,000	
11.	96,000	119,000	
12.	1,950,000	2,500,000	← (Cash Flow Yr.12 + Sale Proceeds)
Return (IRR)	11.62% ✓	10.88%	Internal Rate of Return (IRR)

END

The Impact of Financial Leverage

Q1.

Briefly explain financial leverage to a client using an example.

Your answer

Financial leverage is using financing to purchase a property and causes the return or loss to be amplified. Sometimes called trading on equity.

Examples

No financial leverage. Mary buys 40 acres land of industrial land for \$1,000,000 paying cash.

Financial Leverage. Bill buys 160 acres paying \$4,000,000 by borrowing \$3,000,000 from the bank and providing equity or cash of \$1,000,000.

In addition he pays \$50,000 of interest each year.

Q2.

Using the following information calculate the profit.

Mary buys 40 acres land of industrial land for \$1,000,000 paying cash. Two years later the property value has increased 10% and she sells it for \$1,100,000. Calculate her profit.

Bill buys 160 acres paying \$4,000,000 by borrowing \$3,000,000 from the bank and providing equity or cash of \$1,000,000.

In addition he pays \$50,000 of interest each year. Two years later the property value has increased 10% and he sells it for \$4,400,000. Calculate Bill's profit

Your answer

Mary's profit. $\$1,100,000 - 1,000,000 = \$100,000$

Bill's profit

Sale price	\$4,400,000
Less: Purchase price	4,000,000
Two years interest	<u>100,000</u>
	\$ 300,000

Using financial leverage Bill's profit was \$300,000 compared to Mary's of \$100,000

This example illustrates the advantage of financial leverage as long as the value of the property increases.

What if the value of the property decreases? *See next flash card*

Q3.

Using the following information calculate the investment loss.

Mary buys 40 acres of industrial land for \$1,000,000 paying cash. Two years later the property has decreased in value by 10% and she sells it for \$900,000. Calculate her loss.

Bill buys 160 acres paying \$4,000,000 by borrowing \$3,000,000 from the bank and providing equity or cash of \$1,000,000. In addition he pays \$50,000 of interest each year. Two years later the property has decreased in value by 10% and he sells it for \$3,600,000. Calculate his loss.

Your answer

Mary's loss. $\$900,000 - 1,000,000 = <\$100,000>$

Bill's loss.

Sale price	\$3,600,000
Less: Purchase price	4,000,000
Two years interest	100,000
Loss	<\$ 300,000>

Using financial leverage Bill's loss was \$300,000 compared to Mary's of \$100,000

This example illustrates the disadvantage of financial leverage if the value of the property decreases?

Financial leverage increases the Return on Investment if the property value increases and magnifies the profit.

Financial leverage decreases the Return on Investment if the property value decreases and magnifies the losses.

It's called the DOUBLE EDGE SWORD of FINANCIAL LEVERAGE

Q4.

Write down the two financial measures that you can use to identify the risk associated with using financial leverage.

Your answer

The two financial measures we can use to evaluate the risk associated with using financial leverage are:

Debt Service Coverage Ratio (DSCR) = $\frac{\text{Net Operating Income (NOI)}}{\text{Debt Service (P+ I)}}$

Default Ratio (Breakeven point) = $\frac{(\text{Operating Expenses} + \text{Debt Service})}{\text{Effective Gross Income}} \times 100$

Q5.

How do we use the Debt Service Coverage Ratio (DSCR) and the Default Ratio (Breakeven point) to identify the financial risk associated with using financial leverage?

Your answer**DEBT SERVICE COVERAGE RATIO (DSCR)**

A 1.50 DSCR would indicate low financial risk. The Net Operating Income would have drop by approximately 50% before a negative cash flow would develop

A DSCR of 1.05 would indicate high financial risk. A small decrease of 5% in the Net Operating Income created by a low rent increase or an increase in the operating costs would quickly create a negative cash flow

DEFAULT RATIO (BREAKEVEN POINT)

A Default Ratio of 50% which means the building has to be 50% rented to breakeven would indicate low financial risk

A high Default Ratio of 85% means that the building has to be 85% rented to breakeven which would indicate high

Q6.

An investor buying an office building is considering three financing options.

Based on the following which financing option generates the:

- 1) Highest Return on Investment (Internal Rate of Return)?
- 2) The most risk

	Debt Service Coverage Ratio	Debt Service Breakeven Point
Option A 50% financing	1.49	79%
Option B 60% financing	1.24	86%
Option C 70% financing	1.06	94%

Your answer

	Debt Service Coverage Ratio	Debt Service Breakeven Point
Option A 50% financing	1.49	79%
Option B 60% financing	1.24	86%
Option C 70% financing	1.06	94%

Highest return on investment (IRR). Option C.

Uses the highest financial leverage

Most Risky. Option C has the lowest Debt Service Coverage Ratio of 1.06 and a Default Ratio 94% and is the most risky financing option.

Conclusion

Using a high level of financial leverage increases the return on investment (IRR) but significantly increases the risk of experiencing a negative cash flow.

Q7.

How does the financial leverage influence the Return on Investment (IRR)?

	Loan to Value Ratio	Debt Service Coverage Ratio	Default Ratio Breakeven Point	Internal Rate of Return (IRR)
Option A 50% financing	50%	1.49	79%	?
Option B 60% financing	60%	1.24	86%	?
Option C 70% financing	70%	1.06	94%	?

Your answer

	Loan to Value Ratio	Debt Service Coverage Ratio	Default Ratio Breakeven Point	Internal Rate of Return (IRR)
Option A 50% financing	50%	1.49	79%	13.32%
Option B 60% financing	60%	1.24	86%	14.61%
Option C 70% financing	70%	1.06	94%	16.19%

Illustrates the impact of financial leverage.

A 50% Loan to Value Ratio (LTV) generates an IRR of 13.32%

Using a 70% Loan to Value Ratio (LTV) generates 16.19% IRR which is an increase of 22% over the Option A IRR of 13.32%

but increases the investment risk. The Default Ratio or Breakeven Point has gone from 79% for option A to 94% for option C.

Q8.

Which is the more risky financing option?

	Loan to Value Ratio	Debt Service Coverage Ratio	Default Ratio Breakeven Point	Internal Rate of Return (IRR)
Option A 50% financing	50%	1.49	79%	13.32%
Option B 60% financing	60%	1.24	86%	14.61%
Option C 70% financing	70%	1.06	94%	16.19%

Your answer

	Loan to Value Ratio	Debt Service Coverage Ratio	Ratio Breakeven Point	Internal Rate of Return (IRR)
Option A 50% financing	50%	1.49	79%	13.32%
Option B 60% financing	60%	1.24	86%	14.61%
Option C 70% financing	70%	1.06	94%	16.19%

Option C is much more risky than Option A because the Debt Coverage Ratio is 1.06 compared 1.49 for financing Option A and the default Ratio has gone from 50%.

Increasing the financing increases the return on investment (IRR) but increases the financial "Risk" of experiencing negative cash flows.

Q9.

How does the use of financial leverage impact the cash flow before tax?

Your answer

The impact of financial leverage on the cash flow before tax

	Financial Leverage	Yearly Cash Flow before Tax				
		1	2	3	4	5
Option A	50% LTV	86,212	94,268	102,647	111,405	121,395
Option B	60% LTV	50,741	58,797	67,146	75,933	85,924
Option C	70% LTV	15,269	23,325	31,674	40,462	50,452

In year 1 the cash flow for Option A using a 50% LTV is \$86,212 which decreases to \$15,269 for Option C which uses a 70% LTV.

From a cash flow perspective Option A is less risky than Option C. For Option A the Net Operating Income has to drop by \$86,212 before a building starts to experience a negative cash flow.

For Option C using a 70% LTV if the Net Operating Income drops by more than \$15,269 the building will experience a negative cash flow. A small decrease in rents or increase in the vacancy rate or a small increase in the operating cost would quickly create a negative cash flow. A risky proposition

END

The Importance of Professional Engineering Inspections

Q1.

There are two ways to calculate the Gross Income Multiplier.
What are they and what is the difference?

Your answer

Buildings are very complex systems consisting of:

The structure, interiors, exterior cladding, roof etc.

Underground parking

A host of complex systems including:

Heating, ventilation and air conditioning systems (HVAC)

Elevators, security, fire alarm systems and many more.

Repairs, replacement and upgrading building systems such as an elevator is very costly.

A buyer needs to find out if there will be costly expenditure to be made after buying the building by engaging professional engineers to inspect the building.

Q2.

What is concrete rot or cancer?

Your answer

Answer

Sometimes reinforced concrete floors, columns, beams etc. can self-destruct from a variety of causes requiring costly repairs which may even involve moving the tenants out of the building

Concrete can be damaged by aggregate expansion, salt, bacterial corrosion, calcium leaching, physical damage and chemical damage.

Concrete cancer is caused when the steel reinforcing within a concrete slab begins to rust. As the steel rusts it expands, displacing the concrete around it, causing it to become brittle and crack.

Q3.

Show me an example of concrete rot or cancer?

Your answer

An example of concrete rot or cancer and damage to the rebar

**Q4.**

Post tension floor slab systems are widely used in concrete buildings.

- 1) Briefly describe the post tensioning system
- 2) In older buildings there have been many cases of the failure of post tensioned floor system.

What causes the failure?

Your answer

A post tensioning system is a method of constructing floor slabs where a steel cable is inserted inside a plastic tube, the concrete poured, and once set, the steel cables are stretched and then clamped. Creating tension in the floor slab, making it much stronger. The main advantage is a thinner floor slab and greater distance between the column spacing, creating wider spans which is advantageous for office and industrial buildings.



The cable can fail if water leaks into the cable, causing the steel cable to rust and snap. This will require very costly replacement of the cables.

Q5.

Post tensioning installation example

Your answer



END

Valuing Income Properties with development potential

Q1.

Examples of income properties with development potential.

See the flip side

Your answer

The top two photos show existing income properties that are destined to be replaced with new developments like the two photos below.



Q2.

Example.

Properties with development potential.

Your answer

A current trend in large cities where there is a shortage of land is to replace aging super markets with hi-rise condominium towers with retail space on the ground level.



Q3.

What are the two ways to value an income property?

Your answer

1. The "Income Approach" using either:
 - a) The Cap Rate approach
 - b) Long term real estate investment or discounted cash flow analysis

2. The Land Residual or Back Door approach

Q4.

What does the "Land Residual" or the "Back Door" approach to valuing land mean?

Your answer

Land Residual approach

It means that the value of the land is what is left over after deducting all the development costs and a developer's profit from the sale price of the new development.

Back Door approach

We work backwards from the sale price of the finished development to establish the land value.

The Land Residual and the back door approach are just different names for the same process for valuing land.

Q5.

What are the step involved in carrying out the Land Residual or Back Door approach to establishing land value?

Your answer

This is an example of the Back Door or Land Residual Approach to valuing land where we work backwards from the sales price to calculate the land value by deducting the development costs and profit.

Condominium Development Example

Market Value. 30 units x \$350,000	\$10,500,000
Less: Development Costs	
Site clearing and preparation	
Construction	
Financing	
Professional fees	
City permits and fees	
Miscellaneous	6,575,000
Real estate fees	525,000
Developer's Profit	<u>1,900,000</u>
Land Value (Residual)	\$ 1,500,000

Q6.

How can you quickly tell whether you should use the “Income” or the “Land Residual” approach to determine the value on an income property?

Your answer

Ask this question.

If the building was destroyed what would you replace it with?

A similar building. Use the Income approach to determine the value

A very different building. Use the Land Residual or Back Door approach

If the Cap Rate calculated from the asking price is very low like 1.5% it’s likely a development site.

Is the property at its highest and best use?

Take a look at the City’s assessed value for establishing property tax.

Q7.

A really old, somewhat run down three story office building situated on a large site in a highly desirable area is up for sale for \$5,000,000.

The zoning allows a 9 story building to be constructed on the site.

The Net Operating Income (NOI) is \$45,000 per year.

The market Cap Rates for newer office buildings is 5%.

Calculate the Cap Rate based on the existing buildings Net Operating Income (NOI) and the asking price.

The property tax assessment value was \$4,700,000

Should the property value be based using the Income Approach or the Land Residual approach?

Your answer

Using the Income approach

$$\begin{aligned} \text{Cap Rate} &= \frac{\text{Net Operating Income} \times 100}{\text{Asking Price}} \\ &= \frac{\$45,000 \times 100}{\$5,000,000} \\ &= 0.9\% \text{ Cap Rate} \end{aligned}$$

Because the Cap Rate is extremely low at 0.9% Cap Rate and market Cap Rates are 5% indicates that this is a development site and should be valued using the Land Residual Approach.

This is also supported by the property tax assessment of \$4,700,000

Q8.

A extreme example of the value of an exiting income property with development potential.

A property with a popular restaurant and the adjacent parking lot sold for \$245,000,000. Why?



Your answer

This is why



Q9.

Not all sites have development potential. Why?

Your answer

Some sites cannot be developed economically because of the zoning regulations such as a requirement to provide underground parking, side and front yard setbacks etc.

As an example, a 45 foot wide site with multifamily zoning that requires underground parking is extremely difficult and costly to develop such as the one shown below.

This is a risky investment. If the building was destroyed by fire it's unlikely the building can be replaced economically.

**Q10****TIP**

Always check the potential for a site assembly by looking at the properties on each side and at the rear of the site if there is no alley.

See the example on the flip side.

Your answer

Example of a property with little development potential or site assembly potential.

It would be very costly to replace this old non-conforming building with a new condominium development which would require underground parking and deeper side yard and front yard setback. Significantly reducing the buildable area.



Q11.
TIP

Always check the potential for a site assembly by looking at the properties on each side and at the rear of the site if there is no alley.

See the example on the flip side.

Your answer

Any one of these three rental apartment buildings has good long term assembly potential by acquiring the adjacent building(s) creating a larger and more economical development.



END

CLASS QUIZ No. 1**Q1.**

Using the following information calculate the Cap Rate

Net Operating Income (NOI): \$200,000 per year
Sale Price: \$4,000,000

Start by writing down the formula for calculating the Cap Rate

Your answer

Q2.

Put an "X" against the expenses that should be removed from the Income & Expense Statement when using the Net Operating Income (NOI) and the Cap Rate to calculate the value of the property?

.

Insurance

Property taxes

Upgrading the elevator

Elevator service contract

Landscaping service contract

Mortgage Interest costs

Security services

Painting 40% of the building exterior

Property management

Q3.

Calculate the Return on Equity (ROE) or Cash on Cash Return using the following information.

Net Operating Income (NOI): \$125,000 per year

Debt Service: \$75,000 per year

Purchase Price: \$1,700,000?

Mortgage: \$1,000,000

Start by writing down the formula

Your answer

Q4.

From a BUYERS perspective which do they prefer?

A higher or a lower Cap Rate?

Circle your selection

Q5.

Using the following information calculate the:

Loan to Value Ratio(LTV)

Debt Service Coverage Ratio (DSCR)

Purchase Price: \$2,500,000

First Mortgage: \$1,500,000

Net Operating Income (NOI): \$130,000 per Yr.

Debt Service: \$100,000 per Yr. Annual (P +I) payment

Start by writing down the formulas

Your answer

Q6.

Calculate the Base Rent per Sq. Ft per Yr. for an office building using the following information:

Base Rent: \$200,000 per Yr. based on the "Rentable Area"

Usable Area: 9,000 Sq. Ft. This is the area occupied by the tenant.

Add on Factor or Gross up Factor: 15%

Your answer

Q7.

The lower the Cap Rate the “higher” or “lower” the property value?

Circle your selection

Q8.

The Cap Rate is an excellent approach to valuing Property A which has the following lease arrangement. True or False?

Circle your selection



Q9.

A tenant is entering into a Triple Net Rent (NNN) and the landlord has offered the tenant three months free rent.

The tenant interprets this to mean that during the Free Rent period of three months that there are no payments made to the landlord.

Based on the typical arrangements for free rent is the tenant’s assumption correct?

Yes or No

Circle your answer

Q1.0

When calculating the Cap Rate for a commercial building leasing fees should be excluded from the Income & Expenses statement when using the Cap Rate to determine the value.

True or False?

Circle your answer

Q1.1

You are considering buying a building which has a Net Operating Income (NOI) of \$230,000.

If you wish to buy the property for a 6.00% Cap Rate, how much would you pay for the property?

Q1.2

The Loan to Value Ratio (LTV):

- a) Always determines the loan amount
- b) Determines the maximum loan subject to the Debt Service or Coverage Ratio
- c) Is never used by a commercial lender because they always use the Debt Service or Coverage Ratio to determine the loan amount to determine the loan amount

Tick your Your answer

Q1.3

Which Debt Service Coverage Ratio provides the highest loan amount?

- a) 1.19
- b) 1.25
- c) 1.30

Tick the correct Your answer a)___ b)___ c)___

Q1.4

Which Debt Service Coverage Ratio potentially indicates the highest financial risk?

- a) 1.31
- b) 1.07
- c) 1.15
- d) 1.20

Tick the correct Your answer a)___ b)___ c)___ d)___

Q1.5

A "Triple Net (NNN)" lease means that the tenant pays all of the landlords operating expenses.

True False

Circle your Your answer

Q1.6

In a multi-tenant office building the landlord usually calculates the rent based on the Usable Area because this is the area occupied by the tenant.

True False

Circle your Your answer

Q1.7

How much would you pay for \$130,000 per year forever if wanted a 10% return?

- a) \$1,300,000
- b) \$130,000
- c) \$13,000,000
- d) None of these
- e) \$13,000

Tick the correct answer

Q1.8

Which would you rather have?

- a) Receive \$750,000 today
- b) Receive \$750,000 in 5 years time

Tick the correct answer a) b)

Q1.9

The diagram below shows the projected lease rates and renewals for two comparable properties. Which is the most valuable property?

- a) Property A
b) Property B

Tick the correct Your answer a)___ b)___

**Q2.0**

From a financial perspective which investment provides the highest:

- Return (IRR) Investment A or Investment B
Risk Investment A or Investment B

Circle your Your answers

Year	Investment A	Investment B
0	<960,000>	<960,000>
1	230,000	320,000
2	250,000	300,000
3	275,000	290,000
4	290,000	275,000
5	300,000	250,000
6	320,000	230,000
Total	\$ 1,665,000	\$ 1,665,000

Q2.1

How would you value this property?



Use the income approach such as the Cap Rate or Discounted Cash Flow Analysis approach

Use the "Development Analysis" or "Land Residual" approach

Tick the correct Your answer a)___ b)___

END of Quiz No. 1