INVESTIT ACADEMY IN-HOUSE
COMMERCIAL REAL ESTATE EDUCATION

PARTICIPANT'S PACKAGE

Investit Academy
www.investitacademy.com
Neil Osborne
604-988-9964
Email:nosborne@investitsoftware.com

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WELCOME

Thanks for participating in the Investit Academy In-House commercial program.

Getting started in commercial real estate is a challenge as there is a **lot to learn**.

The in-house Investit Academy program introduces the fundamentals of real estate investment analysis and valuation and discusses the issues, complexities and dangers involved in listing and selling income properties fast tracking you to commercial success.

Learning Processes
It is well known that we all have different ways we like to learn.

Recognizing this and to make the Investit Academy commercial in-house sessions interesting and to enhance the learning process the sessions consists of:

1) Video segments covering specific commercial topics
2) Flash cards sets which is a great way to learn basic terms and formulas
3) Class exercises
4) Quiz. At the end of the third session there is a short quiz to test your understanding of the most common terms and formulas used in commercial real estate
5) 101 How to Analyze and Value Income Properties manual which is ideal for taking notes and for a later reviews

Calculator
You will need to bring a calculator. In can be any kind of calculator. It doesn't have to be a financial calculator.

Remember the formulas
There are a few really important financial measures such as the Cap Rate that you need to learn and can write down and apply without referring to your manual or notes. They are:

Gross Income Multipliers
Cap Rate
Calculation of the Net Operating Income
Return on Equity. Also called Cash on Cash Return and Equity Dividend Rate
Default Ratio or Break-even Point
Ratios used by lender to determine loan amounts.
Loan to Value Ratio (LTV)
Debt Service Coverage Ratio. Also called Debt Service Ratio or Debt Coverage ratio
Operating Expenses Ratio

Skills and benefits obtained from the in-house sessions

1. How to analyze and restructure “Income & Expense Statements” so that they more realistically represent the financial performance of the property

2. How to use the various financial measures such as the Gross Income Multiplier, Cap Rate, etc., to value an income property and appreciate the limitations of these simplistic approaches

3. Identify investment risks

4. Understand how important it is for the buyer of income properties to obtain professional engineering, tax and legal advice

The knowledge and skills developed during the in-house sessions will improve your ability to value, list and sell income properties and put deals together. Fast tracking you to success in commercial real estate.

Real Estate Investment Analysis Formulas
with sample calculations

INCOME &EXPENSE STATEMENT

Income
Potential Gross Income (PG1) $__________
Less: Vacancy and Bad Debt Allowance __________
Equals: Effective Gross Income (EGI) $__________
Operating Expenses
Exclude: Depreciation
Mortgage Payments
Non-Operating Expenses
Capital Expenditures $__________
Net Operating Income (NO1) __________
Less: Debt Service (P + I) __________
Cash Flow Before Tax (CFBT) __________
Less: Income Taxes __________
Equals Cash Flow After Tax (CFAT) $__________

FINANCIAL MEASURES
Used to determine the value of income properties

Potential Gross Income Multiplier (PGIM)
Also called Potential Gross Rent Multiplier (PGRM)

$$PGIM = \frac{\text{Market Value}}{\text{Potential Gross Income}} = \frac{MV}{PGI}$$

OR

$$\text{Market Value} = \text{Potential Gross Income} \times PGIM = PGI \times PGIM$$

Effective Gross Income Multiplier (EGIM)

Also called Effective Gross Rent Multiplier (EGRM)

$$\text{EGIM} = \frac{\text{Market Value}}{\text{Effective Gross Income}}$$

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

OR

$$\text{Market Value} = \text{Effective Gross Income x EGIM}$$

$$= \text{EGI x EGIM}$$

Net Income Multiplier (NIM)

$$\text{NIM} = \frac{\text{Market Value}}{\text{Net Operating Income}}$$

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

OR

$$\text{Market Value} = \text{Net Operating Income x NIM}$$

$$= \text{NOI x NIM}$$

Cap Rate

Capitalization Rate (Cap Rate)

Also called Broker's Yield

$$\text{Cap Rate (\%)} = \frac{\text{Net Operating Income x 100}}{\text{Market Value}}$$

$$\frac{\text{NOI x 100}}{\text{MV}}$$

OR

$$\text{Market Value} = \frac{\text{Operating Income x 100}}{\text{Cap Rate (\%)}}$$

$$= \frac{\text{NOI x 100}}{\text{Cap Rate (\%)}}$$

Return on Equity or Cash On Cash

Return on Equity (ROE)

Also called:
Equity Dividend Rate (EDR) Term used by appraisers
Cash on Cash

$$\text{ROE}\ (\%) = \frac{(\text{Net Operating Income} - \text{Debt Service}) \times 100}{\text{Equity}}$$

$$= \frac{\text{Cash Flow Before Tax} \times 100}{\text{Equity}}$$

$$= \frac{(\text{NOI}-\text{DS}) \times 100}{(\text{MV}-\text{Mtge.})}$$

Equity = Market Value – Mortgage
Debt Service = Principal & Interest Payment

OR

$$\text{Market Value} = \frac{(\text{NOI-DS}) \times 100}{\text{ROE}\ (\%)} + \text{Mortgage}$$

Default Ratio or Break-even Point

Default Ratio (Break-even) (%)

Using Potential Gross Income

$$= \frac{(\text{Operating Expenses} + \text{Debt Service}) \times 100}{\text{Potential Gross Income (PGI)}}$$

Using Effective Gross Income

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

Operating Expense Ratio

$$= \frac{\text{Operating Expense} \times 100}{\text{Effective Gross Income}}$$

Used to check if the expenses are realistic

FINANCE MEASURES

Used by lenders to determine loan amounts for income properties.

Debt Service Ratio (DSR)
Also called Debt Coverage Ratio (DCR)
or Debt Service Coverage Ratio (DSCR)

Debt Service Ratio

$$\text{Debt Service Ratio (DSR)} = \frac{\text{Net Operating Income}}{\text{Debt Service}}$$

Debt Service = Principal & Interest Payments

Loan to Value Ratio

$$\text{Loan to Value Ratio \% (LTV)} = \frac{\text{Loan Amount x 100}}{\text{Market Value}}$$

GENERAL FINANCING MEASURES

Rental Apartment Building Measures.

1. Price per Unit
2. Price per Sq. Foot (Using Suite Areas)
3. Rents per Sq. Foot per month
4. Operating Costs
    a. Operating Costs per Unit per Year
    b. Operating Cost per Sq. Foot per Year
5. Operating Expense Ratio (OER) = $\frac{\text{Operating Expense x100}}{\text{Effective Gross Income}}$

    Used to check if the expenses are realistic

Commercial Real Estate. Sample Calculations

The following examples illustrate how to use the real estate formulas.

In Example No.1 the information is obtained for the property and the financial measures calculated.

In Example No. 2 the financial measures such as the Cap Rate are obtained for comparable sales and are used to calculate the Market Value for the subject property.

Example No. 1

Sale Price (Market Value):	$3,165,000
Potential Gross Income:	$306,000
Vacancy & Bad Debt Allowance:	4.5%
Operating Expenses:	$58,000
Mortgage:	$2,056,000
Mortgage Payment (P+i):	$180,538
Number of Suites:	30
Total Rentable Area:	24,000 Square feet

Note: All figures are annual

Calculate:
- Potential Gross Income Multiplier (PGIM)
- Effective Gross Income Multiplier (EGIM)
- Net Income Multiplier (NIM)
- Capitalization Rate (Cap Rate)
- Return on Equity (ROE)
- Default Ratio (Breakeven) based on:
  - Potential Gross Income
  - Effective Gross Income
- Debt Service Ratio (DSR)
- Loan to Value Ratio
- Price per Suite
- Price per Square Foot
- Rent per Square Foot per Month
- Operating Cost per Unit per Year
- Operating Cost per Square Foot per Year
- Operating Expense Ratio (OER) based on:
  - Potential Gross Income
  - Effective Gross Income

1. Construct the Annual Income and Expense Statement

Potential Gross Income	$306,000
Less Vacancy & Bad Debt Allowance (4.5%)	13,770
Effective Gross Income	$292,230
Operating Expenses	58,000
Net Operating Income	$234,230
Less; Debt Service (P+i)	180,538
Cash Flow Before Tax	$ 53,692

2. Calculate the Financial Measures

Potential Gross Income Multiplier (PGIM):

$$PGIM = \frac{MV}{PGI} = \frac{3,165,000}{306,000}$$

$$= 10.34$$

Effective Gross Income Multiplier (EGIM):

$$EGIM = \frac{MV}{EGI} = \frac{3,165,000}{292,230}$$

$$= 10.83$$

Net Income Multiplier (NIM):

$$NIM = \frac{MV}{NOI} = \frac{3,165,000}{234,230}$$

$$= 13.51$$

Capitalization Rate (Cap Rate):

$$\text{Cap Rate} = \frac{NOI}{MV} = \frac{234,230 \times 100}{3,165,000}$$

$$= 7.40\%$$

Return on Equity (ROE) Cash on Cash on Cash

$$ROE = \frac{(NOI - DS) \times 100}{EGI} =$$

$$= \frac{\text{Cash Flow Before Tax} \times 100}{\text{Equity}}$$

$$= \frac{53{,}692 \times 100}{(3{,}165{,}000 - 2{,}056{,}000)}$$

$$= 4.84\%$$

Default Ratio (Breakeven)

Based on Potential Gross Income:

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

$$= \frac{(58{,}000 + 180{,}538) \times 100}{306{,}000}$$

$$= 77.95\%$$

Default Ratio (Breakeven)

Based on Effective Gross Income:

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

$$= \frac{(58{,}000 + 180{,}538) \times 100}{292{,}230}$$

$$= 81.63\%$$

Debt Service Ratio (DSR)

Also called Debt Coverage Ratio (DCR)
Debt Service Coverage Ratio (DSCR)

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

$$= \frac{234{,}230}{180{,}538}$$

$$= 1.30$$

Loan to Value Ratio %

$$\text{Loan to Value Ratio} = \frac{\text{Loan Amount x 100}}{\text{Market Value}}$$

$$= \frac{2{,}056{,}000 \text{ x } 100}{3{,}165{,}000}$$

= 64.96%

Price per Unit

$$\text{Price per Unit} = \frac{3{,}165{,}000}{30}$$

= $105,500

Price per Square Foot

$$\text{Price per Sq. Ft} = \frac{3{,}165{,}000}{24{,}000}$$

= $131.88

Rent per Sq. Foot per Mo.

$$\text{Rent per Sq. Ft} = \frac{306{,}000}{24{,}000 \text{ x } 12}$$

= $1.06

Operating Costs per Unit per Year

$$\text{Operating Costs per Unit} = \frac{\text{Operating Costs}}{\text{No. of Units}}$$

$$= \frac{58{,}000}{30}$$

= $1,933 per Unit

Operating Cost per Square Foot per Year

$$\text{Operating Cost per Sq. Ft per Yr.} = \frac{\text{Operating Costs}}{\text{Rentable Area}}$$

$$= \frac{58{,}000}{24{,}000}$$

$$= \$2.42 \text{ per Sq. Ft}$$

Operating Expense Ratio (OER)

Based on Potential Gross Income:

$$\text{Operating Expense Ratio} = \frac{\text{Operating Expenses x 100}}{\text{Potential Gross Income}}$$

$$= \frac{58{,}000 \text{ x } 100}{306{,}000}$$

$$= 18.95\%$$

Based on Effective Gross Income:

$$\text{Operating Expense Ratio} = \frac{\text{Operating Expenses x 100}}{\text{Effective Gross Income}}$$

$$= \frac{58{,}000 \text{ x } 100}{292{,}230}$$

$$= 19.85\%$$

Summary

Potential Gross Income Multiplier (PGIM):	10.34
Potential Gross Income Multiplier (EGIM):	10.83
Net Income Multiplier (NIM):	13.51
Capitalization Rate (Cap Rate)	7.40%
Return on Equity (ROE)	4.84%
Default Ratio (Break even) based on:	
Potential Gross Income	77.95%
Effective Gross Income	81.63%
Debt Service Ratio (DSR)	1.30
Loan to Value Ratio	64.96%
Price per Suite	$105,000
Price per Square Foot	$131.88
Rent per Square foot per month	$1.06
Operating Cost per Suite per Year	$1,933
Operating Cost per Square Foot per Year	$2.42
Operating Expense Ratio (OER) based on:	
Potential Gross Income	18.95%
Effective Gross Income	19.85%

Example No 2.

Potential Gross Income:	$244,800
Vacancy & Bad Debt Allowance:	5.0%
Operating Expenses	$49,300
Mortgage	$1,685,000
Mortgage Payment (P+i)	$147,500
Number of Suites	24
Total Rentable Area	18,720 Square feet

Note: All figures are annual

Calculate the Market Value using the following financial measures

Effective Gross Income Multiplier (EGIM): 9.30
Net Income Multiplier (NIM): 12.50
Capitalization Rate (Cap Rate): 8.00%
Return on Equity (ROE): 5.57%

1. Start by constructing the Annual Income and Expense Statement

Potential Gross Income	$244,800
Less Vacancy & Bad Debt Allowance (5.0%)	12,240
Effective Gross Income	$232,560
Operating Expenses	49,300
Net Operating Income	$183,260
Less; Debt Service (P+i)	147,500
Cash Flow Before Tax	$ 35,760

2. Calculate the Market Value based on the:

Effective Gross Income Multiplier (EGIM):

MV = Effective Gross Income x EGIM

= 232,560 x 9.30

= $2,162,808

Net Income Multiplier (NIM):

MV = Net Operating x NIM

= 183,260 x 12.50

= $2,290,750

.

Capitalization Rate (Cap Rate):

$$MV = \frac{\text{Net Operating Income x 100}}{\text{Cap Rate}}$$

$$= \frac{183{,}260 \times 100}{8.0\%}$$

= $2,290,750

Return on Equity (ROE):

$$MV = \frac{(NOI - DS) \times 100}{ROE\ (\%)} + \text{Mortgage}$$

$$= \frac{(183{,}260 - 147{,}500) \times 100}{5.57\%} + 1{,}685{,}000$$

= $2,327,011

FLASH CARD SETS. QUESTIONS & ANSWERS

Gross Income Multiplier calculations.

Q1
There are two ways to calculate the Gross Income Multiplier.
What are they and what is the difference?

Answer

Q2
Write down the formulas for the:
Gross Income Multiplier (GIM)
Effective Gross Income Multipliers (EGIM)

Answer

Q3
If the Sale price of an income property is $1,000,000 and Potential Gross Income is $100,000 what is the Potential Gross Income Multiplier (PGIM**)?**

Answer

Q4
If the Sale price of an income property is $1,000,000 and Potential Gross Income is $100,000 and the Vacancy and Bad Debt Allowance is 10% what is the Effective Gross Income Multiplier (GIM)?

Answer

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?

Answer

Q6
Based on the following information calculate the potential sales price using:

1) Potential Gross Income Multiplier (PGIM) of 11
2) Effective Gross Income Multiplier (EGIM) of 13

Potential Gross Income: $100,000
Vacancy and Bad Debt Allowance: 10%

Answer

Q7

What does Bad Debt Allowance refer to?

Note. Also called “Credit Losses”

Answer

.

END OF SET

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

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Answer

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)

Answer

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?

Put an **"X"** against the expenses that should be removed.

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

Q4

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

Answer

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): $100,000
Cap Rate: 5% (from comparables)

Answer

Q6

Using the following information calculate the Cap Rate

Net Operating Income (NOI): $100,000
Sale Price: $2,000,000

Answer

END OF SET

Understanding Cap Rates

Q1
The lower the Cap Rate the higher or lower the property value**?**
__Circle your selection__

Q2
Using an Net Operating Income (NOI) of $100,000

Calculate the property value using a:

1) 5% Cap Rate
2) 10% Cap Rate

Answer

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?
__Circle your selections__

Q4.
What are two fundamental assumptions that are made when using the Cap Rate to determine the value of an income property?

Answer

Q5
Why would an investor buy an income property at a 3.00% Cap Rate and finance with a first mortgage at 5.00%?

Answer

Q6
The higher the perceived risk the **HIGHE**R or **LOWER** the Cap Rate?
Circle your selection

Q7
The higher the anticipated **CAPITAL APPRECIATION** the **HIGHER** or **LOWER** the Cap Rate**?**
Circle your selection

Q8
How does a HIGH Cap Rate effect the amount of EQUITY (Down Payment) needed by the investor?

Answer

END OF SET

Return on Equity and Cash on Cash calculations

Q1

The Return on Equity (ROE) goes under a number of different names.

Write them down.

Answer

Q2

Write down the formula for calculating Return on Equity (ROE) or Cash on Cash Return.

Answer

Q3

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

> Net Operating Income (NOI): $150,000 per year
> Debt Service: $100,000 per year
> Purchase Price: $1,500,000?
> Mortgage: $1,000,000

Answer

END OF SET

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

---

Answer

Q2

Using the following information calculate the:

1) Loan to Value Ratio(LTV)

2) Debt Service Coverage Ratio (DSCR)

Purchase Price: $3,300,000
First Mortgage: $2,300,000
Net Operating Income (NOI): $210,000 per Yr.
Debt Service: $165,000 per Yr. Annual (P +I) payment

Answer

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?

Answer

Q4

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

Loan to Value Ratio (LTV)

Debt Service Coverage Ratio (DSCR)

Answer

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**

Circle or tick your answer

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?

Answer

END OF SET

Examining Operating Expenses

Q1

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

Answer

Q2

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

Answer

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)?

Tick or circle your answer

Q4

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

Potential Gross Income (PGI): $100,000 per Yr.

Vacancy: 5.00%

Operating Expenses: $35,000 per Yr.

Answer

Q5

What are typical Operating Expense Ratios for:

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

Answer

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 OF SET

Calculating and using the Default Ratio (Breakeven Point)

Q1

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

Answer

Q2

Answer

Q3

How do we use the Default Ratio or Breakeven Point?

Answer

END OF SET

FLASH CARD SET Quick Tips for analyzing Income & Expense Statements

Q1

What is the best way to analyze individual revenue and expenses for a Rental Apartment Building?

Answer

Q2

List operating expenses which can be;

a) quickly verified
b) hard to verify

Answer

Operating expenses that can be quickly verified

Operating Expenses that can hard to verify

END OF SET

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.

Answer

1.______________________________

2.______________________________

3.______________________________

Q2
Calculate the price that a buyer might offer using the following information

Net Operating Income $200,000
Market Cap Rate: 5.00% (From comparables)

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

The engineers estimated that there is $700,000 of immediate and urgent repairs
Including replacing the roof and caulking the leaking windows

---

Answer

END OF FLASH CARD SET

The importance of professional engineering inspections

Q1
Why is it important for a buyer to engage a professional engineering firm to inspect a building?

Answer

Q2
What is concrete rot or cancer?

Answer

Q3
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 failing. What causes the failure?

Answer

END OF SET

Types of leases

Q1

What is a Gross Lease?

Answer

Q2

What’s the disadvantage of a Gross Lease from a landlord’s perspective?

Answer

Q3

What’s a Modified Gross Lease or a Gross Lease with an escalation clause?

Answer

Q4

What’s a Triple net Lease (NNN)? Also called a Net Lease.

Answer

END OF SET

FLASH CARD SET Types of rent

Q1

What is the Base Rent?

Answer

Q2

What is the “Additional Rent”?

Answer

Q3

What is “Free Rent”?

Answer

Q4

Does “Free Rent” apply to “Additional Rent”?

Answer

Q5

Explain “Percentage Rent”

Answer

END OF SET

How to define & measure space

Q1
What are the Rentable Area and the Gross Leasable Area (GLA)?

Answer

Q2
How do you calculate the rentable area in an office building?

Answer

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%

Answer

Q4
What are the BOMA standards?

Answer

Q5
What are the dangers associated with quoting rents as $ per Sq. Ft per Yr. or Month?

Answer

Q6
What's the simple solution to the problems created by quoting rent as $ per sq. Ft per Yr. or Month

---

Answer

END OF SET

Tips on how to read a lease

Q1

Why is it so important to read a lease very carefully?

____**Answer**

Q2

When reading a lease, ask who pays what?

____

Recommendations

Q3

What is a Demolition Clause?

Answer

Q4
Tips for reading a lease

____

Recommendations

Read the lease several times. Leases are complex legal documents and need to be read carefully

Ask a question and go looking for the answer in the lease. Read with a purpose. Have a question in mind

Examples

Is there a “Demolition Clause?

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

What operating expenses does the tenant pay?

Q5
How are the renewal rates in a lease determined?

Also called “Rent Steps” or “Rent bumps”

Answer

END OF SET

Introduction to long term real estate investment analysis

Q1

What is long term real estate investment analysis?

Answer

Q2

Write down how to develop the cash flow before tax.

Answer

Q3

Show me an example of an operating cash flow Projection

	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**	**2[illegible]9,975**	**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**

Q4

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

Answer

Q5

How long of a time period do you use when developing the yearly cash flows?

Answer

It depends on the type of building

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 OF SET

Discounted Cash Flow Analysis (DCF)

Q1
Which would you rather have?
$1,000,000 today or $1,000,000 in 10 years' time?

Circle your selection

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?

Circle or tick your selection

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

Q3

What is the Internal Rate of Return (IRR)?

How do you calculate the Internal Rate of Return?

What is a "Net Cash Flow" report?

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

Net Cash Flow (Before Tax)

Parklane Place 40 Unit Apartment Building

Rental Apartment Building Example

Year	Investment	Financing: Borrow	Financing: Paid Back	Operating Cash Flow (Before Tax)	Sale Proceeds (Before Tax)	Net Cash Flow (Before Tax)
Year 1 Jan-Year 1 Dec	$ (3,770,000)	$ 2,000,000	-	$ 86,212	-	$ (1,683,788)
Year 2 Jan-Year 2 Dec	-	-	-	94,268	-	94,268
Year 3 Jan-Year 3 Dec	-	-	-	102,617	-	102,617
Year 4 Jan-Year 4 Dec	-	-	-	111,405	-	111,405
Year 5 Jan-Year 5 Dec	(250,000)	-	-	121,395	-	(128,605)
Year 6 Jan-Year 6 Dec	Roof-	-	-	131,294	-	131,294
Year 7 Jan-Year 7 Dec	replacement	-	-	141,986	-	141,986
Year 8 Jan-Year 8 Dec	-	-	-	152,724	-	152,724
Year 9 Jan-Year 9 Dec	-	-	-	163,611	-	163,611
Year 10 Jan-Year 10 Dec	-	-	(1,594,349)	175,117	4,936,162	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 13.00%	($ 296,501)

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

END OF SET

Using Cap Rates. Issues & problems

Q1

Explain the Apparent Cap Rate versus the True Cap Rate

Answer

Q2

The impact of "urgent major repairs" on the purchase price. Example

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The impact of "urgent major repairs" on the Sale Price

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

"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

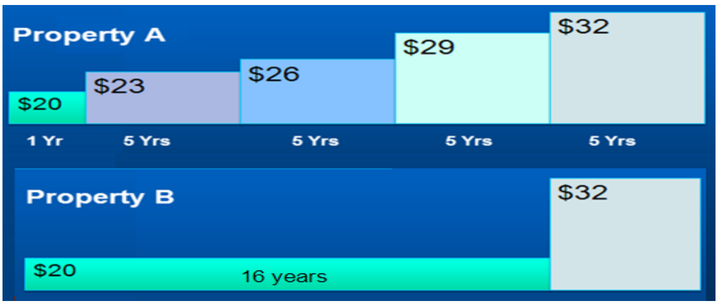
Sale Price based on "Normal" building = $3,200,000 + $425,000 = $3,625,000

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

Q3

Cap Rates can't handle changing cash flows over time. Example.

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



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.

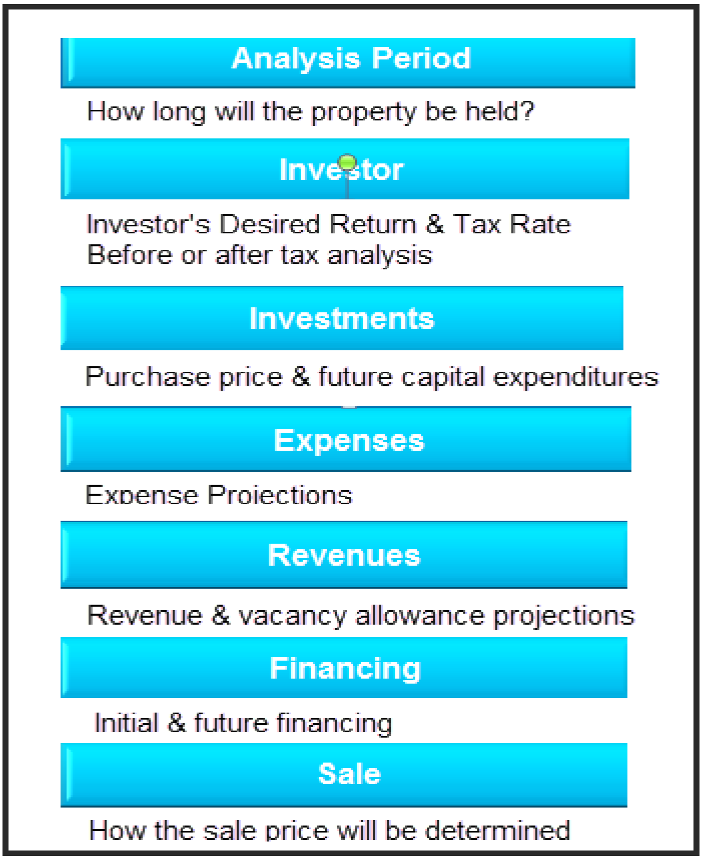
To evaluate these two cash flows we would use discounted cash flow analysis and calculate the Net Present Value (NPV) using the investor's discount rate

END OF SET

Developing the Net Cash Flow

Q1 What are the building blocks of investment analysis?

Following are the steps involved in carrying out long term investment analysis



Q2
Developing the Net Cash flows. Example

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) (= Cash Flow before Tax)
2.	83,000	60,000	
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 OF SET

CLASS EXERCISES

A great way to learn a concept or topic is to explain it another person.

Each session provides you with two opportunities to teach the topic to another class participant.

Instructions

Pair up with another person. One person is called "Partner A" and the other "Partner B"

"Partner A" teaches his/her assigned topic and the "Partner B" teaches his/her a assigned topic to "Partner A"

If the group consists of three people rather than two, "Partner C" listens and asks questions.

Session No. 1

Teaching Exercise No. 1

Participant A	**Participant B**
An investor has asked you what it is the "Cap Rate" and how it is used. **Explain your response to partner B**	**Explain to an investor the benefits and disadvantage of using a Cap Rate to determine the value of an income property** **Explain your response to partner A**

Teaching Exercise No. 2

Participant A	**Participant B**
Explain to Partner B which expense items should be excluded from an Income & Expense Statement when using a Cap Rate to determine the value of an income property.	**Explain to Partner A the relationship between the Cap Rate and Risk.**

Session No. 2

Teaching Exercise No. 3

Participant A	Participant B
Explain to Partner B which expense items should be excluded from an Income & Expense Statement when using a Cap Rate to determine the value of an income property.	Explain to Partner A the relationship between the Cap Rate and Risk.

Teaching Exercise No. 4

Participant A	Participant B
Explain to Partner B the two measures that a lender uses to determine the mortgage for and income property and how they select which method to use.	Explain to Partner A the Default Ratio or Breakeven Point and how it is used when evaluating an income property.

Session No. 3

Teaching Exercise No. 5

Participant A	Participant B
Explain to a Partner B? what a "Triple Net Lease" means.	Explain to Partner A the potential for misunderstanding between a landlord for an office building when quoting rents as $23 per Sq. Ft per Year. What is the best way to describe the rent rate?

Teaching Exercise No. 6

Participant A	Participant B
Explain the Internal Rate of Return (IRR) to Partner B and the advantages of using the Internal Rate of Return IRR) compared to using the Cap Rate	Explain to Partner A what "Discounted Cash Flow Analysis" means.

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QUIZ

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

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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?
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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

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:

1) Loan to Value Ratio(LTV)

2) 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

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%

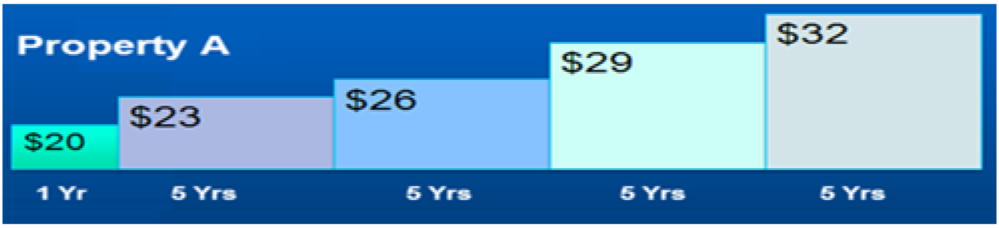
Answer

Q7.
The lower the Cap Rate **t**he **"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

Q10

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

Q11

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?

Q12

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 answer

Q13

Which Debt Service Coverage Ratio provides the highest loan amount?

a) 1.19
b) 1.25
c) 1.30

Tick the correct answer **a)__ b)__ c)__**

Q14

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 answer **a)__ b)__ c)__ d)__**

Q15

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

True **False**

Circle your answer

Q16

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 answer

Q17

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

Q18

Which would you rather have?

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

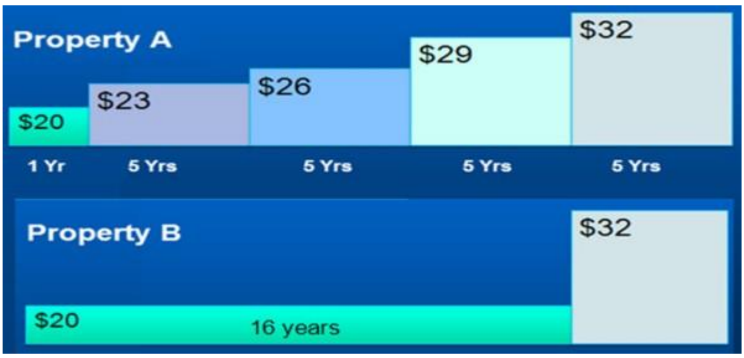
Tick the correct answer **a)__ b)__**

Q19

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 answer a)__ b)__



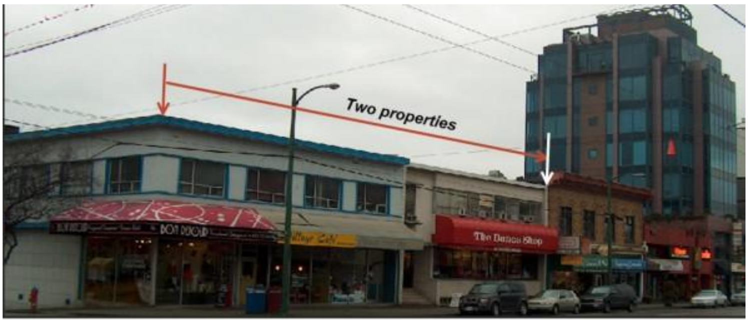
Q20
From a financial perspective which investment provides the highest:

1) Return (IRR) Investment A or Investment B
2) Risk Investment A or Investment B

Circle 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**

Q21
How would you value this property?



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

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

Tick the correct answer **a)__** **b)__**