# Raising Your Commercial IQ

## 102 Real Estate Investment Analysis

## In-House Program
## Participant Package

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**Table of Contents**

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**LEARNING OBJECTIVES**

The overall objective of the video is to provide an understanding of how to carry out in-depth real estate analysis investment and lease analysis, and how to apply investment analysis techniques to different types of properties or types of real estate decisions. **How to use investment analysis to create deals.**

**Topics**

1. The significant weaknesses in using Cap Rates to make real estate investment decisions compared to the discounted cash flow approach. Examples illustrating the weakness of the Cap Rate approach to establishing value

2. Time value of money concepts. The Internal Rate of Return (IRR) and Net Present Value financial measures

3. Steps involved in carrying out long term real estate investment analysis and discounted cash flow analysis

4. Real estate analysis. Tips and tricks

5. The importance of financial leverage and accumulated wealth

6. Real estate taxation

7. Properties that are hard to sell because of taxes

8. Seller financing. Tax issues

9. Sale. Impact of mortgage restrictions

10. How to use real estate analysis techniques to help list, sell or lease a property during challenging times

The knowledge and skills developed will improve your ability to value, list, sell or lease income properties and use investment analysis techniques to put deals together, make you money and help your client make wise financial decisions.

**AGENDA. TIME TABLE**

REAL ESTATE INVESTMENT & DISCOUNTED CASH FLOW ANALYSIS

| Line number | Play Micro Video | Manual Page Number | Play Flash Card Set | Participant Package Page number |
|---|---|---|---|---|
| 1 | Apparent versus True Cap Rate (2 min) | 4 | | |
| 2 | Factors the effect Cap Rates (5 min) | 4 | | |
| 4 | Introduction to Discounted Cash Flow Analysis (7 min) | 7 | | |
| 5 | The Internal Rate of Return (IRR) (5 min) | 10 | | |
| 6 | Financial Calculators (2 min) Optional | 13 | | |
| 7 | The Net Present Value (NPV) (6 min) | 13 | | |
| 8 | The Modified Internal Rate of Return (MIRR) (2min) | 15 | | |
| 9 | | | Cap Rate. Issues | 7 |
| 10 | | | Intro. Investment analysis | 10 |
| 11 | | | IRR, NPV & MIRR Intro | 13 |
| 12 | The Building Blocks of Investment Analysis (5 min) | 16 | | |
| 13 | Investment Analysis. Case study (47 min) | 17 | | |
| 14 | Review. Building blocks of Investment Analysis (2 min) | 33 | | |
| 15 | Cap Rate versus IRR (19 min) | 39 | | |
| 16 | Timing and Sign convention (10 min) | | | |
| 17 | What does “Return” mean? (3 min) | 46 | | |
| 18 | | | Cash Flow and Investment Analysis | 22 |
| 19 | | | Financial leverage | 33 |
| 20 | | | Risk analysis | 37 |

| Line number | Play Micro Video | Manual Page Number | Play Flash Card Set | Participant Package Page number |
|---|---|---|---|---|
| 21 | Real estate analysis. Tips and tricks (28 min) | 55 | | |
| 22 | The importance of Financial Leverage and Accumulated Wealth (22 min) | 56 | | |
| 23 | Real estate investment analysis. Summary (6 min) | | | |

SELLING A PROPERTY. & POTENTIAL CHALLENGES

| Line number | Play Micro Video | Manual Page Number | Play Flash Card Set | Participant Package Page number |
|---|---|---|---|---|
| 24 | Real estate taxation (21 min) | 47 | | |
| 25 | Properties that are hard to sell because of taxes (4 min) | 53 | | |
| 26 | Seller financing. Tax issues (1 min) | 53 | | |
| 27 | Sale. Impact of mortgage restrictions (4 min) | 54 | | |
| 28 | | | Real Estate Taxation | 43 |

**PRACTICE QUIZ and 102 COURSE EXAM**

We recommend you take the **102 Practice Quiz** to test your knowledge and measure your progress.

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

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

**102. Course Exam.**

Take the 102 course exam which is set up by a manager or office administrator.

**FLASH CARD. QUESTIONS**

**Cap Rates. Issues**

**Q1.**

The Cap Rate takes into account the "Time Value of Money"

True or False?

***Circle your answer***

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**Q2.**

The "Internal Rate of Return (IRR)" takes into account
the time value of money.

True or False?

***Circle your answer***

---

**Q3**

The calculation of the Cap Rate assumes:

a) the property is never sold and

b) the Net Operating Income (NOI) is constant and goes on forever.

True or False?

***Circle our answer***

---

**Q4.**

Think of an example of when the Cap Rate approach to determining the value would not yield a good estimate of the value because of the way the cash flows change over time.

Flip to see an example

***Your answer***

**Q5**

Is the Cap Rate calculated using the:

Net Operating Income (NOI) and Sale Price
always correct?

***Circle Your answer***

**Q6**

Purchase Price: $3,000,000

Net Operating Income (NOI): $195,000
The Buyer deducted $450,000 for urgent major repairs to the roof and the boiler.

Calculate the "Apparent Cap Rate" and the "True Cap Rate”
***Your answer***

**Q7**

The "Apparent Cap Rate" ignores the hidden factors that may have influenced the price such as the buyer discovering that $350,000 has to be spent immediately on replacing the roof and major repairs to the HVAC system.

True or False

***Circle your answer***

**Q8**

If the Sale Price was $1,650,000 and the Net Operating Income $124,000 and the buyer deducted $300,000 for urgent major repairs.

Calculate the True Cap Rate.
***Your answer***

**Q9**

If the Cap Rate is calculated using the "Sale Price" and next years "Net Operating Income (NOI)" which one of the following statements is most correct?

a) The calculation of the Cap Rate is always correct

b) The calculation of the Cap Rate is incorrect because the future value of the property has not been included

c) Using the Sale Price and the Net Operating Income (NOI) can result in an incorrect Cap Rate because of factors that you may not be aware of such as the cost of urgent major repairs that may have influenced the purchase price

a) b) c)

***Circle your answer***

**END OF SET**

**Intro. To Investment Analysis**

**Q1.**

Which would you rather have?

1) $1,000,000 today or

2) $1,000,000 in 10 years' time?

***Tick your answer***

---

**Q2.**

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

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

From your perspective as a lender which is the more risky option Plan A or Plan?

| 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) | _____% | _____% |

1) Which would you prefer as a lender **Plan A** or **Plan B**
2) From your perspective as a lender which is the more risky option **Plan A** or **Plan?**

***Circle your answer your answers***

**Q3**

What is the Internal Rate of Return (IRR)?

How do you calculate the Internal Rate of Return?

***The answer***

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

| 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 | $ (2,600,000) | $ 1,700,000 | - | $ 34,891 | - | $ (865,109) |
| Year 2 Jan-Year 2 Dec | - | - | - | 66,844 | - | 66,844 |
| Year 3 Jan-Year 3 Dec | (300,000) | - | - | 71,631 | - | (228,369) |
| Year 4 Jan-Year 4 Dec | Replacement of roof | - | - | 71,982 | - | 71,982 |
| Year 5 Jan-Year 5 Dec | - | - | (1,556,958) | 72,420 | 2,860,650 | 1,376,112 |
| | | | | | Total | $ 421,461 |

**Financial Returns (Before Tax) with Financing**

| | |
|---|---|
| Internal Rate of Return (IRR) | 7.52% |
| Net Present Value (NPV) at 13.00% | ($ 211,027) |
| Modified Internal Rate of Return (MIRR) | 7.29% |

Need to drop the price by $211,027 in order to get a 13% Return (IRR) before tax.

**Q4.**

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

***The answer***

**Q5**

How to develop the Net Cash flows and Internal Rate of Return (IRR).

***The 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 OF SET**

**IRR, NPV & MIRR Introduction**

**Q1.**

The IRR, NPV, MIRR, DCF and NCF are abbreviations for?

***Your answer***

IRR =

NPV =

MIRR =

DCF =

NCF = Net Cash Flow

---

**Q2.**

Which investment option would you rather have and which option is less risky?

a) $300,000 today

b) $300,000 in five years' time

***Circle your answer***

---

**Q3**

Which of the following are true?

Discounted cash flow analysis considers the:

1) Time value of money

2) The impact of financial leverage

3) Changing revenues and expenses over time

4) Uses the IRR and NPV

5) The sale at the end of the Analysis Period

6) The above items are ignored when using the Cap Rate

***Circle Your answer***

**Q4.**

In carrying out long term real estate investment or discounted cash flow analysis the "Analysis Period" refers to:

***Your answer***

**Q5**

What is the generally recommended analysis period for:

a) Rental apartment buildings

b) Commercial buildings

***Your answer***

a) Rental apartment buildings _____ years

b) Commercial buildings _____ years

**Q6**

The Cap Rate and Internal Rate of Return (IRR) create the same estimate of value because they are both a 'Return on Investment"

True or False

***Circle your answer***

The Cap Rate approach is the best method for valuing an investment that has the following lease arrangement over the next 16 years.

| | |
|---|---|
| Yr 1. | $21 psf. per Yr. |
| Yrs 2- 6 | $23 psf. per Yr. |
| Yrs 7-11 | $26 psf. per Yr. |
| Yrs 12 -16 | $29 psf. per Yr. |

True or False

***Circle your answer***

**Q8**

Can you use a standard mortgage calculator to calculate the return on investment (the interest rate) for this cash flow?

| | |
|---|---|
| Year 0. | <$600,000> |
| Year 1. | 200,000 |
| Year 2. | 250,000 |
| Year 3. | 310,000 |

***Yes n No***

***Circle your answer***

**Q9**

Which statement is correct?

a) If the Net Present Value (NPV) is positive the return is greater than the investment's discount rate or desired return

b) If the Net Present Value (NPV) is negative the return is greater than the investor's discount rate or desired return

***Circle your answer***

**Q10**

If the Net Present Value (NPV) at the Investor's discount rate or desired return is negative the return on investment (IRR) is:

a) greater than

b) less than

the Investor's desired return or discount rate.

***Circle your answer***

**Q11**

Which statement is correct?

The Investor's discount rate or desired return is used to calculate the:

a) Cap Rate

b) Internal Rate of Return (IRR)

c) Net Present Value (NPV)

d) Cash on Cash or Return on Equity

e) None of these

***Circle your answer***

**Q12**

When carrying out real estate investment analysis you look at the financial "Reward" such as the Internal Rate of Return (IRR) and the Net Present Value (NPV) PLUS.....?

***Your answer***

**Q13**

If the investor's discount rate or desired return is 11% and the Net Present Value (NPV) is $<329,000> how much does the purchase price have to be reduced to get a return of 11%?

***Your answer***

**Q14**

Which items are not included when calculating the yearly cash flows from an investment in an income property?

a. Potential Gross Income
b. Vacancy Loss
c. Operating Expenses
d. Principal Payments
e. Interest Payments
f. Future Sale Price
g. Cap Rate
h. Major capital expenditures

***Circle our answers***

**Q15**

Which of the following financial measures does not take into account the "Time Value of Money"?

a) Debt Service Ratio
b) Cap Rate
c) Internal Rate of Return (IRR)
d) Return on Equity (Cash on Cash)
e) Net Present Value (NPV)
f) Modified Internal Rate of Return (MIRR)

***Circle your answers***

**Q16**

If the Investor's "discount rate" or "desired return on investment: is 13% and the Net Present Value (NPV) of a potential investment is $283,000 what does this tell you?

***Your answer***

**Q17**

What does the term "Capital Expenditure" mean?

***Your answer***

**Q18**

What does the 'Re-investment assumption" refer to when calculating the Internal Rate of Return (IRR)?

***Your answer***

**Q19**

If you received the following annual cash flow and calculated the Interest Rate the answer is 9.70%

Yr

0 <400,000

1 160,000

2.160,000

3.160,000

What is the Internal Rate of Return (IRR)?

***Your answer***

.

**Q20**

Can you calculate the return on investment or interest rate for the following investment using a standard mortgage calculator

Year

0 <730,000>

1 350,000

2 400,000

3 150,000...This is an uneven cash flow

***Your answer***

**Q21**

Which statement is correct?

a) If the Net Present Value (NPV) is positive the return is greater than the investment's discount rate or desired return

b) If the Net Present Value (NPV) is negative the return is greater than the investor's discount rate or desired return

***Circle your answer***

**Q22**

The Investor's discount rate is used to calculate the:

a) Cap Rate

b) Internal Rate of Return (IRR)

c) Net Present Value (NPV)

d) Cash on Cash or Return on Equity

e) None of these

***Circle your answer***

**Q23**

Which one of the following might be a good reference point in deciding on the "Discount Rate" or "Desired Return" when calculating the Net Present Value (NPV)?

a) A conservative second mortgage rate for the same kind of property

b) The Cap Rate from comparable properties

c) Government bond rate

d) The average return for a large REIT (Real Estate Investment Trust)

***Circle your answer***

We like to use a discount rate that:

**Q24**

The analysis of an investment property shows the following results:

Financial Returns (Before tax) with financing

Internal Rate of Return (IRR): 7.95%

Net Present Value (NPV) at 11%: $<319,118>

a) How much does the price have to be reduced to get the desired return of 11%?

b) If the price is reduced by this amount what is the IRR and the Net Present Value at 11%?

***Your answers***

**Q25**

The reinvestment assumption used when calculating the Internal Rate of Return (IRR)

a) Can cause the Internal Rate of Return (IRR) to be overstated

b) Has no impact on the Internal Rate of Return (IRR)

***Circle your answer***

.

**Q26**

If the Internal Rate of Return (IRR) is 16.17% when calculating the Internal Rate of Return (IRR) losses are borrowed at:

a) 0%

b) The interest rate used for the first mortgage

c) 16.17%

d) 15%

***Circle your answer***

**Q27**

The Cap Rate and the Internal Rate of Return (IRR) are similar measures and therefore can be compared.

True or False

***Circle your answer***

**Q28**

The Internal Rate of Return (IRR) is generally "Higher" or "Lower" than the Cap Rate?

***Your answer***

**Q29**

The results of an investment analysis of an office building are:

Internal Rate of Return (IRR): 8.27%

Net Present Value (NPV) at 13%: $<680,000>

If the purchase price is reduced by $680,000 the Internal Rate of Return (IRR) will change from 8.27% to _____% and the Net Present Value (NPV) will be $_____?

***Insert your answer***

**Q30**

Under what conditions does the Cap Rate come close to being equal to the Internal Rate of Return (IRR)?

***Your answer***

**END OF SET**

**Cash Flow & Investment Analysis**

**Q1.**

What are the components of the

"Operating Cash Flow (Before tax)"?

***The answer***

**Operating Cash Flow (Before Tax)**

| | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| **Potential Gross Income** | **499,200** | **516,780** | **535,099** |
| Less: Vacancy & Credit Loss Allow. | 11,556 | 11,966 | 12,394 |
| **Effective Gross Income** | **487,644** | **504,814** | **522,705** |
| Operating Expenses | 226,482 | 235,826 | 245,569 |
| **Net Operating Income** | **261,162** | **268,988** | **277,136** |
| Less: Principal Payments | 41,238 | 43,348 | 45,566 |
| Interest payments | 99,063 | 96,954 | 94,736 |
| **CASH FLOW BEFORE TAX** | **120,861** | **128,686** | **136,834** |

---

**Q2.**

How is the after tax cash flow calculated?

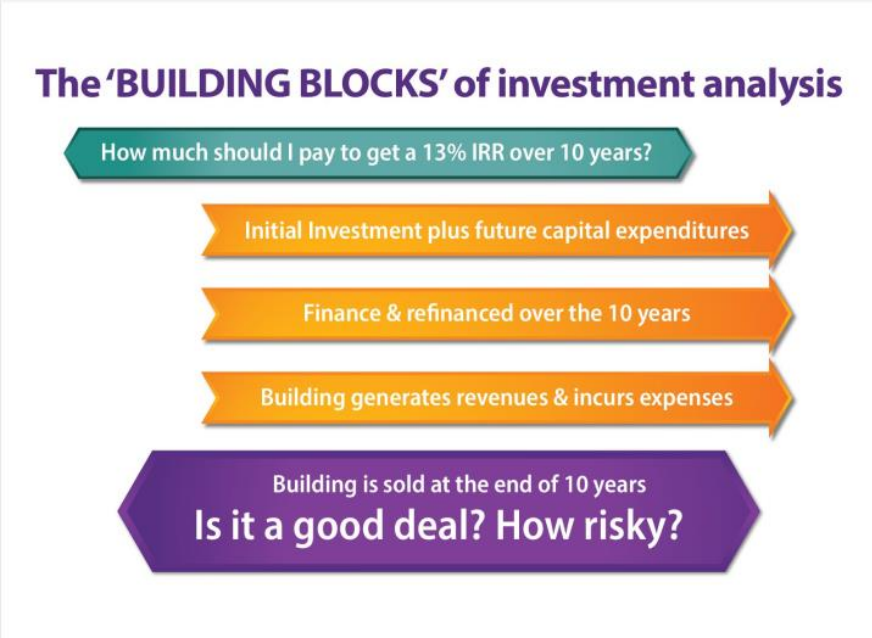
***Your answer***

| | | | |
|---|---|---|---|
| **CASH FLOW BEFORE TAX** | **120,861** | **128,686** | **136,834** |
| Less: Income Tax at 35.00% | 24,699 | 26,803 | 30,431 |
| **CASH FLOW AFTER TAX** | **96,161** | **101,883** | **106,404** |
| | | | |
| **INCOME TAX CALCULATIONS** | | | |
| Net Operating Income | 261,162 | 268,988 | 277,136 |
| Less: Interest Payments | 99,063 | 96,954 | 94,736 |
| Depreciation & Amortization | 91,529 | 95,455 | 95,455 |
| **Taxable Income** | **70,570** | **76,579** | **86,945** |
| **Income Tax at 35.00%** | **24,699** | **26,803** | **30,431** |

**Q3**

Investment analysis can be broken down into basic steps or building blocks.
The "Building Blocks of Investment Analysis" are shown on the flip side

***Your answer***




**Q4.**

A good starting point when carrying out investment analysis is to decide on the questions you want answered.

List some questions

***Your answer***

**Q5**

On the flip side is a summary of the steps involved in carrying out long term real estate investment analysis.

Also called "Discounted Cash Flow Analysis"

***Your answer***


**Q6**

Capital Investment and capital expenditures refers to?

***Your answer***

**Q7**

What are "Operating Expenses?
Operating Expenses are regularly recurring expenses involved in maintaining and running the building.

Make a list of operating expenses
***Your answer***

**Q8**

What are "Non Recurring Expenses"?

List some non recurring expenses
***Your answer***

**Q9**

Non recurring expenses such as a leasing fee should never be included in the Net Operating Income (NOI) when using a Cap Rate to establish the value.

How do you show non-recurring expenses in an Income & Expense Statement?
***Your answer***

**Q10.**

What's the difference between:
1) Capital investment
2) Capital Expenditure or Capital Improvements
3) Expense
4) Non recurring expense

***Your answer***

**Q11.**

How do you calculate the "Cash Flow from Sale" before and after tax?

***Your answer***

**Cash Flow from Sale (Before Tax)**

| | | | | |
|---|---|---|---|---|
| Sale Price | | | $ | 3,790,696 |
| Less: Real Estate Commission | | | | 189,535 |
| Selling Expenses | | | | 75,814 |
| Legal | | | | 6,000 |
| Net Sale Price | | | | 3,519,347 |
| Less: Mortgage Repayment | | | | 1,354,178 |
| **Cash Flow from Sale (Before Tax)** | | | | **2,165,169** |

**Cash Flow from Sale (After Tax)**

| | | | | |
|---|---|---|---|---|
| Net Sale Price | | | | 3,519,347 |
| Less: Capital Gains Tax | | | | |
| Net Sale Price | 3,519,347 | | | |
| Less Cost Basis | 2,730,000 | | | |
| Capital Gains | 789,347 | x | 15.00% | 118,402 |
| Less: Recaptured Depreciation Tax | | | | |
| Tax Value of Improvements on Sale | 1,830,000 | | | |
| Less Adjusted Basis | 1,364,712 | | | |
| Recaptured Depreciation | 465,288 | x | 25.00% | 116,322 |
| Net Proceeds (After Tax) | | | | 3,284,623 |
| Less: Mortgage Repayment | | | | 1,354,178 |
| **Cash Flow from Sale (After Tax)** | | | | **1,930,445** |

**Q12.**

What is the best investment analysis report that shows the big picture and the financial results and is easy to understand?

***Your answer***

**Net Cash Flow Report**
(Shows the big picture and the financial results)

| Year | Investment | Financing Borrow | Financing Paid Back | Operating Cash Flow (Before Tax) | Sale Proceeds (Before Tax) | Net Cash Flow (Before Tax) |
|---|---|---|---|---|---|---|
| 0 | $ (3,590,000) | $ 2,000,000 | - | - | - | $ (1,590,000) |
| 1 | - | - | - | 120,861 | - | 120,861 |
| 2 | - | - | - | 128,686 | - | 128,686 |
| 3 | - | - | - | 136,834 | - | 136,834 |
| 4 | - | - | - | 144,857 | - | 144,857 |
| 5 | - | - | (1,771,603) | 153,611 | 4,096,617 | 2,478,625 |
| | | | | | Total | $ 1,419,862 |

| Financial Returns (Before Tax) with Financing | | Financial Returns (Before Tax) without Financing | |
|---|---|---|---|
| Internal Rate of Return (IRR) | 15.29% | Internal Rate of Return (IRR) | 9.99% |
| Net Present Value (NPV) at 11.00% | $ 289,745 | Net Present Value (NPV) at 11.00% | ($ 140,355) |
| Modified Internal Rate of Return (MIRR) | 13.91% | Modified Internal Rate of Return (MIRR) | 9.17% |
| Short Term Financing Rate (Before Tax) | 8.000% | Short Term Financing Rate (Before Tax) | 8.000% |
| Short Term Reinvestment Rate (Before Tax) | 3.000% | Short Term Reinvestment Rate (Before Tax) | 3.000% |

**Q13.**

The “Overall Cash Flow” report is an excellent report for seeing the "big picture" and the financial results all on one easy to understand report.

***Your answer***

**Overall Cash Flow Report**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| **Potential Gross Income** | **499,200** | **516,780** | **535,099** | **553,679** | **573,482** |
| Less: Vacancy & Credit Loss Allow. | 11,556 | 11,966 | 12,394 | 12,828 | 13,290 |
| **Effective Gross Income** | **487,644** | **504,814** | **522,705** | **540,851** | **560,192** |
| Operating Expenses | 226,482 | 235,826 | 245,569 | 255,693 | 266,279 |
| **Net Operating Income** | **261,162** | **268,988** | **277,136** | **285,158** | **293,913** |
| Less: Principal Payments | 41,238 | 43,348 | 45,566 | 47,897 | 50,348 |
| Interest payments | 99,063 | 96,954 | 94,736 | 92,405 | 89,954 |
| **OPERATING CASH FLOW BEFC** | **120,861** | **128,686** | **136,834** | **144,857** | **153,611** |
| **INVESTMENTS & CAPITAL IMPROVEMENT** | | | | | |
| Land | (1,000,000) | - | - | - | - |
| Building | (2,570,000) | - | - | - | - |
| Mortgage Fees and Points | (20,000) | - | - | - | - |
| | **(3,590,000)** | - | - | - | - |
| **FINANCING Borrow(+) Payback(** | | | | | |
| First Mortgage | 2,000,000 | - | - | - | (1,771,603) |
| | **2,000,000** | - | - | - | **(1,771,603)** |
| **SALE** | | | | | |
| Sale Price | | | | | 4,321,702 |
| Less: Real Estate Commissions | | | | | 216,085 |
| Selling Expenses | | | | | 9,000 |
| Net Sales Proceeds (Before Tax) | | | | | **4,096,617** |
| **OVERALL CASH FLOW BEFORI** | **(1,469,139)** | **128,686** | **136,834** | **144,857** | **2,478,625** |
| **FINANCIAL RETURNS** | | | | | |
| **Before Tax** | | | | | |
| Internal Rate of Return (IRR) | 15.29% | | | | |
| Net Present Value (NPV) at 11.00% | 289,745 | | | | |

**Q14.**

What is 'Extra-ordinary Revenue" or "Non Recurring Revenue" and how do we treat them in cash flow analysis?

***Your answer***

**Q15.**

How would you show the following on an Income and Expense Statement?

Temporary sign rental $17,000 year 1

Leasing fee $30,000 & Minor building upgrades $21,000 both in year 2

Capital expenditure. Roof $450,000 year 3

***Your answer***

| | Year 1 | Year 2 | Year 3 | Year 4 |
|---|---|---|---|---|
| **REVENUE** | | | | |
| Rental Income | 185,550 | 189,000 | 189,000 | 189,000 |
| Additional Rent (TMI's) | 42,000 | 44,000 | 46,000 | 48,500 |
| **Potential Gross Income** | **227,550** | **233,000** | **235,000** | **237,500** |
| Less: Vacancy & Credit Loss Allowance | 9,102 | 9,320 | 9,400 | 9,500 |
| **Effective Gross Income** | **218,448** | **223,680** | **225,600** | **228,000** |
| | | | | |
| **Operating Expenses** | | | | |
| Property Taxes | 35,000 | 36,400 | 37,856 | 38,992 |
| Insurance | 15,000 | 15,600 | 16,224 | 16,873 |
| Maintenance | 7,200 | 7,416 | 7,644 | 7,872 |
| Utilities | 5,400 | 5,568 | 5,724 | 5,904 |
| Property Management | 12,656 | 14,463 | 14,845 | 14,979 |
| | 75,256 | 79,447 | 82,293 | 84,620 |
| **Net Operating Income** | **143,192** | **144,233** | **143,307** | **143,380** |
| **Income not included in NOI** | | | | |
| Temporary sign rental | 17,000 | - | - | - |
| **Less: Expense not included in NOI** | | | | |
| Leasing Fee | - | 30,000 | - | - |
| Minor building upgrades | - | 21,000 | - | - |
| | - | 51,000 | - | - |
| **Net Income** | **126,192** | **144,233** | **143,307** | **143,380** |

**Capital expenditure of $450,000 to replace the roof in year 3 is a capital item and is not shown on the Income & Expense Statement**

**Q16.**

How do you determine the Sale Price at the end of the "Analysis Period" (Also called the "Holding Period")?

***Your answer***

**Q17.**

In real estate investment analysis what does the "Analysis Period" or the "Holding Period" refer to?

***Your answer***

**Q18.**

Should the projection of revenues and expenses be done on a yearly or monthly basis?

***Your answer***

**Q19.**

What are the different ways for projecting revenues and expenses?

***Your answer***

**Q20.**

When carrying out investment analysis don't forget to consider...

***Your answer***

Future capital expenditures and major repairs

Potential for future refinancing

For new commercial tenants.
Free rent periods
Cost of tenant improvements (TI's) paid by the landlord Cost of tenant inducements, Leasing and legal fees.

If the tenant is vacating the space how long will it take to lease the space?

**Q21.**

An important aspect of real estate analysis is investigating the impact of financing on the financial return (IRR).

Financing generally increases the return (IRR) but increases the investment risk.

Always check to see if the financing can be increased now or some time in the future and if so, when?

See the impact of financial leverage on the flip side

***Your answer***

**The use of financial leverage increases the return (IRR) but increases the risk**

| Financing. Loan to Value Ratio | Internal Rate of Return (IRR) | Debt Service Coverage Ratio | Risk Default Ratio (Breakeven Point) |
|---|---|---|---|
| No financing | 8.18% | N/A | 29% |
| 50% LTV | 10.69% | 1.86 | 60% |
| 75% LTV | 13.96% | 1.24 | 86% |

**Changing from an all cash purchase to a LTV Ratio of 50% changes the IRR from 8.18% to 10.69% which is a 31% increase in the IRR.**

**Changing from a 50% LTV to 75% changes the IRR from 10.69% 13.96% which is a 31% increase**

**RISK As the financing increase the financial risk increases. The Default Ratio (Break-even Point) has gone for 29% with zero financing to 86% with a 75% Loan to Value Ratio**

**Q22.**

When carrying investment analysis always check to see if the financing can be increased now or in the future and if so when?

The goal is to reduce the amount of equity required to buy the property and increase the return (IRR) through financial leverage balanced by risk considerations.

See examples showing how to determine if the financing can be increased on the flip side.

***Your answer***

Question. Can the mortgage be increased now or in the future and if so, when?.
The lending criteria is:
Loan to Value Ratio. Less than 75%,
Debt Service or Coverage Ratio 1.25 or higher
Default Ratio (Breakeven Point). Less than 85%

| Year | Loan to Value Ratio | Debt Service Coverage Ratio | Default Ratio (Breakeven) (Using PGI) | Loan to Value Ratio | Debt Service Coverage Ratio | Default Ratio (Breakeven) (Using PGI) |
|---|---|---|---|---|---|---|
| 1 | 71.42% | 1.53 | 73.95% | 88.06% | 1.13 | 91.64% |
| 2 | 69.53% | 1.57 | 72.69% | 85.73% | 1.16 | 89.91% |
| 3 | 67.66% | 1.62 | 71.46% | 83.42% | 1.19 | 88.21% |
| 4 | 65.83% | 1.66 | 70.23% | 81.17% | 1.22 | 86.52% |
| 5 | 58.84% | 1.71 | 69.03% | 72.55% | 1.25 | 84.87% |
| 6 | 57.15% | 1.91 | 63.65% | 70.46% | 1.40 | 78.10% |

This building has the potential to increase the financing in Year 1 because the:
LTV is less than 75% at 71.42%
DSCR is higher than 1.25 at 1.53
Default Ratio is less than 85.00% at 73.95%

This building has the potential to increase the financing in year 6 because the:
LTV is less than 75% at 70.46%
DSCR is higher than 1.25 at 1.40
Default Ratio is less than 85.00% at 78.10%

**END OF SET**

**Financial Leverage**

**Q1.**

What are the two financial measures commonly used by lenders to determine mortgage loan amounts.

***Your answer***

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**Q2.**

Calculate the Debt Service or Coverage Ratio (DSCR) using the following information:
Net Operating Income (NOI): $200,000
Debt Service (p+i): $160,000
Note. Debt Service is the annual mortgage payment of principal and interest

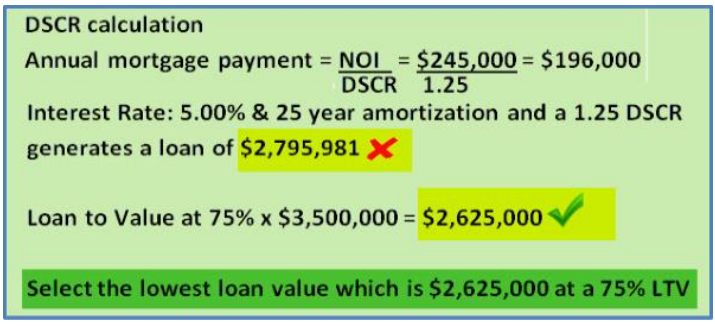
***Your answer***

---

**Q3**

If the Debt Service or Coverage Ratio (DSCR) is 1.25 and the Loan to Value Ratio (LTV) is 75% determine the loan amount for the following mortgage:
Appraised value: $3,500,000
Net Operating Income (NOI): $245,000
Interest Rate: 5.00% compounded monthly.
Amortization: 25 years

***Your answer***



**Q4.**

If financing is increased from a 50% Loan to Value Ratio (LTV) to a 75% LTV what happens to the:

Return on Investment (IRR)?

Financial risk?

***Your answer***

**Q5**

In carrying out investment analysis always check to see if the financing can be increased "Now" or some time in the future and if so "When"

Flip side. If the lender is using a Debt Service or Coverage Ratio of 1.18 in what year could the building be refinanced and the mortgage increased?

***Your answer***

**Financial Operating Ratios**

| Year | Total Loan to Value Ratio (At End of Year) using Original Loan Amount | Total Loan to Value Ratio (At End of Year) using Outstanding Loan Balance | Debt Coverage Ratio | Default Ratio (Breakeven) (Using PGI) |
|---|---|---|---|---|
| Year 1 | 73.14% | 72.10% | 1.05 | 95.15% |
| Year 2 | 70.94% | 68.85% | 1.08 | 93.89% |
| Year 3 | 68.72% | 65.57% | 1.11 | 92.67% |
| Year 4 | 66.32% | 62.10% | 1.15 | 91.44% |
| Year 5 | 64.10% | 58.80% | 1.19 | 90.09% |
| Year 6 | 61.85% | 55.47% | 1.23 | 88.86% |

**Answer Year 5**

**Q6**

What does a Debt Service or Coverage Ratio (DSCR) of 1.25 mean from a lender's perspective

***Your answer***

**Q7**

Increasing the financing increases the return on investment (IRR) but increases the risk.

This is illustrated on the flip side which shows the return on investment (IRR) with and without financing and shows the impact on the DSCR and the Default Ratio (Breakeven Point)

***Your answer***

**Increasing the financing from 65% to 75% LTV**
**The return (IRR) increases from 11.72% to 21.72%**
**Risk increases**
**DSCR goes from 1.49 to 1.31**
**Default Ratio (Breakeven) goes from 82.31% to 90.31%**

| | Loan to Value Ratio 75% | | Loan to Value Ratio 65% | |
|---|---|---|---|---|
| Year | Debt Coverage Ratio | Default Ratio (Breakeven) (Using PGI) | Debt Coverage Ratio | Default Ratio (Breakeven) (Using PGI) |
| Year 1 | 1.31 | 90.31% | 1.49 | 82.31% |
| Year 2 | 1.32 | 80.41% | 1.51 | 73.40% |
| Year 3 | 1.35 | 79.27% | 1.55 | 72.45% |
| Year 4 | 1.35 | 79.33% | 1.55 | 72.57% |
| Year 5 | 1.35 | 79.36% | 1.55 | 72.67% |
| Internal Rate of Return (IRR): | 21.72% | | | 11.72% |

**Q8**

What is financial leverage?
Financial leverage refers to using finance or other people's money to purchase real estate.

Hopefully the use of financial leverage will increase the return on investment but it also increases the risk.
See example on the flip side.
***Your answer***

**Q9**

What might prevent you from increasing the first mortgage or arranging a second mortgage with the seller in order to reduce the amount of equity required to buy the property and increase the return on investment (IRR)?

***Your answer***

**END OF SET**

**Risk Analysis**

**Q1.**

The "Higher" the risk the "Higher" or "Lower" the desired return on investment?

***Circle your answer***

---

**Q2.**

What creates risk?

Identify some strategies that are used to reduce risk

***Your answer***

What create risk?

Some strategies for reducing risk

---

**Q3**

One way to identify risk is to look at the timing of the cash flows. The faster the money flows back the less risky the investment. Sooner is better than later.

This is illustrated on the flip side.

***Your answer***

**Which is the least risky investment from a financial perspective?**

| Year | Property A | Property B |
|---|---|---|
| 0 | <2,000,000> | <2,000,000> |
| 1 | 600,000 | 400,000 |
| 2 | 300,000 | 400,000 |
| 3 | 400,000 | 400,000 |
| 4 | 500,000 | 400,000 |
| 5 | 600,000 | 800,000 |
| **Total** | **400,000** | **400,000** |

**Property A because the cash flow in the early years is greater than for property B. Sooner is better than later.**

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**Q4.**

When carrying out investment analysis which are the best financial measures for assessing the potential investment risk?

***Your answer***

---

**Q5**

One of the best measures for evaluating risk is the Debt Service or Coverage Ratio (DSCR)

Calculate the Debt Service or Coverage Ratio based on the following

Net Operating Income (NOI): $239,000

Debt Service (p+i): $190,000

***Your answer***

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**Q6**

How can you use the Debt Service or Coverage Ratio (DSCR) to evaluate the financial risk?

***Your answer***

.

**Q7**

Another really good measure of financial risk is the “Default Ratio (Breakeven Point)” which is the point where the revenue covers the operating expenses and the mortgage payments.

Using the following information calculate the
Default Ratio (Breakeven Point)

Operating Expenses: $58,000

Debt Service (p+i): $180,538
Effective Gross Income (EGI): $292,230

***Your answer***

**Q8**

How can you use the Default Ratio (Breakeven Point) to evaluate the investment risk?

***Your answer***

**Q9**

Which investment would you consider to be less risky?

Investment A:

Default Ratio (Breakeven Point): 90%

Debt Service or Coverage Ratio: 1.13

Investment B

Default Ratio (Breakeven Point): 81%

***Circle your answer***

**Q10**

Increasing the financing on a building will increase the financial risk but will generally increase the return on investment or the Internal Rate of Return (IRR)

This is illustrated on the flip side where increasing the Loan to Value Ratio from 65% to 75% increases the Internal rate of Return(IRR) from 11.72% to 21.72% but increases the financial risk.

***Your answer***

**Increasing the financing from 65% to 75% LTV**
**The return (IRR) increases from 11.72% to 21.72%**
**Risk increases**
**DSCR goes from 1.49 to 1.31**
**Default Ratio (Breakeven) goes from 82.31% to 90.31%**

| | Loan to Value Ratio 75% | | Loan to Value Ratio 65% | |
|---|---|---|---|---|
| Year | Debt Coverage Ratio | Default Ratio (Breakeven) (Using PGI) | Debt Coverage Ratio | Default Ratio (Breakeven) (Using PGI) |
| Year 1 | 1.31 | 90.31% | 1.49 | 82.31% |
| Year 2 | 1.32 | 80.41% | 1.51 | 73.40% |
| Year 3 | 1.35 | 79.27% | 1.55 | 72.45% |
| Year 4 | 1.35 | 79.33% | 1.55 | 72.57% |
| Year 5 | 1.35 | 79.36% | 1.55 | 72.67% |
| Internal Rate of Return (IRR): | 21.72% | | | 11.72% |

**Q11**

When using the Default Ratio (Breakeven Point) a high Default Ratio (Breakeven Point) such as 92% may indicate high risk but it depends on the predictability of the cash flows which may depend on the quality of the tenants.

The example on the flip side illustrates this.

***Your answer***

**This appears to be a high risk investment because of the 85% LTV financing.**

**The Debt Coverage Ratio is very low at 1.12 and the Default Ratio (Breakeven Point) is very high at 91.17% indicating high risk BUT...**

**It is a new single tenant building with a Fortune 500 tenant with a 20 year triple net lease with regular rent increases. The tenant has spent $1,200,000 on leasehold improvements.**

**The income is very predictable and secure making this a low risk, highly leverage investment**

**Loan to Value Ratio 85%**

| Debt Coverage Ratio | Default Ratio (Breakeven) (Using PGI) |
|---|---|
| 1.12 | 91.17% |
| 1.16 | 89.65% |
| 1.19 | 88.19% |
| 1.23 | 86.78% |
| 1.26 | 85.44% |
| 1.30 | 84.15% |
| 1.34 | 82.90% |

**Q12**

Increasing the financing generally increases the return on investment (IRR) but increases the risk.

The example on the flip side show the impact of using financial leverage.

***Your answer***

**Net Cash Flow**

| Year | Investment | Financing: Borrow | Financing: Paid Back | Operating Cash Flow (Before Tax) | Sale Proceeds (Before Tax) | Net Cash Flow (Before Tax) |
|---|---|---|---|---|---|---|
| 0 | $ (3,590,000) | $ 2,000,000 | - | - | - | $ (1,590,000) |
| 1 | - | - | - | 120,861 | - | 120,861 |
| 2 | - | - | - | 128,686 | - | 128,686 |
| 3 | - | - | - | 136,834 | - | 136,834 |
| 4 | - | - | - | 144,857 | - | 144,857 |
| 5 | - | - | (1,771,603) | 153,611 | 4,096,617 | 2,478,625 |
| | | | | | Total | $ 1,419,862 |

**Financial Returns (Before Tax)**

| Without Financing | With Financing |
|---|---|
| 9.99% | 15.29% |

**The use of financing at a 50% LTV Ratio increased the Return on Investment (IRR) from 9.99% to 15.29%**

**Q13**

The example on the flip side shows prudent financial ratios for a safe versus a more risky investment.

***Your answer***

| | Safe investment | Risky investment |
|---|---|---|
| | Great location<br>AAA Credit Tenant(s)<br>Long term leases<br>Predictable cash flows | Poor location<br>Questionable tenants<br>High Vacancies<br>Unpredictable cash flows |
| Debt Service or Coverage | 1.10 -1.25 | 1.30 -1.45 |
| Default Ratio (Breakeven Point) | 85% to 90% | 65% to 75% |

**END**

**Real estate taxation**

**Q1.**

When calculating taxes which of the following are “EXPENSED” and which are expensed by claiming “DEPRECIATION”?

| | | |
|---|---|---|
| Maintenance | Expense | Depreciate |
| Improvements | Expense | Depreciate |
| Utilities | Expense | Depreciate |
| Insurance | Expense | Depreciate |
| Roof replacement | Expense | Depreciate |

***Circle your answer***

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**Q2.**

When an investor buys a commercial property, the value of the land is claimed over time using depreciation.

True False

***Circle your answer***

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**Q3.**

Recaptured depreciation tax paid by the seller because:

1) The value of the improvements on sale is greater than on acquisition or..

2) The value of the improvements on sale is less than on acquisition

***Circle your answer***

**Q4.**
When a property is sold, why is it important that the buyer and seller agree on the allocation of the purchase price between “Land” and “Improvements”?

**BUYER**
Wants the value of the improvements to be “**HIGH**” or “**LOW**”

SELLER
Wants the value of the improvements to be “**HIGH**” or “**LOW**”
***Circle your answers***

**Q5.**
What is a “Capital Gain”?
***Your answer***

**Q6.**
A “Capital Gain” is taxed at the Investor’s income tax rate.

True False

***Circle your answer***

**Q7.**
Your getting a listing to sell an income property.

The Investor has owned the property for many years, and it's gone up a lot in value.

Why is it important for the Investor to check with her accountant before selling the property?
***Your answer***

**Q8.**
What are the characteristics of income properties that are hard to sell because of the impact of taxes?
***Your answer***

**Q9.**
Can a full depreciation claim be made in the year of acquisition?

Yes No

***Circle your answer***

**Q10.**
What is the difference between "Amortization" and "Depreciation"
***Your answer***

**Q11.**

When listing and selling a property, why is it important to review the mortgage document?

***Your answer***

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**Q12.**

**A CAUTION**

***Flip side***

Taxation is complex and depends on the type of real estate and the legal entity used to own the real estate, such as a partnership or corporation and many other factors.

It is very important to get legal and accounting advice before acquiring or selling a property.