Raising Your Commercial IQ

102. Real Estate Investment Analysis

Neil Osborne M.B.A.
DL. (604) 988-9964
nosborne@investitsoftware.com
Investit Software Inc.
Toll-free 877-878-1828
North Vancouver BC
Canada
investit@investitsoftware.com
www.investitpro.com
N Osborne Copyright 2020
All rights reserved

Table of Contents

Objectives 3
Valuing commercial properties 4
Apparent Cap Rate versus the True Cap Rate 4
Factors that distort the Cap Rate. Examples 4
Long Term Real Estate Investment Analysis Introduction 7
Choosing between two investments 7
Calculating the Net Cash Flows before Tax 8
Financial Returns that incorporate the Time Value of Money 10
The Internal Rate of Return (IRR) 10
Relationship between the Internal Rate of Return (IRR) and Compound Interest 12
Why we use the Internal Rate of Return (IRR) 12
Financial Calculators 13
Net Present Value (NPV) 13
Determining the Discount Rate or Desired Return (IRR) 14
Modified Internal Rate of Return (MIRR) 15
The building blocks of Real Estate Investment Analysis 16
Real Estate Investment Analysis. Case Study 17
Common real estate investment analysis reports 19
Goal Seeking 20
Appraiser's Approach to Present Value 26
Determining the optimum holding period 28
Summary. The building blocks of investment analysis 33
Cash Flows. Timing and Sign Conventions 34
Timing and Sign Conventions. Summary 38
Cap Rate versus Internal Rate of Return (IRR) 39
Cap Rate and the Internal Rate of Return (IRR) Case Study 42
When does the Cap Rate equal the Internal Rate of Return? 44
Cap Rate versus Internal Rate of Return (IRR). Summary 45
What does the term "Return" mean? 46
Real Estate Taxation. Overview 47
Capital Gains Tax 48
Depreciation Claims 49
Amortization 49
Recaptured Depreciation Tax 50
Calculating Recaptured Depreciation 52
Properties that may be hard to sell because of tax implications 53
Properties that may be hard to sell because of mortgage restrictions 54
Introductory Case Study. Real Estate Investment Analysis 55
The Impact of Financial Leverage. Case study 56
Accumulated Wealth 60
Appendices 61
Information Sources and web sites 61

Objectives

This Video assumes that those attending understand the basics of commercial real estate or have participated in the Video “How to Value Income Properties”.

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 real estate decisions to help you list, sell or lease real estate during these challenging times.

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 the value

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

3. Real estate investment and discounted cash flow analysis

4. Risk assessment

5. The importance of financial leverage on the return on investment

NOTE: USA versus Canadian calculations

The examples provided in the manual are for the USA, where the default mortgage setting for the “Compounding Period” is monthly.

For Canada, the entries are the same except for mortgages, where the “Compounding Period” is semi-annually and the tax inputs and calculations are different.

The differences between the USA & Canadian tax calculations will be briefly explained.

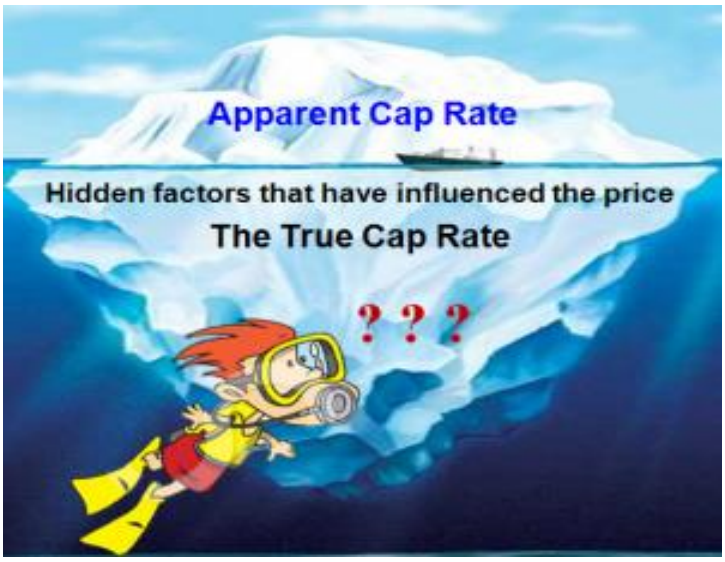
Valuing commercial properties

Introduction

Using the sale price and the Net Operating Income to calculate the Cap Rate can result in an incorrect Cap Rate because of factors that you were not aware of that influenced the price.

Apparent Cap Rate versus the True Cap Rate

The "Cap Rate" is just the tip of the iceberg



Factors that distort the Cap Rate. Examples

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%**

True Cap Rate is 7.59% Apparent Cap Rate" of 8.59% A 12.00% difference

Impact of the timing of lease renewal on cash flows and the property value

Question: What is the difference in value between Property A and Property B?

The rentable area is 20,000 Sq. Ft

Present Value Property A at 13.00% is **$3,514,593**

Base Rent	
Entry Choice: $ per Year	
Year 1 Jan	Stepped Projection (Lease)
	Term 1: $400,000 per Year for 1 year
	Term 2: Changed to $460,000 per Year for 5 years
	Term 3: Changed to $520,000 per Year for 5 years
	Term 4: Changed to $580,000 per Year for 5 years
	Term 5: Changed to $640,000 per Year for 5 years
Net Present Value (NPV) at 13.00%	$ 3,514,593

Present Value Property B at 13.00% is $2,960,062

Base Rent	
Entry Choice: $ per Year	
Year 1 Jan	Stepped Projection (Lease)
	Term 1: $400,000 per Year for 16 years
	Term 2: Changed to $640,000 per Year for 5 years
Net Present Value (NPV) at 13.00%	$ 2,960,062

NPV at a 13% Discount Rate Property A:	$3,514,593	
NPV at a 13% Discount Rate Property B:	2,960,062	
Difference	$ 554,531	(16%)

Cap Rates. Summary

Using a Cap Rate to determine the value of an income property is a very simplistic approach fraught with difficulties.

A more realistic approach is “Discounted Cash Flow Analysis” which projects the cash flow over time and takes into account the “Time Value of Money”

Comparing Case A with Case B above was an example of “Discounted Cash Flow Analysis” and the use of Net Present Value

Long Term Real Estate Investment Analysis Introduction

Projects the cash flows over time and takes onto account "The Time Value of Money" Called Discounted Cash Flow Analysis.

I'm going to borrow $10,000 from you and offer 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?

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)	_____%	_____%

Which would you prefer? Plan _____

Why: _____

_____

You have intuitively applied **"Discounted Cash Flow Analysis**" and taken

into account the **"Time Value of Money"**

Always balance **"Risk"** and **"Reward"**

Which is more Risky? Plan A or B _____

Choosing between two investments

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?

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)	_____ %	_____ %	**Internal Rate of Return (IRR)**

Calculating the Net Cash Flows before Tax

Analysis Time Period

In the example above the "Analysis Period" or the "Holding Period" is 12 years. The property will be sold at the end of the "Analysis Period".

Acquisition (Net Cash Flow)

The purchase is made at "Time Period Zero" and the Net Cash Flow is:

Purchase Price
Less: Mortgage
Equity (Net Cash Flow. Time Period zero)

Note that the Net Cash Flow or Equity which is the cash invested is shown as a negative. For Property A it is minus $1,000,000 because this is an outflow of cash. In contrast, revenue would be shown as a positive number because revenue is an inflow of cash.

Yearly Cash Flows

The calculation of the yearly cash flow 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

Cash Flow in the Last Year

At the end of the last year of the "Analysis Period" the building is sold and we calculate the "Sale Proceeds" as follows:

Sale Price
Less: Real Estate & legal fees
Repayment of the outstanding mortgage balance
Sale Proceeds

The Net Cash Flow in the last year is:

Net Cash Flow = Operating Cash Flow + Sale Proceeds

Financial Returns that incorporate the Time Value of Money

We need tools to calculate the financial returns which take into account the "Time Value of Money" to:

1. Calculate the financial return on the money invested. Is the financial return acceptable given the degree of risk and the financial returns available from other investment opportunities of similar risk?

2. Compare alternate investment opportunities.

The financial tools used are the:

Internal Rate of Return (IRR)

Net Present Value (NPV)

Modified Internal Rate of Return (MIRR).
Also called the “Financial Management Rate of Return (FMRR)

The Internal Rate of Return (IRR)

The IRR is the annual compounding return on investment

Why is it called the Internal Rate of Return (IRR)?

Because of the Reinvestment Assumption

If the IRR is 13% this assumes that:

a) Excess funds are reinvested at 13%

E.g. In Year 4 if the cash flow is +$30,000 it will in reinvested at 13%

b) If there is an operating loss, funds are borrowed at 13%

E.g. In Year 6 if there is a negative cash flow of -$30,000 it will be borrowed at 13%

The reinvestment assumption can cause the Internal Rate of Return (IRR) to be overstated

Think Compound Interest

An Investor has $300,000 to invest. They can:

a) invest $300,000 in a building and achieve an Internal Rate of Return (IRR) of 9.00%

b) loan $300,000 as a second mortgage at an Interest Rate of 9.00%

From a financial perspective, the financial returns are the same. Both provide a 9.00% interest rate on the money invested.

Always balance Risk and Rewards

Which is more risky?

Buying a building with a down payment of $300,000

Loan $300,000 as a second mortgage

Investing versus Lending

Invest in Real Estate	**Second Mortgage** **Conservative lender**
Return is unknown Could lose or make money	Return is known The interest rate
Cash flow and return is uncertain Based on assumptions and projections	Payment of principal and interest is known
More things can go wrong E.g. Major tenant moves out Building develops toxic mold	Very little can go wrong
Higher risk Requires a higher return Potential for a large capital gain	**Less risky than real estate investing**

Relationship between the Internal Rate of Return (IRR) and Compound Interest

If you invest $400,000 and get back the following cash flow per year at the end of each year, what is your annual return?

0	$<400,000>
1	160,000
2	160,000
3	160,000…..uniform annual cash flow

Because there is a uniform annual cash flow, any mortgage calculator can calculate the annual compound interest rate for the above cash flow.

Present Value: <400,000>
Future value: 0
Payment: $160,000 per year.
Payment: At end of year.
Compounding Frequency: Annual

Calculate the Interest Rate

Answer: **Interest Rate is 9.70%**

If you put the cash flow into a calculator that has an IRR and NPV function

The **Internal Rate of Return (IRR) will be 9.70%** which is the same as the interest rate of 9.70%.

Why we use the Internal Rate of Return (IRR)

If you invest $400,000 and get back the following cash flow per year at the end of each year.

What is your annual return?

What is your annual return?

1	$<400,000>
2	130,000
3	190,000
4	225,000…uneven annual cash flow

Answer: _____ %

A standard mortgage calculator can't calculate the annual interest rate because there is an uneven cash flow. You need a financial calculator with IRR and NPV features.

Financial Calculators

The easiest Financial Calculator to use is the Texas Instrument BAII Plus and BAII Plus Professional.

Another popular calculator is the HP-10B but it is a more difficult calculator to use, particularly in Canada where mortgages are compounded semi-annually.

Net Present Value (NPV)

The value today of the cash flow when taking into account the “Time Value of Money”

Net Present Value of the cash flow is calculated using the Investor’s “Desired Return”, “Discount Rate” or “Opportunity Cost”

If the Net Present Value is positive:

The return is greater than the Investor’s desired return or discount rate

If the Net Present Value is negative:

The return is less than the Investor’s desired return or discount rate

The Net Present Value (NPV) tells you how much you can pay for the property to get your desired return.

Following are the results of the analysis of an apartment building

Financial Returns (Before Tax) with Financing	
Internal Rate of Return (IRR)	10.34%
Net Present Value (NPV) at 13.00%	($ 352,044)
Modified Internal Rate of Return (MIRR)	9.22%
Short Term Financing Rate (Before Tax)	8.000%
Short Term Reinvestment Rate (Before Tax)	3.000%

The Net Present Value at 13.00% is <$352,044>

To achieve a return of 13.00%, the purchase price has to be reduced by $352,044

If the priced is dropped by $352,044 the Internal Rate of Return (IRR) will be exactly 13.00%

Financial Returns (Before Tax) with Financing	
Internal Rate of Return (IRR)	13.00%
Net Present Value (NPV) at 13.00%	$ 0
Modified Internal Rate of Return (MIRR)	11.37%
Short Term Financing Rate (Before Tax)	8.000%
Short Term Reinvestment Rate (Before Tax)	3.000%

Determining the Discount Rate or Desired Return (IRR)

We try to find published information about returns with similar risk

Government Bond Rate. Not useful because of the very low risk

A useful comparison is the second mortgage rate for the property under consideration

Example: The second mortgage rate is 8.50%

Investor's viewpoint.

If I can't get an Internal Rate of Return (IRR) higher than 8.50% then I'd be better off being a second mortgage lender

For most real estate investments, we need to add 1.00% to 5.00% depending on the risk to the second mortgage rate to take into account the additional risks of buying a property compared to being a conservative second mortgage lender.

Discount Rate or Desired Return. 9.00% up to 15.00% or higher depending on risk.

A typical figure for a medium risk investment is around 13.00% IRR before tax

Exception.
Prime rental apartments with very low Cap Rates (4.00% to 5.00%) because of the low vacancy risk and potential for strong capital appreciation

For a Cap Rate of 4.50%, the IRR is around 6.50%

Note: You cannot easily compare a Cap Rate with an Internal Rate of Return (IRR)

To compare the Cap Rate with the Internal Rate of Return IRR) you need to carry out a cash flow analysis on a specific property.

Modified Internal Rate of Return (MIRR)

The Internal Rate of Return (IRR) reinvestment assumption may cause an overstatement of the Internal Rate of Return (IRR). As an example:

Internal Rate of Return (IRR) is 13.32%

Positive cash flows will be reinvested at 13.32%
Negative cash flows or losses will be borrowed at 13.32%

An alternate to the Internal Rate of Return (IRR) is the Modified Internal Rate of Return (MIRR)

The Modified Internal Rate of Return (MIRR) uses a short term:

Financing Rate. Example 7.50%

Reinvestment Rate. Example 1.50%

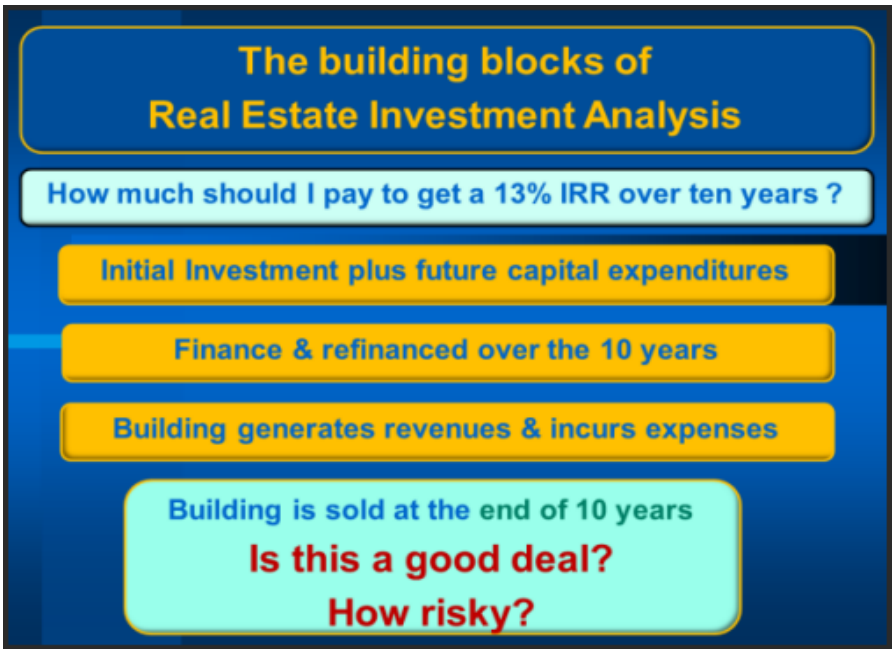
Example. The financial results of a rental apartment building cash flow analysis

Internal Rate of Return (Before Tax): 13.32%

Modified Internal Rate of Return (MIRR): 11.45%
Short Term Financing Rate (Before Tax): 7.50%
Short Term Borrowing Rate (Before Tax): 1.50%

Financial Returns (Before Tax) with Financing	
Internal Rate of Return (IRR)	13.32%
Net Present Value (NPV) at 13.00%	$ 36,828
Modified Internal Rate of Return (MIRR)	11.45%
Short Term Financing Rate (Before Tax)	7.500%
Short Term Reinvestment Rate (Before Tax)	1.500%

The building blocks of Real Estate Investment Analysis



The best way to analyze long term real estate investments is to develop the Net Cash Flow. Cap Rates are far too simplistic for properly evaluating a real estate investment.

The result is the Net Cash Flow Report. The financial measures we use are the Internal Rate of Return (IRR), Net Present Value (NPV) and Modified Internal Rate of Return (MIRR)

Real Estate Investment Analysis. Case Study

Mixed-Use Building

One Bedroom Units: 20
Two-bedroom Units: 9
Retail space: 5,000 Sq. Ft
Parking: 40 spaces

Analysis Period: 10 years

Investment (Asking Price) $3,000,000 (Land: $1,000,000 Building: $2,000,000)

Financing

Option A. Conventional first mortgage with 60% Loan to Value Ratio
First Mortgage: $1,800,000 Interest 6.00% 25 Amortization: 25 years
Loan to Value Ratio: 60%
Equity: $1,200,000 (40%)

Option B. Seller provides a second mortgage for 5 years
To reduce the buyer's equity from 40% to 25% the seller provides a second mortgage of $450,000 for five years.

First Mortgage: $1,800,000, Interest Rate: 6.00%, 25 Amortization for 5 years
Loan to Value Ratio: 60%

Second mortgage: $450,000 interest only mortgage at 8.00% for 5 years

Equity: $750,000 (25%)

At the end of the first 5 years:

1. The outstanding balance of the first mortgage and the second mortgage of $450,000 is paid off.

2. A new first mortgage is placed on the property beginning of Year 6 January using a 1.25 Debt Service Coverage Ratio for $2,500,000 at 6% interest, 25 year amortization.

Revenues & Expense Projections

REVENUE	Number	First Year	Increase per Yr.	Vacancy
One Bedroom Units	20 Units	$900 per mos.	3% per year compounding	3%
Two-bedroom Units	9 Units	$1,100 per mos.	4% per year compounding	3%
Laundry	29 Units	$15 per mos.	5% per year compounding	3%
Retail Space	5,000 Sq. Ft			
Base Rent	$15 per Sq. Ft per yr for 3 years then $16.39 for 5 years then $19.47 per Sq. Ft per yr.			Zero
Additional Rent (TIM's)	$3.00 per Sq. Ft per year increasing at 3.50% compounding per year			
Parking	40 spaces	$45 per month	5% per year compounding	Zero
EXPENSES				
Property Taxes	-	$90,000 per Yr.	5% for the next two years then 4% per year compounding	
Insurance	-	$45,000 per Yr.	5% per year compounding	
Maintenance. Rental Units	29 Units	$400 per Yr.	4% per year compounding	
Maintenance. Retail Space	-	$700 per mos.	3% per year compounding	
Resident Caretaker	-	$3,000 per mos.	4% per year compounding	
Property Manager	-	4% of Effective Gross Income		
Other Expenses	-	3% of Potential Gross Income		

Sale at the end of the 10 year Analysis Period

Sale Price. Based on a 7.00% Cap Rate using the Net Operating Income for the year following the sale

Real Estate Fees: 4.00% of the Sale Price
Selling Expenses: $6,000
Legal Fees: $5,000

Questions

1. How much to pay for the property to get a 13% return (Internal Rate of Return) before tax?

2. How does the return (Internal Rate of Return) change if the seller carries a second mortgage for $450,000 interest only loan at 8% for five years? The property will be refinanced at the end of the fifth year using a Debt Service Coverage Ratio (DSCR) of 1.25

3. How much money does the investor receive when the property is refinanced at the end of the first five years?

Common real estate investment analysis reports

Option A. Conventional first mortgage with 60% Loan to Value Ratio

Net Cash Flow Report (Money Tree Diagram)
Provides a broad overview of the investment over the ten year period.

Net Cash Flow (Before Tax)
Parklane Place
Mixed Use Building

September 06, 2012
Investor Pro
Video Parklane Analysis

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	$ (3,000,000)	$ 1,800,000	-	$ 80,045	-	$ (1,119,955)
Year 2 Jan-Year 2 Dec	-	-	-	83,091	-	83,091
Year 3 Jan-Year 3 Dec	-	-	-	86,111	-	86,111
Year 4 Jan-Year 4 Dec	-	-	-	96,104	-	96,104
Year 5 Jan-Year 5 Dec	-	-	-	100,298	-	100,298
Year 6 Jan-Year 6 Dec	(250,000)	-	-	104,306	-	(145,694)
Year 7 Jan-Year 7 Dec	-	-	-	108,745	-	108,745
Year 8 Jan-Year 8 Dec	-	-	-	113,019	-	113,019
Year 9 Jan-Year 9 Dec	-	-	-	131,549	-	131,549
Year 10 Jan-Year 10 Dec	-	-	(1,374,335)	136,021	3,825,791	2,587,478
					Total	$ 2,040,746

Financial Returns (Before Tax) with Financing

Internal Rate of Return (IRR)	12.04%
Net Present Value (NPV) at 13.00%	($ 81,854)
Modified Internal Rate of Return (MIRR)	10.19%
Short Term Financing Rate (Before Tax)	7.000%
Short Term Reinvestment Rate (Before Tax)	1.500%

If the Purchase Price was reduced by $81,854 the Internal Rate of Return (IRR) would be 13%

Question

1. How much to pay for the property to get a 13% return (Internal Rate of Return) before tax?

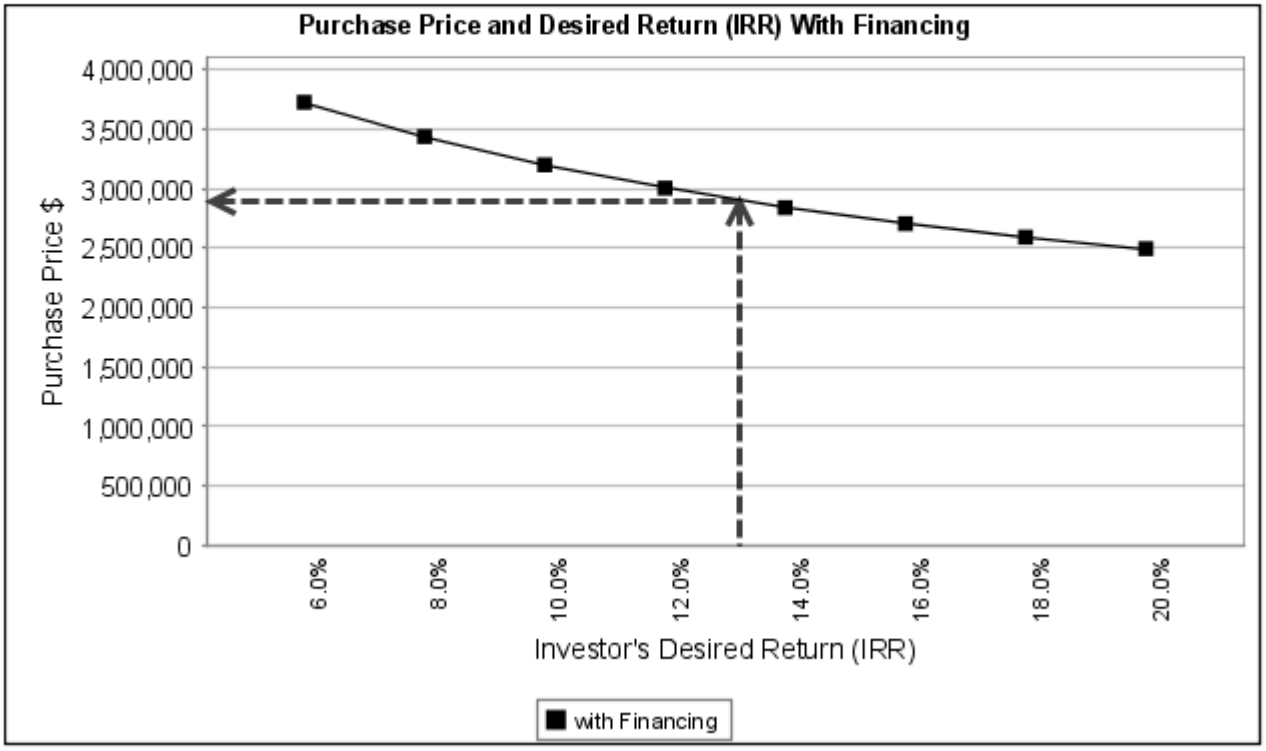
Answer: $3,000,000 – 81,854 (NPV at 13%) = $2,918,146

Purchase Price versus the Desired Return

Example: If we wanted a 13% Return (IRR) the most we can pay for the property is just under $3,000,000

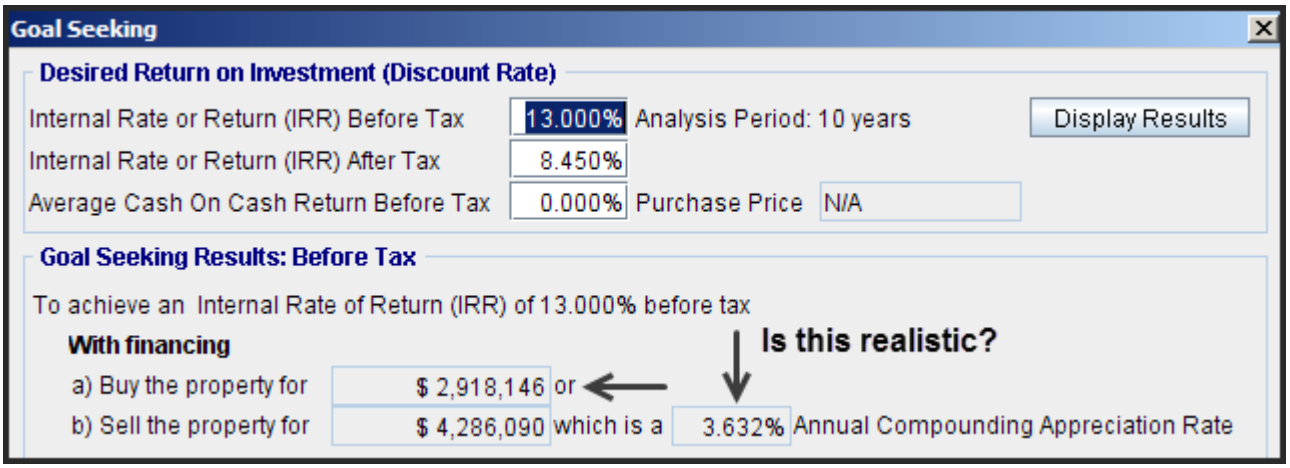
Graph. Purchase Price & Desired Return (Before Tax)
Parklane Place
Mixed Use Building

September 06, 2012
Investor Pro
Video Parklane Analysis



Goal Seeking

How much to pay for the property to get the desired return of 13%?.



Overall Operating Cash Flow Report

Show all the inflows and outflows and the financial results over the analysis period of ten years.

Overall Cash Flow Yearly
Parklane Place
Mixed User Building

August 13, 2012
Investor Pro
Video Parklane Analysis

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Potential Gross Income	451,620	464,830	478,439	499,035	513,786	528,752	544,640	560,816	592,811	610,201
Less: Vacancy & Credit Loss Allow.	10,201	10,548	10,909	11,263	11,651	12,043	12,459	12,881	13,314	13,767
Effective Gross Income	441,419	454,282	467,590	487,772	502,135	516,709	532,181	547,934	579,497	596,434
Operating Expenses	222,205	232,022	242,310	252,499	262,667	273,234	284,267	295,746	308,779	321,243
Net Operating Income	219,214	222,260	225,280	235,273	239,468	243,475	247,914	252,189	270,718	275,191
Less: Principal Payments	32,041	34,017	36,115	38,343	40,707	43,218	45,884	48,714	51,718	54,908
Interest payments	107,128	105,152	103,054	100,827	98,462	95,951	93,285	90,455	87,451	84,261
OPERATING CASH FLOW BEFORE TAX	80,045	83,091	86,111	96,104	100,298	104,306	108,745	113,019	131,549	136,021
Less: Income Tax at 35.00%	14,844	15,533	17,325	21,602	23,898	17,429	19,915	22,402	29,939	33,690
OPERATING CASH FLOW AFTER TAX	65,200	67,557	68,786	74,502	76,401	86,877	88,829	90,617	101,610	102,332
INVESTMENTS & CAPITAL IMPROVEMENTS										
Land	(1,000,000)	-	-	-	-	-	-	-	-	-
Building	(2,000,000)	-	-	-	-	-	-	-	-	-
Roof Replacement	-	-	-	-	-	(250,000)	-	-	-	-
	(3,000,000)	-	-	-	-	(250,000)	-	-	-	-
FINANCING Borrow(+) Payback(-)										
First Mortgage	1,800,000	-	-	-	-	-	-	-	-	(1,374,335)
	1,800,000	-	-	-	-	-	-	-	-	(1,374,335)
SALE										
Sale Price										3,996,657
Less: Real Estate Commissions										159,866
Selling Expenses										11,000
Net Sales Proceeds (Before Tax)										3,825,791
Less: Taxes Paid On Sale										260,409
Net Sales Proceeds (After Tax)										3,565,382
OVERALL CASH FLOW BEFORE TAX	(1,119,955)	83,091	86,111	96,104	100,298	(145,694)	108,745	113,019	131,549	2,587,478
OVERALL CASH FLOW AFTER TAX	(1,134,800)	67,557	68,786	74,502	76,401	(163,123)	88,829	90,617	101,610	2,293,379
FINANCIAL RETURNS										
Before Tax										
Internal Rate of Return (IRR)	12.04%									
Net Present Value (NPV) at 13.00%	(81,854)									
After Tax										
Internal Rate of Return (IRR)	9.72%									
Net Present Value (NPV) at 8.45%	128,704									

Operating Cash Flow Report

Shows the before and after tax cash flows from operations over the analysis period of ten years.

Operating Cash Flow Yearly
Parklane Place
Mixed Use Building

September 06, 2012
Investor Pro
Video Parklane Analysis

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH FLOW BEFORE TAX										
Potential Gross Income	**451,620**	**464,830**	**478,499**	**499,035**	**513,786**	**528,752**	**544,640**	**560,816**	**592,811**	**610,201**
Less: Vacancy & Credit Loss Allow.	10,201	10,548	10,909	11,263	11,651	12,043	12,459	12,881	13,314	13,767
Effective Gross Income	**441,419**	**454,282**	**467,590**	**487,772**	**502,135**	**516,709**	**532,181**	**547,934**	**579,497**	**596,434**
Operating Expenses	222,205	232,022	242,310	252,499	262,667	273,234	284,267	295,746	308,779	321,243
Net Operating Income	**219,214**	**222,260**	**225,280**	**235,273**	**239,468**	**243,475**	**247,914**	**252,189**	**270,718**	**275,191**
Less: Principal Payments	32,041	34,017	36,115	38,343	40,707	43,218	45,884	48,714	51,718	54,908
Interest payments	107,128	105,152	103,054	100,827	98,462	95,951	93,285	90,455	87,451	84,261
CASH FLOW BEFORE TAX	**80,045**	**83,091**	**86,111**	**96,104**	**100,298**	**104,306**	**108,745**	**113,019**	**131,549**	**136,021**
Less: Income Tax at 35.00%	14,844	15,533	17,325	21,602	23,898	17,429	19,915	22,402	29,939	33,690
CASH FLOW AFTER TAX	**65,200**	**67,557**	**68,786**	**74,502**	**76,401**	**86,877**	**88,829**	**90,617**	**101,610**	**102,332**
INCOME TAX CALCULATIONS										
Net Operating Income	219,214	222,260	225,280	235,273	239,468	243,475	247,914	252,189	270,718	275,191
Less: Interest Payments	107,128	105,152	103,054	100,827	98,462	95,951	93,285	90,455	87,451	84,261
Depreciation & Amortization	69,673	72,727	72,727	72,727	72,727	97,727	97,727	97,727	97,727	94,673
Taxable Income	**42,413**	**44,381**	**49,499**	**61,720**	**68,279**	**49,797**	**56,901**	**64,006**	**85,540**	**96,257**
Income Tax at 35.00%	**14,844**	**15,533**	**17,325**	**21,602**	**23,898**	**17,429**	**19,915**	**22,402**	**29,939**	**33,690**

Income & Expense Statement

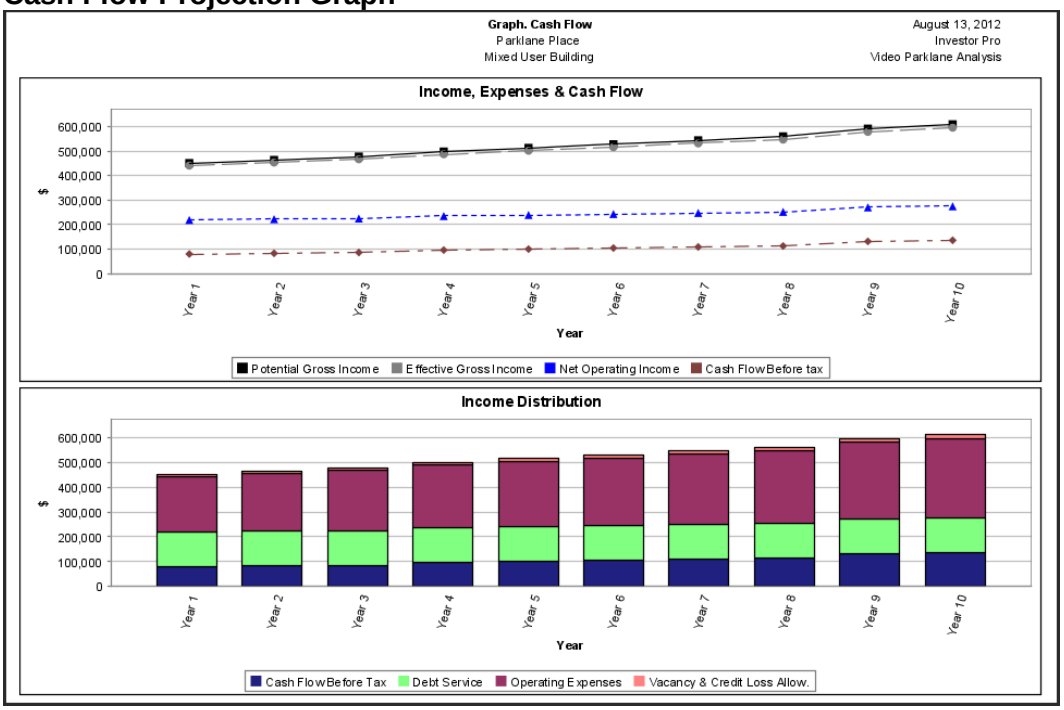
Income & Expense Statement Yearly
Parklane Place
Mixed Use Building

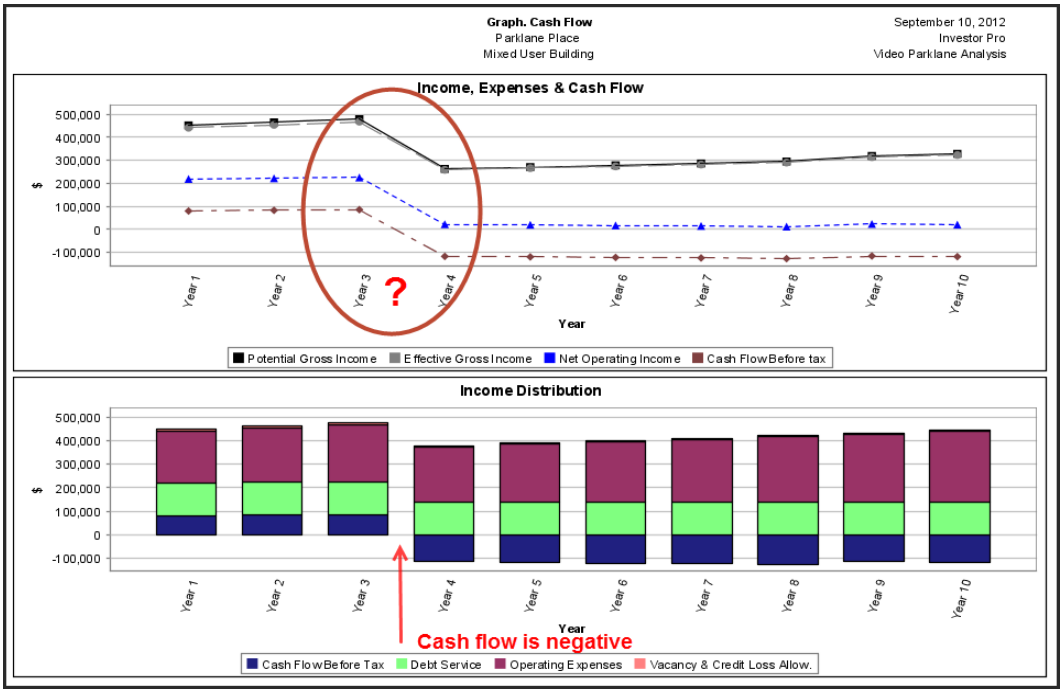
September 06, 2012
Investor Pro
Video Parklane Analysis

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
REVENUE											
One bedroom Units	216,000	222,480	229,200	235,920	243,120	250,320	258,000	265,680	273,600	281,760	290,400
Two bedroom Units	118,800	123,552	128,520	133,596	138,996	144,504	150,336	156,384	162,540	169,128	175,824
Laundry	5,220	5,568	5,916	5,916	6,264	6,612	6,960	7,308	7,656	8,004	8,352
Parking	21,600	22,680	23,813	25,003	26,256	27,566	28,944	30,394	31,915	33,509	35,184
Retail Tenant Rent	75,000	75,000	75,000	81,950	81,950	81,950	81,950	81,950	97,350	97,350	97,350
Recoverable Expenses (TIM's)	15,000	15,550	16,050	16,650	17,200	17,800	18,450	19,100	19,750	20,450	21,150
Potential Gross Income	**451,620**	**464,830**	**478,499**	**499,035**	**513,786**	**528,752**	**544,640**	**560,816**	**592,811**	**610,201**	**628,260**
Less: Vacancy & Credit Loss Allowance	10,201	10,548	10,909	11,263	11,651	12,043	12,459	12,881	13,314	13,767	14,237
Effective Gross Income	**441,419**	**454,282**	**467,590**	**487,772**	**502,135**	**516,709**	**532,181**	**547,934**	**579,497**	**596,434**	**614,023**
Operating Expenses											
Property Taxes	90,000	94,500	99,225	103,194	107,322	111,615	116,079	120,722	125,551	130,573	135,796
Insurance	45,000	47,250	49,613	52,093	54,698	57,433	60,304	63,320	66,485	69,810	73,300
Maintenance Rental Units	11,600	12,064	12,557	13,050	13,572	14,123	14,674	15,254	15,863	16,501	17,168
Maintenance Retail space	8,400	8,652	8,916	9,180	9,456	9,732	10,032	10,332	10,644	10,956	11,292
Resident Caretaker	36,000	37,440	38,940	40,500	42,120	43,800	45,552	47,376	49,272	51,240	53,292
Property Manager	17,657	18,171	18,704	19,511	20,085	20,668	21,287	21,917	23,180	23,857	24,561
Other Expenses	13,549	13,945	14,355	14,971	15,414	15,863	16,339	16,824	17,784	18,306	18,848
	222,205	232,022	242,310	252,499	262,667	273,234	284,267	295,746	308,779	321,243	334,257
Net Operating Income	**219,214**	**222,260**	**225,280**	**235,273**	**239,468**	**243,475**	**247,914**	**252,189**	**270,718**	**275,191**	**279,766**

Analysis Period plus One Year

Cash Flow Projection Graph





Cash Flow from Sale

Shows the cash flow from sale (before and after tax) when the property is sold in ten years' time.

Sometimes called the Reversionary Value

Cash Flow from Sale
Parklane Place
Mixed User Building

November 16, 2012
Investor Pro
Video Parklane Analysis

Cash Flowfrom Sale (Before Tax)

Sale Price			$	3,996,657
Less: Real Estate Commission				159,866
Selling Expenses				6,000
Legal Expenses				5,000
Net Sale Price				3,825,791
Less: Mortgage Repayment				1,374,335
Cash Flow from Sale (Before Tax)				**2,451,456**

Cash Flowfrom Sale (After Tax) USA tax calculations

Canada. 50% of gain is added to income & taxed at the marginal tax rate

Net Sale Price				3,825,791
Less: Capital Gains Tax				
Net Sale Price	3,825,791			
Less Cost Basis	3,250,000			
Capital Gains	575,791	x	15.00%	86,369
Less: Recaptured Depreciation Tax				
Tax Value of Improvements on Sale	2,250,000			
Less Adjusted Basis	1,484,147			
Recaptured Depreciation	765,853	x	25.00%	191,463
Net Proceeds (After Tax)				3,547,959
Less: Mortgage Repayment				1,374,335
Cash Flow from Sale (After Tax)				**2,173,624**

Canada. Recapture Depreciation Tax
Recaptured depreciation is added to income and taxed at the marginal tax rate

Financial Measures. Financing Potential & Risk Assessment

Financial Measures Summary
Parklane Place
Mixed User Building

August 13, 2012
Investor Pro
Video Parklane Analysis

Purchased for 7.31% Cap Rate

Financial Returns.

Cap Rate using the investment in Year 1 of $ 3,000,000 — 7.31%

Bought for a 7.31% Cap Rate
Achieved an IRR of 12.04% before tax

		With Financing	Without Financing
Internal Rate of Return (IRR)	Before Tax	12.04%	8.94%
	After Tax	9.72%	6.70%
Net Present Value (NPV)	Before Tax	($ 81,854) at 13.00%	($ 721,825) at 13.00%
	After Tax	$ 128,704 at 8.45%	($ 371,633) at 8.45%
Modified Internal Rate of Return (MIRR)	Before Tax	10.19%	7.44%
Short Term Financing Rate (Before Tax)		7.00%	7.00%
Short Term Reinvestment Rate (Before Tax)		1.50%	1.50%
Modified Internal Rate of Return (MIRR)	After Tax	8.28%	5.73%
Short Term Financing Rate (After Tax)		4.55%	4.55%
Short Term Reinvestment Rate (Before Tax)		0.98%	0.98%

Shows the impact of financial leverage
With financing IRR is 12.04% before tax
Without financing IRR is 8.94%
Financing increase the IRR by 34%

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)	Overall Operating Expense Ratio (Using PGI)
Year 1	56.69%	55.68%	1.58	80.02%	49.20%
Year 2	55.93%	53.88%	1.60	79.86%	49.92%
Year 3	53.55%	50.51%	1.62	79.72%	50.64%
Year 4	52.62%	48.51%	1.69	78.49%	50.60%
Year 5	51.75%	46.54%	1.72	78.21%	51.12%
Year 6	50.82%	44.49%	1.75	78.00%	51.68%
Year 7	49.96%	42.46%	1.78	77.75%	52.19%
Year 8	46.54%	38.29%	1.81	77.55%	52.73%
Year 9	45.79%	36.36%	1.95	75.56%	52.09%
Year 10	45.04%	34.39%	1.98	75.45%	52.65%

Operating expenses seem realistic

Loan to Value Ratio
Is low. There may be an opportunity to increase the first mortgage or arrange a second mortgage with the seller

The Default Ratio (Breakeven Point) indicates that there may be some room to increase the first mortgage to bring the Default Ratio closer to 85%

Debt Coverage Ratio
Indicates potential to increase the first mortgage to bring the ratio closer to 1.25

SUMMARY

RISK ASSESSMENT
Relatively safe in terms of:
1. Debt Coverage Ratio (Debt Service Ratio)
2. Default Ratio (Breakeven Point)

OPERATING EXPENSES
Seem realistic

POTENTIAL FOR REFINANCING
1. Some potential to increase the first mortgage
2. Good potential to create a second mortgage with the seller

Appraiser's Approach to Present Value

Appraisers like to examine:

How much of the Present Value is generated by:

1. Net Operating Income
2. Capital Appreciation and sales proceeds (Called the Reversionary Value)

This analysis is done without financing and before tax.

This approach can identify if there is too much reliance on "Capital Appreciation" instead of the "Net Operating Income" in determining the value

Present Value Appraisal
Parklane Place
Mixed User Building

August 13, 2012
Investor Pro
Video Parklane Analysis

Year	Net Operating Income	Present Value Discount Factor at 13.00%	Present Value Net Operating Income	Property Reversion (Sale)	Present Value Discount Factor at 13.00%	Present Value Property Reversion (Sale)	Overall Present Value
Year 1 Jan-Year 1 Dec	219,214	0.88495575	193,995				193,995
Year 2 Jan-Year 2 Dec	222,260	0.78314668	174,062				174,062
Year 3 Jan-Year 3 Dec	225,280	0.69305016	156,130				156,130
Year 4 Jan-Year 4 Dec	235,273	0.61331873	144,298				144,298
Year 5 Jan-Year 5 Dec	239,468	0.54275994	129,973				129,973
Year 6 Jan-Year 6 Dec	243,475	0.48031853	116,946				116,946
Year 7 Jan-Year 7 Dec	247,914	0.42506064	105,378				105,378
Year 8 Jan-Year 8 Dec	252,189	0.37615986	94,863				94,863
Year 9 Jan-Year 9 Dec	270,718	0.33288483	90,118				90,118
Year 10 Jan-Year 10 Dec	275,191	0.29458835	81,068	3,825,791	0.29458835	1,127,033	1,208,101
		Present Values	**1,286,831**			**1,127,033**	**2,413,864**

Sale Proceeds

CASH FLOW. PRESENT VALUE SUMMARY

Present Value Net Operating Income	1,286,831	53.31%
Present Value of Reversion (Sale)	1,127,033	46.69%
Present Value at 13.00%	**2,413,864**	**100.00%**

53.31% of the value is generated by the Net Operating Income

46.69% is generated by capital appreciation

Note: Present Value is calculated before tax and excludes financing and capital expenditures

Revenue & Expense Projections

EXPENSES PROJECTIONS

Property Taxes
Entry Choice: $ per Year
Year 1 — $90,000 per Year
Compounding at 5.00% per year for next 2 years
then Compounding at 4.00% per year for next 8 years

Insurance
Entry Choice: $ per Year
Year 1 — $45,000 per Year
Compounding at 5.00% per year for next 10 years

Maintenance Rental Units
Entry Choice: $ per Unit x Total No.of Units per Year
Quantity: 29
Year 1 — $400 per Unit x Total No.of Units per Year
Compounding at 4.00% per year for next 10 years

Maintenance Retail space
Entry Choice: $ per Month
Year 1 — $700 per Month for 1 year
Compounding at 3.00% per year for next 10 years

Resident Caretaker
Entry Choice: $ per Month
Year 1 — $3,000 per Month for 1 year
Compounding at 4.00% per year for next 10 years

Property Manager
Entry Choice: % of Effective Gross Income
Year 1 — 4.00% of Effective Gross Income
Constant per year for next 10 years

Other Expenses
Entry Choice: % of Potential Gross Income
Year 1 — 3.00% of Potential Gross Income
Constant per year for next 10 years

REVENUE PROJECTIONS

One bedroom Units
Entry Choice: $ per Unit per Month
Quantity: 20
Year 1 — $900 per Unit per Month for 1 year
Compounding at 3.00% per year for next 10 years

Two bedroom Units
Entry Choice: $ per Unit per Month
Quantity: 9
Year 1 — $1,100 per Unit per Month for 1 year
Compounding at 4.00% per year for next 10 years

Laundry
Entry Choice: $ per Unit x Total No.of Units per Month
Quantity: 29
Year 1 — $15 per Unit x Total No.of Units per Month for 1 year
Compounding at 5.00% per year for next 10 years

Parking
Entry Choice: $ per Space per Month
Quantity: 40
Year 1 — $45.00 per Space per Month for 1 year
Compounding at 5.00% per year for next 10 years

Retail Tenant Rent
Entry Choice: $ per Sq. Ft per Year
Quantity: 5,000
Year 1 Jan — Stepped Projection (Lease)
Term 1: $15.00 per Sq. Ft per Year for 3 years
Term 2: Increased by 3.00% compounding per year to $16.39 per Sq. Ft per Year for 5 years
Term 3: Increased by 3.50% compounding per year to $19.47 per Sq. Ft per Year for 3 years

Recoverable Expenses (TIM's)
Entry Choice: $ per Sq. Ft per Year
Quantity: 5,000
Year 1 — $3.00 per Sq. Ft per Year
Compounding at 3.50% per year for next 10 years

Determining the optimum holding period

Assumes the building is sold at the end of each year.

In this example, the maximum Internal Rate of Return (IRR) is 15.56% before suggesting the best time to sell the building is at the end of year 3

IRR & MIRR Year by Year (Before Tax)
Parklane Place
Mixed User Building

August 14, 2012
Investor Pro
Video Parklane Analysis

Year	Investment Year 1	Estimated Sale Price	IRR (Before Tax)	MIRR (Before Tax)
Year 1 Jan-Year 1 Dec	$ (3,000,000)	$ 3,175,140	12.44%	12.44%
Year 2 Jan-Year 2 Dec		3,218,288	12.46%	12.14%
Year 3 Jan-Year 3 Dec		3,361,047	14.56%	13.85%
Year 4 Jan-Year 4 Dec		3,420,966	14.12%	13.14%
Year 5 Jan-Year 5 Dec		3,478,220	10.82%	9.83%
Year 6 Jan-Year 6 Dec		3,541,624	11.04%	9.73%
Year 7 Jan-Year 7 Dec		3,602,694	11.13%	9.72%
Year 8 Jan-Year 8 Dec		3,867,401	12.27%	10.60%
Year 9 Jan-Year 9 Dec		3,931,295	12.14%	10.39%
Year 10 Jan-Year 10 Dec		3,996,657	12.04%	10.19%

Best time to sell

Modified Internal Rate of Return (MIRR)
Short Term Financing Rate (Before Tax) 7.000%
Short Term Reinvestment Rate (Before Tax) 1.500%

Investment Analysis. Option B. Seller provides a second mortgage for 5 years

To reduce the buyer's equity from 40% to 25% the seller provides a second mortgage of $450,000 for five years.

First Mortgage: $1,800,000, Interest Rate: 6.00%, 25 Amortization for 5 years
Loan to Value Ratio: 60%

Second mortgage: $450,000 interest only mortgage at 8.00% for 5 years

Equity: $750,000 (25%)

At the end of the first 5 years:

3. The outstanding balance of the first mortgage and the second mortgage of $450,000 is paid off.

4. A new first mortgage is placed on the property beginning of Year 6 January using a 1.25 Debt Service Coverage Ratio for $2,500,000 at 6% interest, 25 year amortization.

Question:
How does the return (Internal Rate of Return) change if the seller carries a second mortgage for $450,000 interest only loan at 8% for five years? The property will be refinanced at the end of the fifth year using a Debt Service Coverage Ratio (DSCR) of 1.25

Net Cash Flow Report Option B with Seller Financing

Net Cash Flow (Before Tax)
Parklane Place
Mixed Use Building with Seller Financing

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	$ (3,000,000)	$ 2,250,000	-	$ 44,045	-	$ (705,955)
Year 2 Jan-Year 2 Dec	-	-	-	47,091	-	47,091
Year 3 Jan-Year 3 Dec	-	-	-	50,111	-	50,111
Year 4 Jan-Year 4 Dec	-	-	-	60,104	-	60,104
Year 5 Jan-Year 5 Dec	-	-	(2,068,777)	64,298	-	(2,004,479)
Year 6 Jan-Year 6 Dec	(250,000)	2,500,000	-	50,185	-	2,300,185
Year 7 Jan-Year 7 Dec	-	-	-	54,623	-	54,623
Year 8 Jan-Year 8 Dec	-	-	-	58,898	-	58,898
Year 9 Jan-Year 9 Dec	-	-	-	77,428	-	77,428
Year 10 Jan-Year 10 Dec	-	-	(2,248,302)	81,900	3,830,786	1,664,384
					Total	$ 1,602,390

Financial Returns (Before Tax) with Financing

Internal Rate of Return (IRR)	15.17%
Net Present Value (NPV) at 13.00%	$ 116,269
Modified Internal Rate of Return (MIRR)	12.35%
Short Term Financing Rate (Before Tax)	7.000%
Short Term Reinvestment Rate (Before Tax)	1.500%

The Seller Financing increases the Internal Rate from 12.04% to 15.17% a 26% increase but increases the financial risk

Financial Impact with Seller's second mortgage

Financial Operating Ratios **With the Seller's financing**

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)	Overall Operating Expense Ratio (Using PGI)
Year 1	70.86%	69.85%	1.25	87.99%	49.20%
Year 2	69.91%	67.86%	1.27	87.60%	49.92%
Year 3	66.94%	63.90%	1.29	87.25%	50.64%
Year 4	65.77%	61.66%	1.34	85.70%	50.60%
Year 5	64.69%	59.48%	1.37	85.22%	51.12%
Year 6	70.59%	69.33%	1.26	88.23%	51.68%
Year 7	69.39%	66.85%	1.28	87.68%	52.19%
Year 8	64.64%	60.97%	1.30	87.20%	52.73%
Year 9	63.59%	58.63%	1.40	84.69%	52.09%
Year 10	62.55%	56.25%	1.42	84.32%	52.65%

Comparison Report

Net Cash Flow(Before Tax)		Investment Video Parklane Analysis	Investment Video Parklane Seller Financing
Year	0	(1,200,000)	(750,000)
	1	80,045	44,045
	2	83,091	47,091
	3	86,111	50,111
	4	96,104	60,104
	5	(149,702)	245,521
	6	104,306	50,185
	7	108,745	54,623
	8	113,019	58,898
	9	131,549	77,428
	10	2,587,478	1,664,384
	11		
	Total	2,040,746	1,602,390
Before Tax Financial Return			
With Financing			
Internal Rate of Return (IRR)		12.04%	15.17%
Net Present Value (NPV)		($ 81,854)	$ 116,269
NPV. Discount Rate		13.00%	13.00%
MIRR		10.19%	12.35%
Short term financing rate		7.000%	7.000%
Short term reinvestment rate		1.500%	1.500%

What happens when the building is refinanced in 5 years?

Create a new first mortgage	$2,500,000
Pay off OSB First Mortgage	1,608,777
Pay off OSB Second Mortgage	450,000
New owner gets	$ 431,223

When the new mortgage is put in place at the end of the first five years the funds will be used to pay off the outstanding balance of the existing first mortgage of $1,608,777 and the second mortgage of $450,000 with the investor receiving cash of $431,223.

Summary from the Buyer's and Seller's perspective

It is helpful to summarize the advantages and disadvantages from the buyer's and seller's perspective

Summary from the buyer's perspective

The challenge
For the buyer to get a 13% IRR before tax the price has to drop from $3,000,000 by $81,854 to $2,918,146. The challenge is that the buyer has to come up with 40% equity which is a lot of money. This will make it hard to put the deal together.

The good news
The analysis indicates that there is plenty of room to have the seller provide a second mortgage for five years.

The solution
Explore a second mortgage with the seller
$450,000 Interest only at 8.00% for five years
Refinance the first mortgage at the end of 5 years

Financial impact of the buyer
The seller's second mortgage increases the return (IRR) from 12.04% to 15.27%
Reduces the buyer's equity from 40% to 25%
Refinancing at the end of five years the buyer (investor) receives $431,223 cash

Risk
Default or Breakeven Point goes for 80% to 88% which is a little high
Debt Service Ratio goes from 1.58 to 1.25
Carrying the seller's second mortgage increases the risk but the investment is relatively safe with a 1.25 Debt Service Ratio.

Summary from the seller's perspective
Agreeing to the second mortgage arrangement makes the property much easier to sell

There are many more buyers if the equity is 25% compared to 40% equity

Recommendations

1. Check that the current first mortgage allows a second mortgage to be placed on the property
2. Find out if the first mortgage can be paid off in five years' time
3. Consult with an accountant to establish the tax consequences of selling the property and carrying a second mortgage
4. If cleared by your legal and tax advisors offer the second mortgage but consider increasing the price above $3,000,000 because the second mortgage increases the buyer's return from 12.04% to 15.20% and the buyer's desired return is 13%

Recap

We started by asking the following questions:

1. How much to pay for the property to get the investor's desired return of 13% before tax?
2. Is there potential for increasing the financing now or in the future?
3. How risky is the investment?
4. What is the financial impact on having the seller carry a second mortgage at 8.00% for five years?

We then carried out real estate investment analysis to answer these questions and developed recommendations from the buyer's and seller's perspective.

Summary. The building blocks of investment analysis

Cash Flows. Timing and Sign Conventions

Introduction
When carrying out discounted cash flow analysis and calculating the Internal Rate of Return (IRR) and the Net Present Value (NPV) we follow the industry standard timing and sign convention.

The reason we use a timing convention is that we are discounting the cash flow back to time period zero or the beginning of the first year to calculate the Internal Rate of Return and Net Present value

Time period zero. This is when the initial investment is made. The beginning of the first year

Cash flows. Occur at either the beginning or end of the year even if they occur during the year
Examples: Investments are assumed to be made at the beginning of the year
Revenues occur at the end of the year

Sign convention. The best way to decide whether a cash flow is “Positive” or “Negative” is from the investor’s viewpoint and their bank account.

Money coming into the investor’s bank account is positive such as:
Rent and other revenues, sale of the building at the end of the analysis period
Creation of a mortgage

Money going out of the investor’s bank account is negative such as:
Initial investment and future capital expenditures
Expenses, principal, and interest payments. Repayment of a mortgage

Investment and Future Capital Expenditures

We can analyze an investment using either “Before” or “After” tax analysis.

Before Tax Analysis. The investment or purchase price can be a single number. E.g. $3,000,000

After Tax Analysis. To set up the depreciation we break the purchase into "Land" and "Improvements". Land is not depreciable but the improvements are.

Land	$ 1,000,000	Non depreciable
Improvements	2,000,000	Depreciable asset
Purchase Price	**$ 3,000,000**	

Investments and Future Capital Expenditures. Timing and sign convention

	Timing	Sign Convention
Purchase (Investment)	Beginning of year	Negative $3,000,000 (Outflow)
Future capital expenditures Roof replacement. Year 6	Beginning of year	Negative <$250,000 per mos.> (Outflow)

Example. If the roof was replaced in August of Year six for <$250,000> the expenditure is assumed to be made at the beginning of year 6 (or the end of year 5) for discounting purposes

Financing & Refinancing

Creation of a mortgage

For discounting purposes, the creation of a mortgage is assumed to occur at the beginning of the year even if the funds were received during the year.

If the mortgage was arranged when the property was purchased the funds are assumed to be received at the beginning of the year which is time period zero.

Strange as it may seem, funds flowing from the creation of a mortgage are “Positive” because they are a cash inflow from the investor’s perspective.

Repayment of a mortgage

A mortgage may be repaid at any time during the analysis or holding period>. The outstanding mortgage balances at the end of the ‘Analysis Period” are always repaid when the property is sold.

For discounting purposes, the repayment of a mortgage is assumed to occur at the end of the year even if the mortgage was repaid much earlier in the year.

Principal and Interest Payments

Generally paid monthly but are assumed to be paid at the end of the year when discounting the cash flows to calculate the Internal Rate of Return (IRR) and Net Present Value (NPV)

Principal and interest payments are negative because they are a cash outflow.

Financing. Timing and sign convention summary

	Timing	Sign Convention
Creation of the mortgage	Beginning of year	Positive $1,800,000 (Outflow)
Repayment of the mortgage	End of year	Negative <$1,374,333> (Outflow)
Payments of Principal & Interest	End of year	Negative <$11,597 per mos.> (Outflow)

Revenues, Expenses & Vacancy Allowances

In developing the cash flows we project the revenues, vacancies and expenses out over the analysis or holding period **plus one year.**

As an example, if the analysis period was 10 years we would project the revenues, vacancies and expenses over 11 years even though the property is being sold at the end of the tenth year.

The reason we project one year past the analysis period is that we want to develop the Net Operating Income for the year following the sale. Investors and appraisers, while interested in past performance, are most focused on future incomes and expenses.

The traditional way to calculate the sale price at the end of the analysis period is to use the "Net Operating Income" for the year following the sale and the appropriate Cap Rate.

Timing
Revenues and expenses are assumed to occur at the end of the year even though the rents may be received monthly. Most expenses are paid monthly. Some expenses such as property taxes and insurance may be paid yearly.

As an example, if the rent is $12,000 per month and received at the beginning of the month, the rent for the year is $144,000 and is assumed to be received at the end of the year when discounting to calculate the Internal Rate of Return (IRR) and Net Present Value (NPV)

Sign Convention

Revenues are cash inflows and are positive**.**

Expenses are cash outflows and are negative

Revenues & Expenses. Timing and sign convention summary

	Timing	Sign Convention
Revenues. Rent Year 1	End of year	Positive +$46,000 (Inflow)
Expenses. Property Taxes	End of year	Negative <26,000> (Outflow)

Sale and Selling Expenses

At the end of the analysis period, the property is assumed to be sold.

There are a variety of ways to calculate the value of the property at the end of the analysis period but the most common method is to use the Net Operating Income for the year following the sale and a Cap Rate.

We also have to estimate the real estate and legal fees and associated closing costs

Timing

The sale proceeds are assumed to occur at the end of the last year of the analysis period when discounting to calculate the Internal Rate of Return (IRR) and Net Present Value (NPV)

If the analysis period was 10 years the sale is assumed to occur at the end of the tenth year.

Selling expenses such as real estate and legal fees and associated closing costs are assumed to have occurred at the end of the analysis period for discounting purposes.

Sign Convention

The **"**Sale Price" is a positive number because the cash received from the sale is a cash inflow.

Selling expenses such as real estate and legal fees and other closing costs are negative because they are expenses or cash outflows.

Sale and Selling Expenses. Timing and sign convention summary

	Timing	Sign Convention
Sale of the building	End of year	Positive +$3,612,335 (Inflow)
Closing costs RE & legal fees	End of year	Negative <$11,000> (Outflow)

Timing and Sign Conventions. Summary

This table summarizes the traditional timing and sign conventions used in real estate investment analysis when carrying out discounted cash flow analysis and calculating the “Internal Rate of Return (IRR)” and “Net Present Value (NPV)”.

	Timing	Sign Convention
Purchase	Time period zero Beginning of year 1	Negative <$3,000,000> (Outflow)
Future capital expenditures Roof replacement. Year 6	Beginning of year	Negative <$250,000 per mos.> (Outflow)
Creation of the mortgage	Beginning of year	Positive +$1,800,000 (Inflow)
Repayment of the mortgage	End of year	Negative <$1,374,333> (Outflow)
Payments of Principal & Interest	End of year	Negative <$11,597 per mos.> (Outflow)
Revenues. Rent Unit A	End of year	Positive +$46,000 (Inflow)
Expenses. Utilities	End of year	Negative Utilities <$26,000> (Outflow)
Sale of the building	End of year	Positive +$3,612,335 (Inflow)
Closing Costs Selling & legal fees	End of year	Negative <$11,000> (Outflow)

Cap Rate versus Internal Rate of Return (IRR)

This table compares the difference between the Cap Rate and the Internal Rate of Return (IRR) in determining the value of an income property.

Cap Rate	Discounted Cash Flow Analysis & IRR
Only considers one year	Considers many years
Property is never sold	Property is sold at end of “Analysis Period”
Net Operating Income is constant Year 1 $120,000 Yr. 2 120,000 forever	Income & Expenses change every year
Ignores future capital expenditures Year 6. Replacing the roof for	Includes future capital expenditures
Excludes financing	Includes financing and refinancing
Simple and quick “Rule of Thumb”	Comprehensive analysis
Ignores the impact of taxes	Can be used for before & after tax analysis
How realistic?	More realistic. Much better assessment of the financial performance of the investment

Cap Rate vs. the Internal Rate of Return (IRR)

The Cap Rate and the IRR are two completely different financial measures or returns.

They cannot be compared. It's like comparing apples and oranges

Let's look at a very simple analysis using the "Cap Rate" method and the "Discounted Cash Flow Analysis" approach using the Internal Rate of Return (IRR).

Case Study.

Property Type. Income property
Analysis Period: 5 years
Asking Price: $1,000,000

Income & Expense Statement

Revenue	$125,000 (After vacancy allowance) increasing at 2.5% per year compounding
Expenses (40%)	50,000
Net Operating Income	75,000

Financing
Loan Amount: $600,000 Loan to Value Ratio is 60% Interest Rate: 6.00% Amortization Period: 25 years

Sale Price: The sale price at the end of the five years is based on the Net Operating income in year 6 using a 7.50% Cap Rate

Cap Rate Approach

$$\text{Cap Rate} = \frac{\text{Net Operating Income} \times 100}{\text{Price}} = \frac{75{,}000 \times 100}{1{,}000{,}000} = 7.50\%$$

Discounted Cash Flow Analysis approach. Net Cash Flow Report

November 20, 2012
Investor Pro
Video Cap vs. IRR Example

Net Cash Flow (Before Tax)
Cap Rate vs. IRR 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	$ (1,000,000)	$ 600,000	-	$ 28,610	-	$ (371,390)
Year 2 Jan-Year 2 Dec	-	-	-	30,485	-	30,485
Year 3 Jan-Year 3 Dec	-	-	-	32,407	-	32,407
Year 4 Jan-Year 4 Dec	-	-	-	34,377	-	34,377
Year 5 Jan-Year 5 Dec	-	-	(539,592)	36,396	1,131,408	628,212
					Total	$ 354,092

Financial Returns (Before Tax) with Financing

Internal Rate of Return (IRR)	15.08%
Net Present Value (NPV) at 13.00%	$ 33,706
Modified Internal Rate of Return (MIRR)	13.66%
Short Term Financing Rate (Before Tax)	7.500%
Short Term Reinvestment Rate (Before Tax)	1.500%

Results

The Cap Rate is 7.50% and the Internal Rate of Return is 15.08% which is closer to the true financial return.

The Internal Rate of Return (IRR) takes into account:

1. Financial leverage which generally increases the return but increases the risk
2. That rents increase each year
3. That the property is sold at the end of the Analysis Period
4. Take into account the Time Value of Money

The Cap Rate ignores these important factors and assumes the following:

1. Net Operating Income is constant and goes on forever

   Yr. 1 $75,000 Yr. 2 $75,000 etc.

2. The property is never sold
3. Ignores the time value of money

Cap Rate and the Internal Rate of Return (IRR) Case Study

Following is an analysis carried out to show the relationship between the Cap Rate on purchase and the Internal Rate of Return for a specific property using the following assumptions:

The analysis looked at holding the property for ten years then selling.

The sale price in ten years' time was calculated using the Net Operating Income (NOI) in the 11th year using the Cap Rate on purchase.

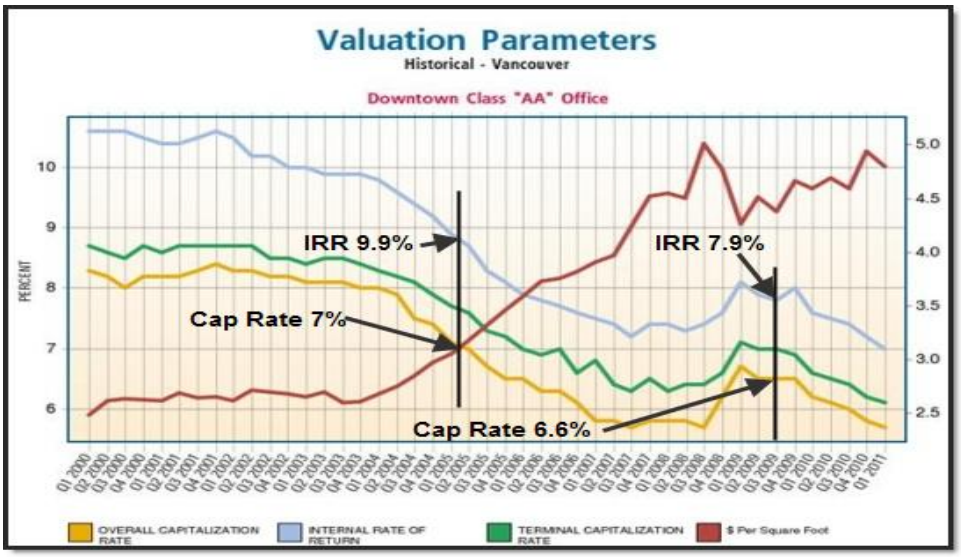
As an example, if the Cap Rate on purchase was 5.00%, the Cap Rate used to determine the sale price at the end of ten years was 5.00%.

Rental Apartment Building
Analysis Period: 10 years
Value in 10 year time is based on the NOI in the 11th year using the purchase Cap Rate
Rents. Increase at 3.00% per Yr compounding
Expenses. 43% Operating Expense Ratio
Debt Service Ratio maintained at 1.25
Cap Rate & IRR Analysis.

Results. Cap Rate versus the Internal Rate of Return

Example. If the Cap Rate on Purchase was 6.00% the Internal Rate of Return (IRR) is 10.29%

Cap Rate	3.50%	5.00%	6.00%	7.00%
Purchase Price	$15,197,143	$10,638,000	$8,640,000	$7,328,571
Vacancy Allowance	1.50%	3.00%	4.00%	5.00%
Financing	$5,152,000	$5,069,568	$5,000,000	$4,758,750
Debt Service Ratio	1.25	1.25	1.25	1.25
Loan to Value Ratio Equity	33% 67%	48% 52%	58% 42%	75% 25%
Sale Price in 10 years	$20,423,744	$14,078,906	$11,611,469	$9,849,014
Annual appreciation to provide a 9.00% IRR	5.9%	3.9%	2.1%	0.13%
Internal Rate of Return	5.67%	7.70%	10.29%	13.45%
Investment Risk	Low Prime	Medium	Medium	Higher



The relation between the Cap Rate and the Internal Rate of Return (IRR)
Vancouver Downtown office market Source: Altus Group. In Depth report June 2011

Conclusion: Relationship between the Cap Rate & the Internal Rate of Return (IRR)

The only way to connect a Cap Rate and the Internal Rate of Return is by analyzing a specific income property. We can, however, make the following observations:

1. The Internal Rate of Return is generally higher than the Cap Rate under normal circumstances

2. For a typical Cap Rate of 7% to 8%, the Internal Rate of Return before tax will be around 12% to 14%

3. The lower the Cap Rate the lower the Internal Rate of Return (IRR) but also the lower the risk

4. A good rule of thumb for the investor's "Desired Return (IRR)" or "Discount Rate" is 12% to 14% before tax for Cap Rates around 7.5%

Caution
These are very general observations and may not always apply. Many factors influence the Internal Rate of Return and the investment risk such as:

1. The financial leverage. Increasing the financings lowers the equity and increases the Internal rate of return but increases the risk which the example shows.

Financial Returns (Before Tax) with Financing	Financial Returns (Before Tax) without Financing
Internal Rate of Return (IRR) 12.04%	Internal Rate of Return (IRR) 8.94%

2. The quality of the tenants. The poorer the quality of the tenant the higher the risk of defaulting on the rent or moving out prematurely
3. Whether a major tenant will renew their lease when it expires
4. Future major expenditures such as replacing the roof, a boiler or the HVAC system

All of these will influence the Internal Rate of Return and the relationship with the Cap Rate

When does the Cap Rate equal the Internal Rate of Return?

The Cap Rate and the Internal Rate of Return are nearly the same when:

1. The income is constant and goes on for many years. At least 75 years
2. There is no residual value such as the sale of the property or asset

Case Study

A farmer has leased a section of his farm to a wind farm operator for $100,000 for 40 years.

An investor is interested in buying the remaining income stream for $1,200,000. There are 25 years remaining on the lease.

Question: What is the Cap Rate and the Internal Rate of Return?

$$\text{Cap Rate} = \frac{\$100{,}000 \times 100}{\$1{,}200{,}000} = 8.33\%$$

Internal Rate of Return

Investment <$1,200,000
Annual Cash Flow $100,000 per year for 25 years

Internal Rate of Return: 6.678%

The following table shows the Internal Rate of Return for different numbers of years

Number of Years At $100,000 per year	Internal Rate of Return	Cap Rate	% Difference
25	**6.678%**	**8.33%**	**25%**
30	**7.337%**	**8.33%**	**14%**
40	**7.941%**	**8.33%**	**4.89%**
50	**8.169%**	**8.33%**	**1.93%**
75	**8.312%**	**8.33%**	**0.22%**
100	**8.33%**	**8.33%**	**0.00%**

Conclusion
For the Cap Rate and the Internal Rate of Return to be the same requires:

1. A constant annual income. The example uses $100,000 per year
2. There is no residual or reversionary value at the end of the time period
3. Long the time period. Fifty years

Cap Rate versus Internal Rate of Return (IRR). Summary

The Cap Rate is a very simplistic, quick approach to valuing an income property and is based on the following assumptions:

1. The Net Operating Income is constant and goes on forever
2. The property is never sold

The Cap Rate approach ignores the time value of money and that cash flows change over time.

In contrast, the discounted cash flow approach which generates the Internal Rate of Return (IRR) takes into account the changing cash flows resulting from buying, financing, operating and selling the property over the ownership period.

The discounted cash flow analysis is a much more comprehensive and rigorous approach than the Cap Rate and is the best approach for analyzing complex real estate investments.

Relationship between the Cap Rate and the Internal Rate of Return (IRR)

The only way to connect the Cap Rate and the Internal Rate of Return (IRR) is to explore the relationship between the Cap Rate and the Internal Rate of Return (IRR) is by carrying out discounted cash flow analysis on a specific property and then varying the purchase Cap Rate to see the impact on the Internal Rate of Return (IRR)

Some general observations:

1. The Internal Rate of Return is generally higher than the Cap Rate
2. The lower the Cap Rate the lower the Internal Rate of Return (IRR) but also the lower the risk
3. On a typical investment where the Cap Rate is around 7.5% the Internal Rate of Return (IRR) is around 12% to 14%

When does the Cap Rate equal the Internal Rate of Return (IRR)?
The Cap Rate and the Internal Rate of Return (IRR) are the same if the following conditions exist:

1. A constant annual income. Example $100,000 per year for 50 years
2. There is no residual or reversionary value at the end of the time period
3. Long the time period is involved. A minimum of 50 years

What does the term "Return" mean?

There are various terms used to describe a "Return on investment"

If an investor asks what is the:

Return?
Yield?
Return on Investment?
ROI?
Bottom line?

…….you need to ask the investor to define what they mean by:

"Return", "Yield", "Return on Investment", "ROI" or the "Bottom Line"

The following are all financial returns on investment:

$$\text{Cap Rate} = \frac{\text{Net Operating Income} \times 100}{\text{Price}}$$

Return on Equity. Also called "Cash on Cash" the "Equity Dividend Rate"

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

Internal Rate of Return (IRR)

Modified Internal Rate of Return (MIRR)
Also called the "Financial Management Rate of Return" or "FMRR"

Investor's Discount Rate. The discount rate is equivalent to the Internal Rate of Return

Sometimes investors develop their own method of calculating a financial return that works for them.

As an example, an investor has developed her own method for calculating the "Return on Investment" and uses the following formulae:

$$\text{Return on Investment (ROI)} = \frac{\text{Avg. yearly cash flow} + (\text{Sale Price} - \text{Purchase Price})/\text{No. of Yrs}}{\text{Initial Equity}}$$

Real Estate Taxation. Overview

The table shows the different kinds of real estate taxes and the difference between the USA and Canadian calculations. Both countries have:

Taxes on yearly operating profits
Mortgage interest is a deductible expense
Allow the depreciation of the improves but not the land
Capital gain tax
Recaptured depreciation tax which occurs if too much depreciation has been claimed

The major difference is how the taxes are calculated.

	USA	Canada
Interest is expensed Depreciation expensed	Yes Yes	Yes. Yes. Called CCA
Depreciation First year First year rules	Real Property. Mid month Other assets. Mid year Have to claim depreciation	50% of the asset value Don't have to claim depreciation
Tax sheltering Claiming losses against other income	Yes. Active Investors Passive investors Loss transfer limitation rules apply	Generally no
Capital Gain	Taxed at 15%	50% of gain added to income Taxed at marginal tax rate
Recaptured Depreciation	Taxed at 25%	Recapture added to income Taxed at marginal tax rate

Capital Gains Tax

A capital gain is the difference between what you paid for an investment and what received when you sold that investment.

You have a capital gain when you sell or are considered to have sold, a capital property for more than the total of its cost basis, and the outlays and expenses incurred to sell the property.

Cost Basis

The “Cost Basis” is:

1. Purchase price plus acquisition costs such a legal and appraisal fees, transfer costs etc.
2. Plus “Capital Expenditures” such as replacing the roof, elevator, HVAC system etc.

Amount Realized or Proceeds of Sale on Disposition

The Sale Price less selling expenses such as legal, real estate fees, advertising costs, etc.

Capital Gain

Capital Gain = Amount Realized on Sale – Cost Basis

Capital Gains Tax

USA Generally 15% but different rates apply to low income earners

Canada. 50% of the gain is added to the individual or corporate income and taxed at the investor’s marginal tax rate

Depreciation Claims

Assets, such as real estate improvements have a useful life longer than one year and are expensed over time thoroughly yearly depreciation claims. The impact of the yearly depreciation claim is to increase the after tax cash flow because depreciation is a “non-cash “expense.

Each year the investor claims depreciation following the rules established by the tax department on the capital assets to reduce the taxable income as shown below and claims the depreciation as an operating expense. Land cannot be depreciated for tax purposes.

Note: In Canada depreciation for tax purposes is called “Capital Cost Allowance or CCA”

Operating Cash Flow Yearly
Parklane Place
Mixed User Building

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
CASH FLOW BEFORE TAX						
Potential Gross Income	**451,620**	**464,830**	**478,499**	**499,035**	**513,786**	**528,752**
Less: Vacancy & Credit Loss Allow.	10,201	10,548	10,909	11,263	11,651	12,043
Effective Gross Income	**441,419**	**454,282**	**467,590**	**487,772**	**502,135**	**516,709**
Operating Expenses	222,205	232,022	242,310	252,499	262,667	273,234
Net Operating Income	**219,214**	**222,260**	**225,280**	**235,273**	**239,468**	**243,475**
Less: Principal Payments	32,041	34,017	36,115	38,343	40,707	43,218
Interest payments	107,128	105,152	103,054	100,827	98,462	95,951
CASH FLOW BEFORE TAX	**80,045**	**83,091**	**86,111**	**96,104**	**100,298**	**104,306**
Less: Income Tax at 35.00%	14,844	15,533	17,325	21,602	23,898	17,429
CASH FLOW AFTER TAX	**65,200**	**67,557**	**68,786**	**74,502**	**76,401**	**86,877**
INCOME TAX CALCULATIONS						
Net Operating Income	219,214	222,260	225,280	235,273	239,468	243,475
Less: Interest Payments	107,128	105,152	103,054	100,827	98,462	95,951
Depreciation & Amortization	69,673	72,727	72,727	72,727	72,727	97,727
Taxable Income	**42,413**	**44,381**	**49,499**	**61,720**	**68,279**	**49,797**
Income Tax at 35.00%	**14,844**	**15,533**	**17,325**	**21,602**	**23,898**	**17,429**

Depreciation claim reduces the taxable income

Amortization

Refers to spreading an intangible asset's cost over that asset's useful life.

For example, the cost of acquiring a lease by the landlord such as the leasing fee or cash payments to the tenant for leasehold improvements would likely be amortized over the term of the lease depending on the applicable tax rules.

Example: To acquire a lease with a five year term the landlord pays the leasing agent $40,000 and gives the tenant $80,000 cash for leasehold improvements. The total cost of acquiring the lease is $120,000 which would be amortized over the 5 year term at $120,000/5 at $24,000 per year. From the tenant’s perspective, the $80,000 cash inducement is treated as income.

Recaptured Depreciation Tax

When the property is sold, if the value of the improvement on sale is greater than the “Depreciated Balance” there will be recaptured depreciation tax.

Allocation of the purchase price between and improvements

When the property is sold, the buyer and seller will negotiate the allocation of the sale price between:

Land
Improvements

The Seller wants the value of the improvements to below to minimize or avoid depreciation tax

The buyer wants the value of the improvement to be high to maximize the yearly depreciation claims claim and minimize yearly income taxes

Recaptured depreciation on sale. USA Example

Capital Gain: Gain is taxed at 15.00%

Recaptured Depreciation: Taxed at 25.00%

Cash Flowfrom Sale (After Tax)

Net Sale Price				4,936,162
Less: Capital Gains Tax				
Net Sale Price	4,936,162			
Less Cost Basis	3,820,000			
Capital Gains	1,116,162	x	15.00%	167,424
Less: Recaptured Depreciation Tax				
Tax Value of Improvements on Sale	2,820,000			
Less Adjusted Basis	1,830,431			
Recaptured Depreciation	989,569	x	25.00%	247,392
Net Proceeds (After Tax)				4,521,345
Less: Mortgage Repayment				1,594,349
Cash Flow from Sale (After Tax)				**2,926,996**

Recaptured depreciation on sale. Canadian Example

Capital Gain: 50% of the Gain is added to income & taxed at the Investor's marginal tax rate

Recaptured Depreciation: Added to income and taxed at the Investor's marginal tax rate

Cash Flowfrom Sale (After Tax)

Net Sale Price					4,936,162
Less: Capital Gains Tax					
Net Sale Price		4,936,162			
Less Cost Basis		3,840,000			
	Capital Gains	1,096,162	x 37.00%	x 50.00%	202,790
Less: Recaptured Depreciation Tax					
Tax Value of Improvements on Sale		2,840,000			
Less Undepreciated Balance		1,940,758			
	Recaptured Depreciation	899,242	x 37.00%		332,720
Net Proceeds (After Tax)					4,400,652
Less: Mortgage Repayment					1,589,449
Cash Flow from Sale (After Tax)					**2,811,203**

Marginal Tax Rate

Calculating Recaptured Depreciation

The following table shows how the recaptured depreciation tax depends on the allocation of the purchase price between the “Land” and the “Improvements”. Recaptured depreciation tax can range from zero to a full recapture where all the depreciation claimed over the period of ownership is subject to recaptured depreciation tax.

PURCHASE PRICE		$2,000,000		
	Land	600000		
	Improvements	1,400,000		
DURING OWNERSHIP			Value of Improvements	$1,400,000
			Less Depreciation Claimed	500,000
			Adjusted Basis (Undepreciated Balance)	$900,000
ON SALE				
	Sale Price	$3,000,000	$3,000,000	$3,000,000
Allocations	Land	1,500,000	2,000,000	2,100,000
	Improvements	1,500,000	1,000,000	900,000
		$3,000,000	$3,000,000	$3,000,000
RECAPTURED DEPRECIATION				
	Improvements	1,400,000	1,000,000	900,000
	Undepreciated Balance	900,000	900,000	900,000
	Recaptured Depreciation	**500,000**	**100,000**	**0**
		Full Recapture	*Partial Recapture*	*No Recapture*
Note: The recaptured depreciation can never be more than the depreciation claimed				
RECAPTURED DEPRECIATION TAX				
USA Recapture Tax at 25%		$125,000	$25,000	$0
CND Recapture Tax at 35%		175,000	35,000	0

No recaptured depreciation tax
If the value of the improvements on sale is equal to (which means the improvements have been perfectly depreciated) or less than the undepreciated balance or adjusted basis the recaptured depreciation tax is zero.

Full recapture
A full recapture occurs when the value of the improvements on sale is greater than on acquisition which means the improvements have appreciated not depreciated in value. In this case, all the depreciation claimed is subject to recaptured depreciation tax

Note that recaptured depreciation cannot be more than the depreciation claimed.

Partial recapture
Occurs when the value of the improvements on sale is less than on acquisition but greater than the undepreciated balance or adjusted cost basis. The difference between the value of the improvement on sales and the undepreciated value or adjusted cost basis is subject to recaptured depreciation tax

Capital Gain. Appreciation is taxed as a capital gain. The increase in value of $1,000,000 is the purchase price of $3,000,000 minus the acquisition cost of $2,000,000 is taxed as a capital gain

Properties that may be hard to sell because of tax implications

Characteristics:

1. Owned for a long period of time
2. Gone up a lot in value
3. Heavily depreciated

and there is a large mortgage on the property.

When the owner sells:

Large Capital Gain. USA 15% of the gain is added to income
Canada 50% of the gain is taxed at the marginal tax rate

Large Recaptured Depreciation Tax.

USA. Recaptured Depreciation is taxed at 25%

Canada. Recaptured Depreciation is added to income and taxed at the marginal tax rate

Large real estate fee and closing costs

…..and a large mortgage to pay off

The result. There is little money left from the sale

Seller Financing. Tax issues

Be careful about having the owner carrying financing without first checking with a tax accountant.

If the proceeds from the sale, after paying off the mortgage is small, there may not be enough money for the seller to pay the Capital Gains Tax and Recaptured Depreciation Tax as well as the real estate and legal fees.

Properties that may be hard to sell because of mortgage restrictions
Sometimes the mortgages registered on the property have restrictions that make it difficult to sell the property such as:

1. The mortgage cannot be paid off until the end of the term
2. The mortgage can be paid off but the penalty is very high making it difficult to pay off the mortgage
3. The first mortgage may not allow a second mortgage to be placed on the property preventing the seller from offering a second mortgage to reduce the equity needed by the buyer

Example
A seller and a buyer have agreed upon a price of $4,850,000 for a prime mixed use building but unfortunately, the mortgage makes it difficult to complete the deal.

The details of the existing first mortgage are:

Loan Amount $2,750,000 Outstanding Balance: $2,319,000
Interest Rate: 6.50%
Monthly Payment: $17,000
Prepayment Period: The mortgage can't be paid off for another 4 years
Restriction: A second mortgage cannot be placed on the property

The buyer can arrange a new first mortgage for 4.50% for $3,500,000 with a Loan to Value Ratio of 72%

Issues facing the buyer are:

Prepayment	Can't pay off the first mortgage for 4 years
Equity	**48% or $2,531,000 versus 28% or $1,350,000 for the new mortgage**
Interest Rate	**6.50% versus 4.50% current market interest rate**
Future Rate	**Will the interest rate be higher than 4.50% in 4 years' time?**
Leverage	**The higher equity reduces the financial leverage**
Return (IRR)	**Unless the price is dropped significantly the IRR will be much lower**
2nd Mortgage	**Not allowed. Can't set up a 2nd mortgage with the seller**

Unless the seller is willing to drop the price significantly the first mortgage restrictions will prevent the sale of the property.

Introductory Case Study. Real Estate Investment Analysis

Showing the importance of financial leverage

The financial measures used to determine the loan amounts are:

1. Debt Service Ratio or Debt Coverage Ratio
2. Loan to Value Ratio. Sets the maximum loan amount

The lender calculates the loan amount using both measures and selects the method that yields the lowest loan amount. These lending criteria allow you to determine the potential for financing now and in the future.

Potential for financing now or in the future

Debt Service Ratio or Debt Coverage Ratio

$$= \frac{\text{Net Operating Income}}{\text{Debt Service}} = \frac{\$240{,}000 \text{ per yr.}}{\$180{,}000} = 1.33 \text{ Typical: } 1{,}25$$

Note: *Debt Service is the annual principal and interest payment*

Loan to Value Ratio. Typical range 65% to 75%

Another useful measure for determining the financing now and in the future is the Default Ratio. Once the default ratio nears 85% there is little room to increase the first mortgage.

Default Ratio (Breakeven Point)

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

$$= \frac{(\$230{,}000 + 160{,}000) \times 100}{\$534{,}000} = 73\%$$

Risk assessment.

How risky is the investment?

The Default Ratio (Breakeven Point) and the Debt Service or Coverage Ratioare used to measure risk.

The example below shows the ratios for a moderate and high risk investment

	Moderate Risk	High Risk
Default Ratio (Breakeven Point)	72%	91%
Debt Service Ratio	1.31	1.07

The Impact of Financial Leverage. Case study

Simple example illustrating financial leverage
An investor is considering buying a home to rent out and is considering two options:

1) Buy one home with cash for $300,000 and rent or
2) Buying 4 homes using 75% Loan to Value Ratio and rent

If the homes go up in value by 10%. The profit is:

1) One home bought with cash. Profit is $300,000 x 10% = $30,000
2) Buy 4 homes using 75% LTV Ratio. Profit is $300,000 x 10% x 4 = $120,000

Using financial leverage significantly increase the profit or return on investment

Case study. The impact of financial leverage
Office building
Capital Plaza
8,400 Sq. Ft of rentable space

Funds available to invest: $3,100,000

The case study explores the impact of the financing on the return on investment (Internal Rate of Return) using:

1. Zero financing
2. 45% LTV $1,395,000 25 years 4.50%
3. 75% LTV $2,350,000 25 years 4.50%

Zero Financing

Without financing the Internal Rate of Return (IRR) before tax is 8.29%

Net Cash Flow (Before Tax)
Capital Plaza
Office 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	$ (3,100,000)	-	-	$ 197,449	-	$ (2,902,551)
Year 2 Jan-Year 2 Dec	-	-	-	200,329	-	200,329
Year 3 Jan-Year 3 Dec	-	No financing	-	205,115	-	205,115
Year 4 Jan-Year 4 Dec	-	-	-	205,467	-	205,467
Year 5 Jan-Year 5 Dec	-	-	-	205,904	-	205,904
Year 6 Jan-Year 6 Dec	-	-	-	206,278	-	206,278
Year 7 Jan-Year 7 Dec	-	-	-	230,679	-	230,679
Year 8 Jan-Year 8 Dec	-	-	-	250,958	-	250,958
Year 9 Jan-Year 9 Dec	-	-	-	251,801	-	251,801
Year 10 Jan-Year 10 Dec	-	-	-	252,742	3,699,165	3,951,907
					Total	$ 2,805,888

Financial Returns (Before Tax) without Financing

Internal Rate of Return (IRR)	8.29%
Net Present Value (NPV) at 13.00%	($ 848,912)

Without financing

With Financing: 45% LTV $1,395,000 25 years 4.50% interest rate

Adding financing using a 45% loan to value ratio, 25 year amortization, and 4.50% interest rate changes the return from 8.29% without financing to 10.65% which is a 29% increase in the return.

Can the financing be increased?
In year 1 the Loan to Value Ratio is around 44%. The ceiling is generally around 75%
The Debt Service Ratio is 2.12. The Ratio can go down to 1.25 or lower.

Both measures suggest that the first mortgage can be increased.

How risky is the investment?
The two measures of risk are:

Debt Coverage Ratio 2.12 The Ratio can go down to 1.25 or lower
Default Ratio or the Breakeven Point 60.22%. Generally shouldn't exceed 85%

The Debt Service Ratio and the Default Ratio suggest low risk.

Financial Measures Summary
Capital Plaza
Office Building Example

December 17, 2013
Investor Pro
Video Fin Leverage 45% LTV

Financial Returns.

Cap Rate using the investment in Year 1 of $3,100,000 — 6.37%

		With Financing	Without Financing
Internal Rate of Return (IRR)	Before Tax	10.65%	8.29%
Net Present Value (NPV)	Before Tax	($257,395) at 13.00%	($848,912) at 13.00%
Modified Internal Rate of Return (MIRR)	Before Tax	9.17%	7.10%
Short Term Financing Rate (Before Tax)		8.00%	8.00%
Short Term Reinvestment Rate (Before Tax)		2.50%	2.50%

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)	Overall Operating Expense Ratio (Using PGI)
Year 1	44.36%	43.38%	2.12	60.22%	27.13%
Year 2	43.32%	41.36%	2.15	59.95%	27.52%
Year 3	43.25%	40.24%	2.20	59.32%	27.75%
Year 4	43.16%	39.06%	2.21	59.56%	28.28%
Year 5	43.08%	37.85%	2.21	59.79%	28.81%
Year 6	38.52%	32.78%	2.22	60.04%	29.35%
Year 7	35.41%	29.10%	2.48	55.94%	27.93%
Year 8	35.29%	27.93%	2.70	53.11%	27.04%
Year 9	35.16%	26.71%	2.71	53.34%	27.53%
Year 10	35.01%	25.44%	2.72	53.56%	28.02%

Can the financing be increased?

Loan to Value Ratio 44%
Debt Coverage Ratio: 2.12
YES

How Risky?
Debt Coverage Ratio 2.12
Default Ratio 60.22%
LOW RISK

With Financing: 75% LTV $2,350,000,000 25 years 4.50%

Adding financing using a 75% loan to value ratio, 25 year amortization, and 4.50% interest rate changes the return from 8.29% without financing to 15.24% which is an 84% increase.

Can the financing be increased?
In year 1 the Loan to Value Ratio is around 74%. The ceiling is generally around 75%
The Debt Coverage Ratio is 1.27. The Ratio can go down to 1.25 or lower.

Both measures suggest that there is little room to increase the first mortgage.

How risky is the investment?
The two measures of risk are:

Debt Service Ratio 1.27 The Ratio can go down to 1.25 or lower
Default Ratio or the Breakeven Point 82.28%. Generally shouldn't exceed 85%

The Debt Service Ratio and the Default Ratio suggest moderate to higher risk

Financial Measures Summary
Capital Plaza
Office Building Example

Financial Returns.

Cap Rate using the investment in Year 1 of $3,100,000 6.37%

		With Financing	Without Financing
Internal Rate of Return (IRR)	Before Tax	15.24%	8.29%
Net Present Value (NPV)	Before Tax	$ 136,950 at 13.00%	($ 848,912) at 13.00%
Modified Internal Rate of Return (MIRR)	Before Tax	13.41%	7.10%
Short Term Financing Rate (Before Tax)		8.00%	8.00%
Short Term Reinvestment Rate (Before Tax)		2.50%	2.50%

Financial Operating Ratios

	Total Loan to Value Ratio (At End of Year) using				
Year	Original Loan Amount	Outstanding Loan Balance	Debt Coverage Ratio	Default Ratio (Breakeven) (Using PGI)	Overall Operating Expense Ratio (Using PGI)
Year 1	73.93%	72.29%	1.27	82.28%	27.13%
Year 2	72.20%	68.93%	1.29	81.58%	27.52%
Year 3	72.08%	67.07%	1.32	80.37%	27.75%
Year 4	71.93%	65.10%	1.32	80.42%	28.28%
Year 5	71.80%	63.08%	1.33	80.45%	28.81%
Year 6	64.20%	54.63%	1.33	80.50%	29.35%
Year 7	59.01%	48.50%	1.49	74.61%	27.93%
Year 8	58.82%	46.55%	1.62	70.49%	27.04%
Year 9	58.60%	44.52%	1.62	70.54%	27.53%
Year 10	58.36%	42.40%	1.63	70.58%	28.02%

Can the financing be increased?

Loan to Value Ratio 74%
Debt Coverage Ratio: 1.27
PROBABLY NOT

How Risky?

Debt Coverage Ratio 1.27
Default Ratio 82.28%
MODERATE TO HIGH RISK

Summary. The impact of financial leverage

With no financing, the Internal Rate of Return (IRR) is 8.29%. If a mortgage is added using a 45% Loan to Value Ratio the Internal Rate of Return (IRR) changes from 8.29% without financing to 10.65% which is an increase of 29%.

If a mortgage is added using a 75% Loan to Value Ratio the Internal Rate of Return (IRR) changes from 8.29% without financing to 15.24% which is an increase of 84%.

The use of financial leverage generally increases the return (IRR) but it also increases the investment risk.

In this example, the Debt Coverage Ratio has gone from 2.12 with a 45% Loan to Value Ratio down to 1.27 using a 75% Loan to Value Ratio indicating increased investment risk.

The Default Ratio (Breakeven Point) has gone from 60.22% with a 45% Loan to Value Ratio up to 82.28% using a 75% Loan to Value Ratio.

A healthy balance is needed between the investment return and associated financing and risk.

Mortgage	Loan to Value Ratio	Debt Coverage Ratio	Default Ratio (Breakeven Point)	Internal Rate of Return (IRR)	% Increase
$0	0%	-	-	8.29%	
$1,395,000	45%	2.12	60.22%	10.65%	29%
$2,350,000	75%	1.27	82.28%	15.24%	84%

Accumulated Wealth

The above example illustrates how financial leverage increases the return on investment (IRR) but financial leverage also allows the investor to buy a much larger building and accumulate more wealth.

The funds that are available to invest are: $3,100,000.

Using a 75% Loan to Value Ratio allows the investor to buy a property that is **four times larger** than one purchased using an investment of $3,100,000 and no financing.

Using a 75% Loan to Value Ratio and buying the largest building possible the wealth accumulated over the ten year period is $7,581,239 compared with $2,805,888 for the all cash purchase.

Project Comparison Report (Before Tax)

Net Cash Flow(Before Tax)

		All cash purchase	Purchased using 75% LTV Ratio
Year	0	(3,100,000)	(3,100,000)
	1	197,449	169,488
	2	200,329	181,030
	3	205,115	200,151
	4	205,467	201,584
	5	205,904	203,269
	6	206,278	204,839
	7	230,679	302,372
	8	250,958	383,498
	9	251,801	386,897
	10	3,951,907	8,448,112
	11		
	Total	2,805,888	7,581,239
Before Tax Financial Return			
With Financing			
Internal Rate of Return (IRR)		8.29%	15.26%

Accumulated wealth

Conclusion

The use of financial leverage:

1. Increases the Return on Investment (IRR) from 8.29% to 15.26%
2. Allows the investor to buy a much larger property
   $12,400,000 versus $3,100,000 for the all cash purchase
3. Accumulate greater wealth over the holding period.
   $8,851,239 versus $1,890,000 for the all cash purchase
4. Increases the investment risk

If you own an income property always look for the potential to refinance

Sometimes the best strategy if you own a property there is to refinance the first mortgage and take the funds from refinancing and buy another property.

Appendices

Information Sources and web sites

www.investitpro.com Visit the Online Learning Center for educational resources, articles, etc.
www.investitacademy.com Commercial real estate education plus free resources and videos.

The following organizations provide information on income and operating expenses.

Institute of Real Estate Management (IREM)
www.irem.org
Tel: (312) 329-6000
Income/Expense Analysis. Office Buildings
Income/Expense Analysis. Shopping Centers
Income/Expense Analysis. Conventional Apartments
Income/Expense Analysis. Federally Assisted Apartments
Income/Expense Analysis. Condominiums, Co-ops & PUDs

Building Owners and Managers Assoc. (BOMA)
www.boma.orgTel: 1-800-426-6292 Office building expenses. Experience Exchange Report

International Council of Shopping Centers (ICSC) www.icsc.org
A variety of reports on sales, operating expenses, and the percentage by type of shopping center, location, etc.

National Apartment Owners Association www.naahq.org

Appraisal Institute **www.appraisalinstitute.org**
Excellent books on analyzing many kinds of properties including Hotel and Motels, Mobile Home & RV Parks, Apartment Buildings, Nursing Homes, Land Subdivisions, Golf Courses, Marinas, Convenience Stores & Retail Facilities, Shopping Centers, Religious Facilities, Rural Properties, Industrial Properties, etc.

www.loopnet.com USA & Canada

www.costar.com www.REISReport.com http://www.thenewsfunnel.com/
Excellent free newsletters and blogs on commercial real estate markets

www.iciworld.com Canada

CCIM Institute. www.CCIM.com or CCIM.NET CCIM.STDB (Site to do business)

Excellent site for USA and Canadian construction costs:
www.rsmeans.com

SnagIt Screen Capture program www.techsmith.com
Used to produce the screen captures used in this manual. Great productivity tool.