

Chapter 11

Investment Analysis and Taxation of Income Properties

Motivation for Investing

Motivations for Investing in Income Properties

- Rate of return
- Price appreciation
- Diversification
- Tax benefits



Real Estate Investment Analysis



- Investment Strategy
 - It's not location, location, location...
 - Investment Philosophy
 - Investment Objectives
 - Investment Policies

Investment Strategies

- Investing in Core Properties
- Investing in Core Properties with a “Value Add” Strategy
- Property Sector Investing
- Contrarian Investing
- Market Timing
- Growth Investing
- Value Investing

Investment Strategies

- Strategy as to Size of Property
- Strategy as to Tenants
- Arbitrage Investing
- Turnaround/Special Situations
- Opportunistic Investing
- Investing in “Trophy” or “Blue Chip” Properties
- Development

Market Characteristics

- Real Estate Cycle
 - Large Market in number and size of properties
 - Competitive
 - Fragmented Ownership
 - Overdevelopment Potential
 - The cycle differs for different property types.

Market Analysis

- Evaluation of supply and demand for a type of property
- Absorption
- Supply of Space
- Market Rents
- Forecasting Supply, Demand, Market Rents, and Occupancy

Investment Decisions

- Forecast cash flows from operations
- Forecast cash flow from sale
- Determine present value of expected future cash flows
- Apply an investment decision criterion

NOI Calculation

<u>Income / Expense Item</u>
Potential Gross Income (PGI)
- Vacancy and collection losses
+ Other Miscellaneous Income
= Effective Gross Income (EGI)
- Operating Expenses (OpEx)
= Net Operating Income (NOI)

What about non-recurring expenses?

Example: NOI Income

<u>Item</u>	<u>Total</u>
Potential Gross Income	\$180,000
- Vacancy and Collection Losses	\$18,000
+ Other Miscellaneous Income	\$0
= Effective Gross Income	\$162,000
- Operating Expenses	\$72,900
= Net Operating Income	\$89,100

Forecasted Cash Flows From NOI

<u>Item</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
PGI	\$180,000	\$185,400	\$190,962	\$196,691	\$202,592
- V&C	<u>\$18,000</u>	<u>\$18,540</u>	<u>\$19,096</u>	<u>\$19,669</u>	<u>\$20,259</u>
= EGI	\$162,000	\$166,860	\$171,866	\$177,022	\$182,333
- OE	<u>\$72,900</u>	<u>\$75,087</u>	<u>\$77,340</u>	<u>\$79,660</u>	<u>\$82,050</u>
= NOI	\$89,100	\$91,773	\$94,526	\$97,362	\$100,283

Forecasted Cash Proceeds From Sale

<u>Item</u>	<u>Year 5</u>
Expected Sales Price	\$1,026,000
<u>- Selling Expenses</u>	<u>\$51,300</u>
= Net Sales Proceeds	\$974,700

Present Value Calculation

<u>Year</u>	<u>Investment</u>	<u>NOI</u>	<u>Net Sales Proceeds</u>	<u>PV@12%</u>
0	\$ 0			\$ 0
1		\$89,100		\$79,554
2		\$91,773		\$73,161
3		\$94,526		\$67,282
4		\$97,362		\$61,875
5		\$100,283	\$974,700	<u>\$605,974</u>
			PV=	\$891,846

Investment Analysis

- Net Present Value
 - A way to solve for the initial price that an investor may pay given a specified discount rate.
 - Discounted value of the cash flows.
 - The discount rate is the rate of return that an investor will require in order to make this investment.
 - If we include the initial equity investment in this calculation, we can solve for the difference and see how much more or less the investor may pay and still receive a rate that is equivalent to their discount rate.

Net Present Value (NPV)

- The net present value is the present value of a project's cash inflows, minus the present value of the cash outflows.
- The cash flows are discounted at the investor's required rate of return – in the example, 12 percent.

NPV Calculation

<u>YR</u>	<u>Invest</u>	<u>NOI</u>	<u>NSP</u>	<u>PV@12%</u>
0	-\$885,000			-\$885,000
1		\$89,100		\$79,554
2		\$91,773		\$73,161
3		\$94,526		\$67,282
4		\$97,362		\$61,875
5		\$100,283	\$974,700	<u>\$605,974</u>
			NPV =	\$ 6,846
			IRR =	12.2%

NPV Decision Criteria

- IF $NPV > 0$, the project exceeds the investor's required rate of return.
- IF $NPV < 0$, the project does not meet the investor's required rate of return.
- IF $NPV = 0$, the project's expected return equals the investor's required rate of return.

Internal Rate of Return (IRR)

- The internal rate of return is the discount rate at which $NPV=0$, the rate of return at which the present value of the cash inflows equals the present value of the cash outflows.

Investment Analysis

- Internal Rate of Return (IRR)
 - The discount rate at which the net present value of the cash flows is equal to 0.
 - If $IRR \geq r$; accept Project
 - If $IRR < r$; reject Project
 - Where r is the discount rate, or more colloquially, the “hurdle rate”

NPV & IRR

- **NPV:** cash flows assumed reinvested at discount rate
 - Generally preferred to IRR for making decisions
- **IRR:** cash flows assumed reinvested at the IRR rate
 - May provide inferior wealth maximizing ranking of alternative opportunities to the NPV
 - Multiple solutions possible
 - Easily compared to other investments and widely used

Debt Financing

- Equity Dividend = NOI-DS
 - Sometimes called before tax cash flow
- Equity Dividend Rate = Equity Dividend/Initial Equity Investment
 - Sometimes referred to as “unleveraged cash on cash” rate.
- What about calculating this in later years?

Before-Tax Cash Flow

- Debt Coverage Ratio (DCR) = NOI/DS
 - The DCR is a vital ratio for lenders.
 - If the DCR is less than 1, the borrower will not be able to service the debt.
 - Generally, lenders want a DCR greater than 1 so the borrower has a cushion and can repay
- Before-Tax Cash Flow from the Property Sale (BTCF_s):
 - $\text{BTCF}_s = \text{Sales Price} - \text{Mortgage Balance}$

Investment Criteria

Profitability Ratios

- Capitalization Rate
= $\text{NOI} / \text{Acquisition Price}$
- Mortgage Constant
= $\text{MC} = \text{DS} / \text{Initial Loan Amount}$

Investment Criteria

Financial Ratios

- Operating Expense Ratio
 - **OER** = Operating Expenses / EGI
- Loan-to-Value Ratio
 - **LTV** = Mortgage Balance / Property Value
- Debt Coverage Ratio
 - **DCR** = Net Operating Income / Debt Service

Four Classes of Real Property

- Real Estate held as a “**personal residence**”
- Real Estate held for sale to others – “**dealer**” **property**”
- Real Estate held for use in a trade or business – “**trade or business property**”
- Real Estate held as an investment for the production of income – “**investment property**”

Types of Taxable Income

- Active Income
 - Salaries, wages, bonuses, and commissions
- Portfolio Income
 - Interest, dividends, and capital gains
- Passive Income
 - Rents from real estate, and royalties from oil and gas rights

Passive Activity Loss Restrictions

- Passive losses cannot be used to reduce active or portfolio income
- Passive losses may be used to reduce other passive income
- Passive losses not used may be used in future years or at the same time of sale

Passive Activity Loss Restrictions

- 1st Exception
 - Active participants may deduct up to \$25,000 in passive losses against other non-passive income, subject to limitations such as their adjusted gross income
- 2nd Exception
 - Broad exception for real estate professionals from the Passive Activity Loss rules.
 - For many of you, if you enter the real estate business, this will apply to you.

Tax on Operations

- To calculate after tax cash flow, there is a two step process:
 - Step 1: Calculate Tax Liability
 - Step 2: $\text{BTCF} - \text{Tax Liability} = \text{ATCF}$

After-Tax Cash Flows

- Calculating the after-tax cash flow from operations
- Step 1: Compute taxable income

Net Operating Income

- Depreciation

- Interest

Taxable Income

After Tax Cash Flows

- Step 2: Compute Taxes
- Taxes (at 28%) = $0.28 \times 1,680 = \$470$
- Step 3: Compute after-tax cash flow from operations for year 1
- $$\begin{aligned} \text{ATCF}_1 &= \text{BTCF}_1 - \text{Taxes} \\ &= 29,115 - 470 \\ &= \$28,645 \end{aligned}$$

Tax on Operations

<u>Item</u>	<u>Symbol</u>
Net Operating Income	(NOI)
- Depreciation	(DEP)
- Interest Expense	(INT)
- <u>Amortized Financing Costs</u>	<u>(AFC)</u>
= Taxable Income	(TI)
<u>x Tax Rate</u>	<u>(TR)</u>
= Tax Liability	(TAX)

After Tax Cash Flow From Operations

<u>Item</u>	<u>Symbol</u>
Net Operating Income	(NOI)
- Interest Expense	(INT)
- Principal Amortization	(PA)
= Before Tax Cash Flow	(BTCF)
- Tax Liability	(TAX)
= After Tax Cash Flow	(ATCF)

Interest Expense and Amortized Financing Costs

- Interest and prepaid interest
- Costs of financing
- Financing costs amortized over the term of the loan
- Unused balance taken in the year sold

Depreciation Basis

- The original cost basis includes all costs associated with acquiring the property and transferring the title
- Land value cannot be depreciated
- The depreciable basis is the total value that can be depreciated over the recovery period
- Depreciable Basis = Cost Basis – Land Amount

Annual Depreciation Deduction

- Annual Depreciation
 - Depreciable Basis / Recovery Period

Depreciation

- Depreciation
 - Depreciable Basis / Recovery Period
- Recovery Period is different based on property type
 - Residential income producing property (27.5 Years)
 - Non-residential income producing property (39 Years)
 - Personal Property (3-15 Years)

We're Different

- Note that the recovery period is a product of the tax code. It will vary based on the country that the real estate is located in.
 - Canada – 4% per year, declining balance
 - Singapore – no capital gains tax
 - France – Land basis is set, but depreciation schedule is flexible

Original Cost Basis and Depreciation

The original cost basis is affected by depreciation and substantial (capital) improvements

Original Cost basis

$$\begin{aligned} & - \text{Total Annual Depreciation} \\ & + \text{Total Capital Improvements} \\ & = \text{Adjusted Basis} \end{aligned}$$

After Tax Cash Flows

- Taxes on the property sale
 - Gain from price appreciation
 - The maximum is 15%
 - Gain from accumulated depreciation
 - Taxed at 25%
 - Note that these rates have changed and will change in the future as the tax code is updated and modified.

After Tax Cash Flows

- Step 1: Compute tax on property value increase
- Step 2: Compute tax on prior depreciation
- Step 3: Compute total taxes from sale

After Tax Cash Flows

- Step 4: Compute after-tax cash flow from the property sale
- $ATCF_s = BTCF_s - \text{Taxes}$

Analysis

- Compute After-Tax Internal Rate of Return
- Compute After-Tax Net Present Value

Tax Due on Sale

<u>Item</u>	<u>Symbol</u>
= Net sale proceeds	(NSP)
- Adjusted Basis	(AB)
= Total Taxable Gain	(TG)
- Depreciation Recapture	(DR)
= Capital gain	(CG)
Capital Gain Tax	(CGTAX)
+ Depreciation Recapture Tax	(DRTAX)
= Tax Due on Sale	(TDS)

After Tax Cash Flow From Sale

Gross Sale Price
<u>- Selling Expenses</u>
= Net Sale Proceeds
<u>- Remaining Mortgage Balance</u>
= Before Tax Profit (or Loss)
<u>- Tax Due on Sale</u>
= After Tax Profit (or Loss)

Two Taxes Due on Sale

- Let's assume that you bought a property for \$7,000,000 sold it for \$8,000,000, and while you held it, you took \$1,000,000 in depreciation as a tax deduction. In addition, you made \$500,000 in capital improvements. The selling expenses are 5% of the sales price, and the outstanding mortgage balance is \$5,000,000. What is the tax due on sale and the after tax cash flow?

Sales Price		8,000,000	
Selling Expenses		400,000	
Mortgage Balance		<u>5,000,000</u>	
Before Tax CF		2,600,000	
Original Cost Basis	7,000,000		
Accumulated Depreciation	1,000,000		
Capital Improvement	<u>500,000</u>		
Adjusted Basis	6,500,000		
Capital gain (SP-SE-AB)	1,100,000		
Depreciation Recapture	<u>1,000,000</u>		
Price Appreciation	100,000		
Tax on price appreciation	15,000	15%	
Tax on depreciation Recapture	<u>250,000</u>	25%	
Total capital gain tax			<u>265,000</u>
After Tax CF from Sale			<u>2,335,000</u>

Tax on Carried Interest

- Brief discussion of carried interest