


Chapter 17

## Real Estate Appraisal

This presentation includes materials from Ling and Archer, 4<sup>th</sup> edition, Real Estate Principles



## Market Value



- The highest price a property will bring if:
  - Payment is made in cash or its equivalent
  - The property is exposed on the open market for a reasonable length of time
  - The buyer and seller are fully informed as to market conditions and the uses to which the property may be put
  - Neither is under abnormal pressure to conclude a transaction
  - The seller is capable of conveying marketable title

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## Appraisal

- An estimate of value (*fair market value*).
  - “states an opinion of the defined value of an adequately described property as of specific date . . . analysis of relevant market information”
  - “the act or process of estimating the value”
- Three approaches to estimating value:
  - Sales Comparison Approach (Market Approach)
  - Cost – construction cost plus land value
  - Income – monetary returns of property capitalized

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## Value Concepts

- **Market value:**
  - Most probable selling price, assuming “normal” sale conditions.
  - Value for the “typical” market participant.
- **Investment value:**
  - Value to a particular individual (investor).
- **Transaction price:**
  - Price actually paid for a specific property.

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## What About Real Estate Markets?

- Every property is unique
  - Unique location
  - Many & varied attributes
- These heterogeneous assets trade in illiquid, highly segmented & informationally inefficient local markets

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## Uniform Standards of Appraisal Practice (USPAP)

- In 1987, nine leading appraisal groups jointly put forth uniform appraisal standards
- Maintained by the Appraisal Foundation, the Uniform Standards of Professional Appraisal Practice (USPAP) are required & followed by all states and federal regulatory agencies

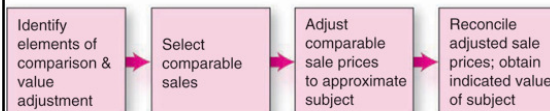
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## Sales Comparison Approach

- Basic Idea:
  - Value of RE can be determined by analyzing the sale prices of similar properties
- Why?
  - Because in a competitive market close **substitutes** should sell for similar prices

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## Sales Comparison Appraisal Approach



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## Identify Elements of Comparability

- Same subdivision?
- Same price range?
- Same size?
- Same style?
- Same vintage?
- Other?

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## Selecting Comparables

- Must be properties that prospective buyers would consider substitutes
- Should be arms-length transactions
  - Fairly negotiated prices that occurred under “normal” conditions
    - For example, not a distressed sale
- Select to minimize required physical and locational adjustments

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## Selecting Comparables

- Data sources:
  - Public records (e.g., county property tax assessor)
  - Multiple listing service
  - Private vendors (title companies, others)
  - Others?
- Importance of personal relationships

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## Adjustments to Comparable Sale Prices

- Goal?
  - Convert characteristics of each comparable to an approximation of subject.
  - Why not adjust the characteristics of the subject?
- Sequence of adjustments
  - Transactional adjustments
  - Property adjustments

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## Adjustments to Comparable Sales Prices

- Transactional Adjustments
  - Property rights conveyed
  - Financing terms
  - Conditions of sale (arm's length or not?)
  - Expenditures made immediately after purchase
  - Market conditions

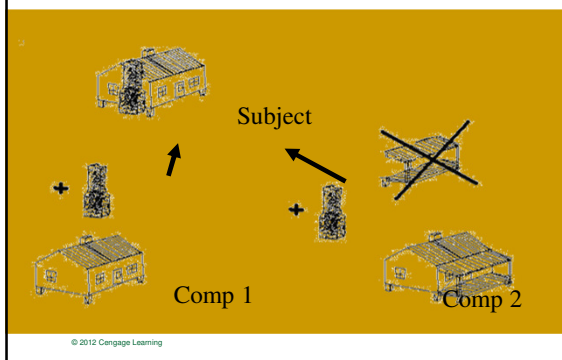
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## Adjustment to Comparable Sales Prices

- Property Adjustments
  - Location
  - Physical characteristics
  - Economic characteristics (more important for commercial – e.g. operating cost differences)
  - Use
  - Non-realty items (personal property)

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## Object of Adjustments



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## Example of Sales Comparison Approach

- You are appraising a property located adjacent to a high speed freeway
- Improvements consist of a one-story frame dwelling with 8 rooms and 2 baths in a total area of 2,000 sq. ft.
- Of average quality construction, home was in good condition at time of inspection
- Floor plan & items of equipment are typical for this class of property

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- Investigation disclosed the following transactions involving comparable properties in the neighborhood of the subject and in a similar value range as the subject



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## Info on 4 Comparables

- (1) **One year ago** a 2,400 sq. ft. property **not adjacent to freeway** sold for \$160,000. Improvements were nearly identical to subject dwelling in all but size.
- (2) **This year** a 2,400 sq. ft. property **not adjacent to freeway** sold for \$150,500. This dwelling was highly similar to subject in all respects except for size.
- (3) A 2,000 sq. ft. property **not adjacent to the freeway** sold **1 year ago** for \$150,000. These improvements are highly similar to subject.
- (4) A 2,400 sq. ft. property sold **this year** for \$140,300. Located **adjacent to the freeway**, it was very similar to subject except for size.

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### Example (continued)

- **Problem:**  
Develop an indication of the value of the subject, showing the source of each adjustment.
- **Indicated adjustments are for:**
  - time
  - location relative to freeway
  - size

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### Adjustment Factors

- **Time:**

Sale 1 (1 year ago)	\$ 160,000
Sale 2 (current)	<u>150,500</u>
Difference	\$ -9,500
- **Location:**

Sale 2 (not adjacent to freeway)	\$ 150,500
Sale 4 (adjacent to freeway)	<u>140,300</u>
Difference	\$ -10,200
- **Size:**

Sale 1 (2,400 sq. ft.)	\$ 160,000
Sale 3 (2,000 sq. ft.)	<u>150,000</u>
Difference	\$ -10,000

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### Example (continued)

Adjustments:

Sale	Sale Price	Time	Location	Size	Total Adj.	Indicated Value
1	\$160,000	-\$9,500	-\$10,200	-\$10,000	-\$29,700	\$130,300
2	150,500		- 10,200	- 10,000	- 20,200	130,300
3	150,000	- 9,500	- 10,200		- 19,700	130,300
4	140,300			- 10,000	- 10,000	130,300

Estimated Market Value: \$130,300

Note: Adjustments can be positive or negative. They are all negative here because subject property is inferior to the comparables in all ways that matter to the market

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### In the Real World...

- In "real life" situations, **adjusted** values never line up identically as in above example
- How many attributes of the homes should appraiser attempt to price?

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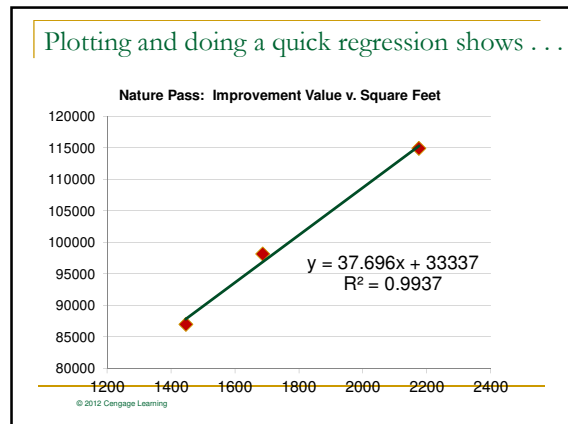
### What's an extra square foot worth?

(use the same approach for lots size adjustment)

This is taken from BCAD 2012 Assessment for Three houses on Nature Pass (near UTSA)

House Number	\$Improve-ments	Square Feet	\$/sqft
7742	87000	1446	60.17
7734	98150	1686	58.21
7723	114910	2175	52.83

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### Using Repeat Sales to Adjust for Market Conditions

Property	Date of Previous Sale	Price at Previous Sale (SP <sub>1</sub> )	Price Today (SP <sub>2</sub> )	Change per Month (SP <sub>2</sub> - SP <sub>1</sub> )/mos.	Monthly Rate of Increase (% of SP <sub>1</sub> )
A	12 mos. ago	\$191,000	\$197,900	\$575	0.30%
B	18 mos. ago	158,600	167,000	467	0.29
C	24 mos. ago	148,900	162,000	546	0.37
Average monthly rate of increase =					0.32%

Note: It is often difficult to find a sufficient number of comparables that have sold twice. Thus, must often rely on publicly available house price indices to estimate price appreciation for a typical house in the subject's neighborhood

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### Exhibit 7-6: Sequence of Adjustments

Sale price of comparable	
<i>Transaction adjustments:</i>	
Adjustment for property rights conveyed	+/-
Adjusted price	
Adjustment for financing terms	+/-
Adjusted price	
Adjustment for conditions of sale	+/-
Adjusted price	
Adjustment for expenditures immediately after purchase	+/-
Adjusted price	
Adjustment for market conditions	+/-
Adjusted price	
<i>Property Adjustments for</i>	
Location	+/-
Physical characteristics	+/-
Economics characteristics	+/-
Use	+/-
Nonrealty components	+/-
Indication of subject value	

Exhibit 8-7 Sale Comparison Approach: Market Data Grid for 2380 Appletree Court

Element of Comparison	Subject	Comparable Sale 1	Comparable Sale 2	Comparable Sale 3
Transaction price		\$169,900	\$167,200	\$157,100
Conditions of sale	Arm's length	Same	Same	Same
Financing terms	Conventional	Conventional	Conventional	Conventional
Sale (value) date	Today	This month	3 mos. ago	4 mos. ago
Location	Parkway Estates	Parkway Estates	Parkway Estates	Parkway Estates
Site size	0.5 acres +/-	0.5 Acres +/-	0.45 Acres +/-	0.48 Acres +/-
Construction quality	Siding	Siding/brick	Siding	Brick
Effective age	3 yrs.	6 yrs.	10 yrs.	15 yrs.
Living area	1,960 sq.ft.	2,060 sq.ft.	2,077 sq.ft.	1,818 sq.ft.
Number of baths	2.5 baths	2.5 baths	2.5 baths	3.0 baths
Garage spaces	2-car	2-car	2-car	2-car
Porch, patio, deck	None	None	None	200 sq.ft.
Pool, fence, etc.	None	None	Pool	Pool
Legal characteristics	Fee simple	Same	Same	Same
Use	Single-family	Same	Same	Same
Nonrealty items	None	None	None	None

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Elements of Comparison	Subject	Comp Sale 1	Comp Sale 2	Comp Sale 3
Sale price of comparable		\$169,900	\$167,200	\$157,100
<i>Transaction adjustments</i>				
Adj. for property rights conveyed	Fee simple	0	0	0
Adjusted price		\$169,900	\$167,200	\$157,100
Adjustment for financing terms	Conventional	0	0	0
Adjusted price		\$169,900	\$167,200	\$157,100
Adjustment for conditions of sale	Arm's length	0	0	0
Adjusted price		\$169,900	\$167,200	\$157,100
Adj. for expend. immed. after purchase		0	0	0
Adjusted price		\$169,900	\$167,200	\$157,100
Adjustment for market conditions	Today	0	1,500	1,900
Adjusted price		\$169,900	\$168,700	\$159,000
<i>Property Adjustments for</i>				
Location	Suburban	0	0	0
<i>Physical characteristics:</i>				
Site	0.50 acres	0	5,000	2,000
Construction quality	Siding/good	(1,500)	0	(3,000)
Effective age	3 years	3,750	8,750	15,000
Living area	1,960 sq. ft.	(4,800)	(5,600)	6,800
Baths	2.5	0	0	(2,000)
Porch, patio, deck	None	0	0	(3,200)
Fence, pool, etc.	None	0	(7,000)	(7,000)
Total adj. for physical characteristics		(2,550)	1,150	8,600
Economics characteristics		0	0	0
Use	Single-family	0	0	0
Nonrealty components	None	0	0	0
<b>Adjusted Sale Price of Comps</b>		\$167,350	\$169,850	\$167,600

### Reconciliation of Adjusted Sale Prices

Source	Final Adjusted Sale Price	Weight (%)	Weighted Price
Comparable Sale 1	167,350	60%	\$100,410
Comparable Sale 2	169,850	20	33,970
Comparable Sale 3	167,600	20	33,520
Indicated Value (using the sales comparison approach)			\$167,900

Appraisal Terminology: For each appraisal technique, we obtain an **Indicated Value**

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### Cost Approach

- Procedure
  - Estimated reproduction cost of improvements
  - Estimated accrued depreciation
  - = Depreciated cost of building improvements
  - + Estimated value of site
  - = **Indicated value** by the cost approach


Major Assumption?:

The cost of creating a good equals its value

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### Types of Accrued Depreciation (continued)

- Physical deterioration:
  - Loss in market value due to aging, decay & ordinary use (worn shingles)
- Functional obsolescence:
  - Loss in value due to changes in tastes, preferences, technological innovations, or market standards
  - Examples?



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### Types of Accrued Depreciation (continued)

- External (economic) obsolescence:
  - Loss in value due to changes beyond property boundaries (neighborhood effects)
    - Increased traffic congestion in area
    - Conversion of residential neighborhood from owner-occupied to rental
    - Environmental issues
    - Decline in desirability/demand for neighborhood

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### Outline of Cost Approach

**TABLE 14  
COST APPROACH**


Reproduction cost (new)		\$100,000
Minus: Physical deterioration	\$25,000	
Functional obsolescence	10,000	
Economic obsolescence	5,000	
Total accrued depreciation	\$40,000	- 40,000
Depreciated value of improvements		\$ 60,000
Add: Site value		20,000
Value indicated by <i>cost approach</i>		\$ 80,000

See Table 17.3 in textbook for an other example

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### Appraisal Assignments Where Cost Approach is Heavily Weighted?

- New buildings
- Insurance appraisals
- Specialty buildings



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### Appraisal Terminology

- Each method (sales comparison, cost, income) produces an **Indicated Value** by that method.
- When methods are combined, one gets a **"Final Estimate of Value"**
- Each method's Indicated Value are weighted to produce the Final Estimate of Value or possibly the Opinion of the Market Value

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### Uniform Residential Appraisal Report

Uniform Residential Appraisal Report File No. R2003-100

The purpose of this summary appraisal report is to provide the lender/borrower with an accurate and adequately supported opinion of the market value of the subject property.

Property Address: 2300 Applebee Court, Orlando, FL 32835  
 Name: Jacob Jones, Owner of Public Record: Blaine Strickland, County: Orange  
 Legal Description: Lot 10, Block B, Parkway Estates, Plat Book 245, Page 34  
 Assessor's Parcel #: 23480916-00-0-0100, Tax Year: 2009, S.F. Area: 2,520.00  
 Neighborhood Name: Parkway Estates, the address: 34-26, Census Tract: 38.04  
 Occupant:  Home  Rental  Vacant, Special Assessments: \$ 0.00,  1/2yr,  3/4yr,  6/12 month  
 Property Rights Acquired:  Fee Simple  Leasehold  Other (describe):  
 Insured:  Yes  No, Insured by: Lender/Cash Bank of Florida, Address: 15760 N. Main, Orlando, FL  
 Is the subject property currently offered for sale or has it been offered for sale in the twelve months prior to the effective date of this appraisal?  Yes  No  
 Report date: recently took offering process and assets. The property was listed for \$165,000 in the local MLS on July 20, 2009.  
 I did not analyze the contract for sale for the subject purchase transaction. Explain the results of the analysis of the contract for sale or why the analysis was not performed. State in an annex-length transaction.  
 Contract Price: \$ 163,000, Date of Contract: 8/1/2009, Is the property sold for the owner of public record?  Yes  No, Title Sponsor: Tax Assessor  
 Have any financial encumbrances (lien charges, sale concessions, gift or development encumbrances, etc.) to be paid by any party on behalf of the borrower?  Yes  No  
 If Yes, report the total dollar amount and describe the liens to be paid.

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### Competitive Market Analysis

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### How much would you pay **today** for . . .

- One hundred dollars paid with certainty each year for five years, starting one year from now.
- Why would you pay less than \$500
- One hundred dollars paid with some likelihood each year for five years, starting one year from now.
- As the likelihood of the payment decreases, how does that determine how much you would pay.

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### The Income Approach to Appraisal

- Rationale:
  - Value of a property is the present value of its anticipated income.
- Often called “income capitalization”
  - *Capitalize*: to convert future income into a present value

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### Two Approaches to Income Valuation

1. **Direct capitalization** (with an “overall” rate)
2. Discount all future cash flows at required yield (discount rate) [**The DCF Approach**]

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### Two Approaches to Income Valuation

1. **Direct capitalization** (with an “overall” rate)
  - Find value as a multiple of first year net income (NOI)
  - “Multiplier” is obtained from sales of comparable properties
  - Similar in spirit to valuing a stock using price/earnings multiple (Gordon DDM model)

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### Gordon DDM model

$$P_0 = \frac{D_0(1+g)}{r-g} = \frac{D_1}{r-g}$$

Next dividend (blue arrow pointing to D<sub>1</sub>)  
 Discount rate (red arrow pointing to r-g)  
 Growing at (growth) (green arrow pointing to g)

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## Two Approaches to Income Valuation


2. Discounted cash flow (DCF)

- Project net cash flows for a standard holding period (say, 10 years).
- Discount all future CFs at required yield (discount rate)
- Similar to capital budgeting in Finance

**What is the TIME VALUE OF MONEY?**

Everyone talks about it- Now find out How it Works!

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## DCF Approach

$$PV = \sum_{t=1}^T \frac{CashFlow_t}{(1+r)^t}$$

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## How Does DCF Differ from Direct Cap?

- DCF models require:
  - an estimate of the expected **holding period** of the typical buyer
  - estimates of net **cash flows** over the entire expected holding period, including the **net income from sale**
  - the appraiser to select the **appropriate yield** (required IRR) at which to discount all future cash flows.

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## Estimating Net Operating Income

–	<i>PGI</i>	Potential gross income
–	<i>VC</i>	Vacancy & collection loss
+	<i>MI</i>	Miscellaneous income
=	<i>EGI</i>	Effective gross income
–	<i>OE</i>	Operating expenses
–	<i>CAPX</i>	Capital expenditures*
=	<i>NOI</i>	Net operating income


\*Traditionally, appraisers have included in their estimates of NOI a "reserve for replacement" of capital items. However, in the real estate investment community, expected capital expenditures are increasingly referred to in cash flow forecasts as "capital expenditures" or "capital costs." To be consistent with the current treatment in the investment community, and to avoid changing terminology as we progress through the text, we will refer to these anticipated expenses as capital expenditures or "CAPX."

Sometimes referred to as a "reconstructed" operating statement

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## Example: Centre Point Office Building


- Property consists of 9 office suites, 4 on the first floor and 5 on the second.
- Contract rents: 6 suites at \$1,800 per month and 3 at \$1,400 per month.
- Annual market rent increases: 3% per year
- Vacancy and collection losses: 10% per year
- Operating expenses: 40% of effective gross income each year
- Capital expenditures: 5% of effective gross income each year
- Expected holding period: 5 years



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## Potential Gross Income (PGI)

- Potential gross income: Rental income assuming 100% occupancy



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### Potential Gross Income: Centre Point

**First Floor**  
 1,000 sq. ft. suites – 4 × \$1,800 × 12 mos. = \$86,400

**Second Floor**  
 800 sq. ft. suites – 2 × \$1,800 × 12 mos. = \$43,200  
 800 sq. ft. suites – 3 × \$1,400 × 12 mos. = \$50,400  
 = \$93,600

Potential Gross Income = (\$86,400 + \$93,600)  
 = \$180,000

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### Using Rent Comparables to Estimate Rental Rate

■ Example: Survey of rental rates for second-floor offices in Centre Point:


	Comparable			Average
	1	2	3	
Rent per month	\$1,620	\$1,540	\$1,680	
Sq. ft. per unit	790	810	900	833
Rent per sq. ft. per month	\$ 2.05	\$ 1.90	\$ 1.87	\$1.94

Implications: 2<sup>nd</sup> floor rents average \$1.95, consistent with mkt rates

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### Types of Commercial Leases


- Straight lease: “Level” lease payments
- Step-up or graduated lease: Rent increases on a predetermined schedule
- Indexed lease: Rent tied to an inflation index: Consumer Price Index, Union wage index, etc.
- Percentage lease: Rent includes percentage of tenant’s sales



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### Effective Gross Income

- VC-vacancy & collection loss is based on:
  - Historical experience of subject property
  - Competing properties in the market
  - “Natural vacancy” rate:
    - Vacancy rate that is expected in a stable or equilibrium market





PGI	Potential Gross Income
- VC	Vacancy & Collection Loss
+ MI	Miscellaneous Income
= EGI	Effective Gross Income
- OE	Operating Expenses
- CAPX	Capital Expenditures
= NOI	Net Operating Income

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### Effective Gross Income

- Miscellaneous income
  - Garage rentals & parking fees
  - Laundry & vending machines
  - Clubhouse rentals

PGI	Potential Gross Income
- VC	Vacancy & Collection Loss
+ MI	Miscellaneous Income
= EGI	Effective Gross Income
- OE	Operating Expenses
- CAPX	Capital Expenditures
= NOI	Net Operating Income


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### Centre Point Effective Gross Income

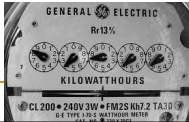
Potential gross income (PGI)	\$180,000
- Vacancy & collection loss (VC)	18,000 (@10%)
+ Miscellaneous income (MI)	0
= Effective gross income (EGI)	\$162,000

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## Operating Expenses




- Operating Expenses:
  - Ordinary & regular expenditures necessary to keep a property functioning competitively.
  - Fixed: Expenses that do not vary with occupancy.
    - insurance,
    - property taxes
  - Variable: Expenses that vary with occupancy.
    - Utilities
    - Maintenance & supplies
    - Trash and garbage removal




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## Operating Expenses



- Do **not** include:
  - Mortgage payments
  - Tax depreciation
  - Capital expenditures




PGI	Potential Gross Income
- VC	Vacancy & Collection Loss
+ MI	Miscellaneous Income
= EGI	Effective Gross Income
- OE	Operating Expenses
- CAPX	Capital Expenditures
= NOI	Net Operating Income

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## Capital Expenditures (CAPX)

- CAPX: Expenditures that materially increase value of structure or prolong its life:
  - Roof replacement
  - Additions
  - HVAC Replacement
  - Resurfacing of parking areas
  - Tenant improvements



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## Reconstructed Operating Statement:

Stabilized Annual Income		
Potential gross income (PGI)		\$180,000
Less: Vacancy and collection losses (VC)		18,000
Effective gross income (EGI)		162,000
Less: Operating expenses (OE)		
Fixed expenses		
Real estate taxes	\$15,900	
Insurance	9,200	\$25,100
Variable expenses		
Utilities	\$12,800	
Garbage collection	1,000	
Supplies	3,000	
Repairs	5,200	
Maintenance	10,500	
Management	7,200	\$39,700
Total operating expenses		\$ 64,800
Less: Reserves for leasing and capital expenditures		
Roof and other exterior expenditures	\$ 2,800	
Tenant improvements	3,200	
Leasing commissions	2,100	8,100
Total reserves for capital expenditures		8,100
Net operating income (NOI)		\$ 89,100

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## Projected Annual Operating Statement

Scheduled gross annual income	\$84,000	
Vacancy allowance and collection losses	4,200	
Effective Gross Income		\$79,800
Operating Expenses		
Property taxes	9,600	
Hazard and liability insurance	1,240	
Property management	5,040	
Janitorial services	1,500	
Gardener	1,200	
Utilities	3,940	
Trash pickup	600	
Repairs and maintenance	5,000	
Other	1,330	
Reserves for replacement		
Furniture and furnishings	1,200	
Stoves and refrigerators	600	
Furnace and/or air-conditioning	700	
Plumbing and electrical	800	
Roof	750	
Exterior painting	900	
Total Operating Expenses		\$34,400
Net Operating Income		\$45,400
Operating Expense Ratio: \$34,400 / \$79,800 = 43.1%		

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## Net Operating Income

- NOI is property's "dividend"
  - Why is it not investor's dividend?
- Projected stream of NOI is fundamental determinant of value
- NOI must be sufficient to
  - service the mtg debt and
  - provide equity investor with an acceptable return on equity

PGI	Potential Gross Income
- VC	Vacancy & Collection Loss
+ MI	Miscellaneous Income
= EGI	Effective Gross Income
- OE	Operating Expenses
- CAPX	Capital Expenditures
= NOI	Net Operating Income

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### First Income Valuation Method: Direct Capitalization

Basic value equation:

$$V = \frac{NOI_1}{R_o}$$

**Warning!!!!!!**

$R_o$  is a "cap" rate

$R_o$  is NOT a discount rate!!!!  
Compare to Gordon Model

$$P_o = \frac{D_o(1+g)}{r-g} = \frac{D_1}{r-g}$$

Next dividend →  $D_1$   
Discount rate →  $r-g$   
Growing at (growth) →  $g$

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### Steps in Direct Capitalization

1. Obtain estimates of cap rates,  $R_o$ , from the market using the "direct market extraction" equation:

$$R_o = \frac{NOI_1}{\text{Selling Price}}$$

From a comparable property

2. Divide the subject's  $NOI_1$  by a weighted average of the abstracted  $R_o$ s to obtain an estimate of value for the subject

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### Direct Capitalization for Centre Point Case

Step 1: Extract  $R_o$  from the market.

Comparable	First-year NOI		Sale Price	=	$R_o$	Price ÷ NOI
A	\$80,000	÷	\$ 825,000	=	0.097	10.3
B	114,000	÷	1,200,000	=	0.095	10.5
C	100,000	÷	971,000	=	0.103	9.7
D	72,000	÷	713,000	=	0.101	9.9
E	90,000	÷	910,000	=	0.099	10.1
			Average	=	0.099	10.1

Note: We have assumed each is equally comparable to subject

From where do you obtain comparable NOIs and sales prices?

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### Direct Capitalization for Centre Point Case

2. Compute estimated market value, using first year NOI:

$$\text{Value} = \frac{\$89,100}{0.099} = \$900,000$$

$$\text{Value} = \$89,100 \times 10.1 = \$900,000$$

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### Important Points About Cap Rates

- $R_o$ : Overall rate of capitalization, or "going-in" cap rate.
- $R_o$ : A ratio of initial cash flow to value
  - Future cash flows and changes in asset value also are important
- **Not a yield/discount rate.**

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### Important Points About Cap Rates

- Direct capitalization only uses first year NOI, but  $R_o$  reflects all future cash flows:
  - Transaction prices of the comparables reflect the value of future cash flows.
  - In turn, the cap rates extracted from these purchases do so as well.

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## Effective Gross Income Multiplier

- $EGIM = \text{Sale price} \div \text{Effective gross income}$
- Quick indicator of value for smaller rental properties
- Requires no operating expense information
- Critical assumptions
  - Roughly equal operating expense percentages across properties
  - Assumes market rents are paid
- Best used for properties with short-term leases (apartments & rental houses)

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## Effective Gross Rent Multiplier Example

	Comparable		
	A	B	C
Recent sale price	\$876,400	\$986,900	\$776,300
Effective gross income (EGI)	\$158,200	\$175,300	\$143,500
EGIM (sale price $\div$ EGI)	5.54	5.63	5.41
	Average EGIM = 5.53		

$$\begin{aligned} \text{Indicated value of subject} &= 5.53 \times \text{EGI} \\ &= 5.53 \times 162,000 \\ &= 895,860, \text{ or } \$896,000 \end{aligned}$$

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## Gross Rent Multiplier Example

Building	Sales Price	Gross Annual Rents	Gross Rent Multiplier
No.1	\$245,000	$\div$ \$34,900	= 7.02
No.2	\$160,000	$\div$ \$22,988	= 6.96
No.3	\$204,000	$\div$ \$29,352	= 6.95
No.4	\$196,000	$\div$ \$27,762	= 7.06
As a Group:	\$805,000	\$115,002	= 7.00

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## Problems with Valuation by Direct Capitalization

- Inadequate data on comparable sales due to:
  - Above- or below-market leases
  - Differing length of leases and rent escalations
  - Differing distributions of operating expenses between landlord and tenant
- Differing prices between institutional and private investors for similar properties
- Result: **Discounted cash flow (DCF) analysis can be preferable**

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## DCF Example: Centre Point

Year	1	2	3	4	5
Potential gross income (PGI)	\$180,000	\$185,400	\$190,962	\$196,691	\$202,592
– Vacancy & collection loss (VC)	18,000	18,540	19,096	19,669	20,259
= Effective gross income (EGI)	162,000	166,860	171,866	177,022	182,332*
– Operating expenses (OE)	64,800	66,744	68,746	70,809	72,933
– Capital expenditures (CAPX)	8,100	8,343	8,593	8,851	9,117*
= Net operating income (NOI)	\$89,100	\$91,773	\$94,526*	\$97,362	\$100,283*

Subtraction discrepancy due to rounding.

$$\text{Sale price at end of Year 5} = \text{NOI}_5 \div R_t = \$103,291 / 0.100 = \$1,033,000$$

Where  $R_t$  is a terminal or "going-out" cap rate, slightly higher than  $R_o$

Sale price (SP)	\$1,033,000
– Selling expenses (SE)	58,300
= Net sale proceeds (NSP)	\$ 974,700

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**Why is the  
Going Out Cap Rate  
Higher than the  
Going In Cap Rate?**

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### Valuation of the Unlevered Cash Flows: Centre Point (Indicated Value)

Year	NOI	Net Sale Proceeds	Total Cash Flow	Present Value 11.75%
1	\$ 89,100		\$ 89,100	\$ 79,732
2	91,773		91,733	73,489
3	94,526		94,526	67,734
4	97,362		97,362	62,431
5	100,283	\$974,700	1,074,983	\$616,827
Present value = \$900,181				

Discount rate presumed to reflect required yield in market for unlevered investments of similar risk

**The present value, is the Indicated Value using the DCF Approach**

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### Let's review the Present Value math for NOI<sub>4</sub>

$$PV\ of\ NOI_4 = \frac{NOI_4}{(1+r)^4} = \frac{97362}{(1.1175)^4} = 62431$$

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### Reconciliation of Value Indicators

Approach	Indicated V <sub>0</sub>	Weight (%)	Weighted V <sub>0</sub>
Indicated values from income approach			
DCF analysis (NOIs)	\$900,000	60%	\$540,000
Direct capitalization	910,000	30	273,000
EGIM analysis	896,000	5	44,800
Indicated value from cost approach			
	855,000	5	42,750
Indicated value from sales comparison approach			
	Not applied	0	0
Weighted V <sub>0</sub> added to yield final estimate of value:			\$900,550
Rounded to:			\$900,000

Appraisal Terminology: the **Final Estimate of Value**, shown above results from using the Indicated Values from two or more appraisal methods.

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- ### So...What's Better?
- Is direct capitalization using R<sub>0</sub> superior to valuation by DCF?
    - Fewer **explicit** assumptions and forecasts are required
    - What **implicit** assumption are you making?
- Did you know??*
- "GOOD" (with a red arrow pointing right)
- "AWESOME" (with a green arrow pointing right)
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- ### Appraiser License
- Certified General Appraiser
  - Certified Residential Appraiser
  - State licensed appraiser
  - Provisional licensed real estate appraiser
  - Appraiser trainee
- 
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## HIGHEST AND BEST USE

- That use that will give the property its greatest current value!



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## Markets

- Buyer's market – excess supply of housing for sale.
- Seller's market – demand exceeds supply.



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## Key Terms

- Appraisal
- Capitalize
- Comparables
- Cost approach
- Depreciation
- Gross rent multiplier
- Highest and best use
- Income approach
- Market approach
- Market value
- Operating expenses



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