Fin 5433: Chapter 10

Valuation of Income Properties: Appraisal and the Market for Capital

Who Uses Market Value Appraisals?

- Buyers
- Sellers
- Corporate acquisitions, mergers or dissolutions
- Courts
  - Divorces
  - Eminent domain cases
  - Settlement of estates
  - Bankruptcy
- Mortgage Lenders

Why are Appraisals Necessary?

- Few transactions available to indicate value
- Every property is unique
  - Unique location
  - Many and varied attributes
- Large value of the asset makes errors costly

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.

Uniform Standards of Appraisal Practice (USPAP)

1. Define the Problem
   - Specific property
   - Rights to be valued
   - Type of value (market, insurance, taxable)
   - Date of valuation

Uniform Standards of Appraisal Practice (USPAP)

2. Selection and collection of data
   - Property market data
     - Vacancy rates
     - Rental rates
     - Prices per square foot
   - Property specific data
     - Subject property
     - Comparable properties
   - Required yields or rates of capitalization

USPAP (continued)

3. Highest and best use
- That use which is:
  - Legally permissible
  - Physically possible
  - Financially feasible
  - Most profitable (yields highest residual value to land)
- Highest and best use as though vacant: Considers any possible use
- Highest and best use as improved: Must consider any cost of demolition

Highest & Best Use

- What determines land values?
  - Residual value from development
- Residual Land Value
  - PV – Building Cost = Land Value
  - Step 1: Compute the present value of the estimated cash flows for all alternatives.
  - Step 2: Subtract building cost
  - Step 3: Select highest value among the alternatives (indicates the HBU, see Ex. 10-8)

USPAP (continued)

4. Estimate value by three methods
  - Sales comparison approach
  - Income approach
  - Cost approach
5. Reconcile resulting values
6. Prepare appraisal report
  - Narrative report
  - Form report
  - Letter

Valuation Fundamentals

- Market Value
  - Most Probable Price
  - Open Market and Fair Sale
  - Knowledgeable Buyer and Seller
  - Arms Length Transaction
  - Normal Financing

Appraisal Process

- Physical and Legal ID
- Identify property rights to be appraised
- Specify purpose of appraisal
- Specify effective date of appraisal
- Gather and analyze market data
- Apply techniques to estimate value

Highest and Best Use?

Highest & Best Use May Change Over Time

Existing Use

Proposed Use

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 will sell for similar prices.

Sales Comparison Appraisal Approach

Identify Elements of Comparison & Value Adjustment → Select Comparable Sales → Adjust Comparable Sale Prices w.r.t. Subject → Reconcile Adjusted Sale Prices; Obtain Indicated Value

## Identify Elements of Comparability

- Similar type of location?
- Same price range?
- Same size?
- Same style?
- Same vintage?
- Other?

Selecting Comparables

- Must be properties that prospective buyers would consider substitutes
- Must be true sales
- Must be arms-length transactions
- Select to minimize adjustments
- Data sources:
  - Public records (county property tax assessor)
  - Multiple listing service (must have sale price)
  - Private vendors (title companies, others)

Adjustment of Comparables

- Goal: To convert each comparable to an approximation of the subject.
- Sequence of adjustments
  - Transactional Adjustments
    - Conditions of sale (arm's length or not?)
    - Financing terms
    - Market conditions
  - Property Adjustments
    - Location (neighborhood effects)
    - Physical characteristics
    - Legal characteristics (same bundle or rights?)
    - Use (office, apartment, retail)
    - Nonrealty items (personal property)

Object of Adjustments

Subject

Comp 1   Comp 2
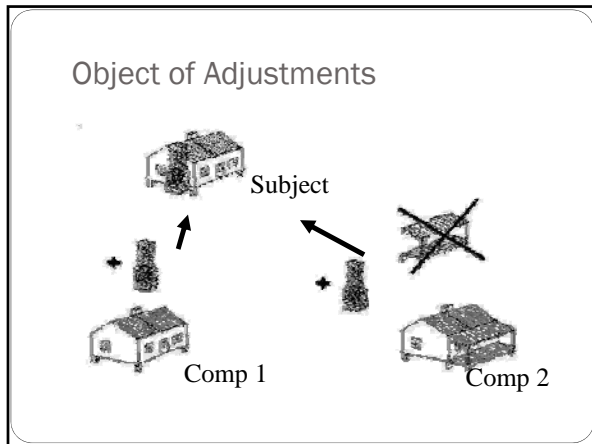
Example of Sales Comparison Approach

- 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 and items of equipment are typical for this class of property

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

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.

Example, Cont.

- Problem:
    Based on the information given, develop an indication of the value of the subject, showing the source of each adjustment.

    Adjustment factors:
        The indicated adjustments are for: time,   location relative to freeway, and size. They are derived as follows:

Adjustment Factors

- **Time**:

Sale 1 (1 year ago)	$ 160,000
Sale 2 (current)	150,500
Difference	$ -9,500

- **Location**:

Sale 2 (not adjacent to freeway)	$ 150,500
Sale 4 (adjacent to freeway)	140,300
Difference	$ -10,200

- **Size**:

Sale 1 (2,400 sq. ft.)	$ 160,000
Sale 3 (2,000 sq. ft.)	150,000
Difference	$ -10,000

Example, Cont.

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…

- Of course, in "real life" situations, indicated values never line up identically as in above example.
- How many attributes of the property should the appraiser attempt to price?

Using Repeat Sales to Adjust for Market Conditions

Exhibit 8-4

Repeat- Sale Analysis for Market Conditions Adjustment

Property	Date of Previous Sale	Price at Previous Sale (SP$_1$)	Price Today (SP$_2$)	Change per Month (SP$_2$-SP$_1$)/mos.	Monthly Rate of Increase (% of SP$_1$)
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 will often be difficult to find a sufficient number of comparable that have sold twice. Thus, we 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 8-6: Sequence of Adjustments

Sale Price

   +/- Financing Terms and Sale Conditions

= Normal Sale Price

   +/- Market conditions

= Market-Adjusted Normal Sale Price

   +/- Location

   +/- Physical Characteristics

   +/-Nonrealty items

= Final Adjusted Sale Price of Comp.

Adjustment Grid

Exhibit 8-8

Sale Comparison Approach: Adjustment Grid

Element of Comparison	Subject	Comparable Sale No. 1	Comparable Sale No. 2	Comparable Sale No. 3
Transaction Price		$169,900	$167,200	$157,100
+/- Conditions of sale	Arm's length	0	0	0
+/- Financing terms	Conventiona	0	0	0
Normal Sale Price		$169,900	$167,200	$157,100
+/- Market conditions	Today	0	+1,500	+1,900
Market-Adjusted Normal Sale Price		$169,900	$168,700	$159,000
+/- Location	Suburban	0	0	0
Physical Characteristics				
+/- Site	0.5 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
+/- Bath	2.5	0	0	-2,000
+/- Porch, Patio, Deck	None	0	0	-3,200
+/- Fence, Pool, etc.	None	0	-7,000	-7,000
Final Adjusted Sale Price		$167,350	$169,850	$167,600

Three Approaches to Income Valuation

1. GIM approach
2. Direct capitalization (with an "overall" rate)
3. Discount all future cash flows at required yield (discount rate)

Income Approach

- Gross Income Multiplier (GIM) Method:

$$GIM = \frac{\text{Sales Price}}{\text{Gross Income}}$$

- Apply GIM to the subject property
- Example 10-1: Recent sales of similar property

	1	**2**	**3**
Sales Price	$600,000	$750,000	$450,000
Gross Income	$100,000	$128,000	$74,000
GIM	6x	5.86x	6.08x

Income Approach

- Selecting the GIM from the comparables is an education opinion
  - Which is most similar to the subject?
  - How should they be weighted?
  - If 6x is determined to be the GIM and the subject has gross income = $120,000;
    Value Estimate = 6 x $120,000 = $720,000

GIM Notes

- Some appraisers use PGI and other EGI
- As long as one is consistent it should not matter much – partly philosophical. Vacancy will make a difference as will forecasted future vacancy
- Advantage of GIM is that few adjustments need to be made
- Should work reasonably if good comps

Income Approach

- Capitalization Rate Method (Direct Capitalization):

$$\text{Value} = \frac{\text{NOI}}{\text{R}}$$

- Example 10- 2: Recent similar property sales

	1	**2**	**3**	**4**
Sales Price	$368,500	$425,000	$310,000	$500,000
NOI	$50,000	$56,100	$42,700	$68,600
R	.1357	.1320	.1377	.1372

Income Approach

- Capitalization Rate Range:
  - $.1320 < R < .1377$

- The cap rate choice is an educated opinion of the appraiser
  - Which property is most similar to the subject?

Income Approach

- If the subject NOI = $58,000, the value estimate could be
  - $\dfrac{\$58000}{.1377} < V < \dfrac{\$58,000}{.1320}$

  - $\$421,205 < V < \$439,394$

- Care must be taken when determining R

Income Approach

- Considerations when determining R
- Consider the comparables
  - Similarity to subject
    - Physical Attributes
    - Location
    - Lease Terms
    - Operating Efficiency

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
- How is NOI determined?
  - Stabilized NOI
  - Nonrecurring capital outlays
    - Lump Sum
    - Averaged
  - Was NOI skewed by a one-time outlay?
- Result: Discounted cash flow (DCF) analysis can be preferable

Income Approach

- Discounted Present Value
  - Compute the present value of future cash flows
    - Forecast NOI and holding period
    - Select discount rate based on risk and return of comparable investments (r)
    - Determine reversion value of property

Income Approach

- Estimating reversion value
  - Not an exact science
  - Method 1: Discount remaining cash flows using a terminal cap rate (R_T)
    - $R_T = (r - g)$ → constant positive growth
    - $R_T = (r)$ → growth is zero
    - $R_T = (r + g)$ → growth is a decay rate

Income Approach

- Estimating reversion value
  - Method 2: Estimate R_T from sales data
    - 5 year holding period for a new property
    - What are current cap rates for 5 year old property?
    - Use this as the terminal cap rate
  - Method 3: Estimate resale value from expected changes in property value
- Note: The DCF approach is more flexible than the previous approaches but requires more assumptions which may be good or bad.

Income Approach

- Example 10-3:
  - A property has a projected year 1 NOI of $200,000. NOI is projected to grow by 4% per year for the following 2 years, then by 2% per year for the subsequent 2 years at a 1% constant rate afterward. Given a required return of 13%, what is the value of the property?

Income Approach

- Example 10-3:
  - $NOI_1 = \$200,000$
  - $NOI_2 = \$208,000$
  - $NOI_3 = \$216,320$
  - $NOI_4 = \$220,646$
  - $NOI_5 = \$225,059$
  - Constant 1% growth begins

Income Approach

- Example 10-3:

$$\text{Terminal Value}_5 = \frac{NOI_6}{r-g} = \frac{\$227,310}{.13-.01}$$
$$= \$1,894,250$$

Income Approach

- Example 10-3:

C0	$= 0$
C1	$= \$200,000$
C2	$= \$208,000$
C3	$= \$216,320$
C4	$= \$220,646$
C5	$= \$225,059 + \$1,894,250$
i	$= 13$
CPT NPV	$= \$1,775,409$

Mortgage-Equity Capitalization

- Value = PV of Mortgage Financing + PV of Equity Investment
  - With a market based mortgage, the PV of Mortgage Financing should equal loan amount.
- Steps:
  - Estimate NOI
  - Subtract Debt Service from NOI
  - Subtract Mortgage Balance from Resale Value
  - Discount Cash Flows
  - Add Present Value of Cash Flows to Mortgage

Valuation Fundamentals

- Reconciliation of Value Estimates
  - The sales comparison and income approaches should yield similar value estimates as market participants tend to use the same evaluation techniques.
- Market Conditions Changes on "Going in" Cap Rates Cap Rate (like P/E ratios) depend on :
  - Supply & Demand pressures
  - Capital market changes
  - Capital market & spatial market changes

Cost Approach

- Don't pay more than you can build it for
- Principle of Substitution
- Estimate the construction cost if new
- Subtract depreciation
  - Physical – things wear out
  - Functional – preferences change
  - External – neighborhoods change
- Add site value