**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
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
  - \( PV - \text{Building Cost} = \text{Land Value} \)
  - 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?
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.

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)
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.

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:

<table>
<thead>
<tr>
<th>Sale</th>
<th>Sale Price</th>
<th>Time</th>
<th>Location</th>
<th>Size</th>
<th>Adj.</th>
<th>Total Adj.</th>
<th>Indicated Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$160,000</td>
<td>-$9,500</td>
<td>-$10,200</td>
<td>-$10,000</td>
<td>$29,700</td>
<td>$130,300</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>150,500</td>
<td>-</td>
<td>-10,200</td>
<td>-10,000</td>
<td>-20,200</td>
<td>130,300</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>150,000</td>
<td>-9,500</td>
<td>-10,200</td>
<td>-19,700</td>
<td>-30,200</td>
<td>130,300</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>140,300</td>
<td>-</td>
<td>-</td>
<td>-10,000</td>
<td>-20,000</td>
<td>130,300</td>
<td></td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Date of Previous Sale</th>
<th>Price at Previous Sale (SP1)</th>
<th>Price Today (SP2)</th>
<th>Change per Month (SP2 - SP1) / mos.</th>
<th>Monthly Rate of Increase (% of SP1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12 mos. ago</td>
<td>$191,000</td>
<td>$197,900</td>
<td>$575</td>
<td>0.30 %</td>
</tr>
<tr>
<td>B</td>
<td>18 mos. ago</td>
<td>158,600</td>
<td>$167,000</td>
<td>$467</td>
<td>0.29 %</td>
</tr>
<tr>
<td>C</td>
<td>24 mos. ago</td>
<td>148,900</td>
<td>$162,000</td>
<td>$546</td>
<td>0.37 %</td>
</tr>
</tbody>
</table>

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

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

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:**
  \[ \text{GIM} = \frac{\text{Sales Price}}{\text{Gross Income}} \]

- Apply GIM to the subject property

- Example 10-1: Recent sales of similar property

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Price</td>
<td>$600,000</td>
<td>$750,000</td>
<td>$450,000</td>
</tr>
<tr>
<td>Gross Income</td>
<td>$100,000</td>
<td>$128,000</td>
<td>$74,000</td>
</tr>
<tr>
<td>GIM</td>
<td>6x</td>
<td>5.86x</td>
<td>6.08x</td>
</tr>
</tbody>
</table>

**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**

- 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

**Capitalization Rate Method (Direct Capitalization):**

\[ \text{Value} = \frac{\text{NOI}}{\text{R}} \]

- Example 10-2: Recent similar property sales

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Price</td>
<td>$368,500</td>
<td>$425,000</td>
<td>$310,000</td>
<td>$500,000</td>
</tr>
<tr>
<td>NOI</td>
<td>$50,000</td>
<td>$56,100</td>
<td>$42,700</td>
<td>$68,600</td>
</tr>
<tr>
<td>R</td>
<td>.1357</td>
<td>.1320</td>
<td>.1377</td>
<td>.1372</td>
</tr>
</tbody>
</table>

**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?

- If the subject NOI = $58,000, the value estimate could be
  \[ \frac{\text{Value}}{\text{R}} \]
  - $58\,000 < V < $58\,000
  \[ \frac{\text{.1377}}{\text{.1320}} \]
  - $421,205 < V < $439,194

- 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 \( R_f \)
    - \( R_f = (r - g) \) \( \Rightarrow \) constant positive growth
    - \( R_f = (r) \) \( \Rightarrow \) growth is zero
    - \( R_f = (r + g) \) \( \Rightarrow \) growth is a decay rate

Income Approach
- Estimating reversion value
  - Method 2: Estimate \( R_f \) 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:
  - NOI₁ = $200,000
  - NOI₂ = $208,000
  - NOI₃ = $216,320
  - NOI₄ = $220,646
  - NOI₅ = $225,059

Constant 1% growth begins

Income Approach

- Example 10-3:

\[
\text{Terminal Value}_t = \frac{\text{NOI}_t}{r - g} = \frac{\$227,310}{.13 - .01} = \$1,894,250
\]

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