



# Introduction to Ratio Studies

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# Introduction to Ratio Studies

- Introduction to Ratio Studies
  - Why are ratio studies important?
  - What is a ratio study?
  - How do I conduct a ratio study?



# Why Are Ratio Studies Important?



# Importance of Ratio Studies

- Market Value-In-Use standard
  - Required by Indiana law
  - Sale price of property:
    - On open market
    - For same use
    - With willing buyer and seller
- Ratio studies confirm market value-in-use assessment of real property



# What is a Ratio Study?



# Ratio Study

- Compares assessments to sale prices of similar properties
- **Sales ratio** shows how close properties' assessment is to its sales price
- Sales ratios are analyzed to see if properties are assessed at market value-in-use



# The Sales Ratio

- A properties' **Assessed Value** divided by its **Sale Price**

Assessed Value

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Sales Price



# The Sales Ratio

- Shows whether property is assessed correctly:
  - Less than 1: Over-assessed
  - Greater than 1: Under-assessed
  - Exactly 1: Assessed correctly



# The Sales Ratio

## Example 1



- Assessed Value: \$90,000
- Sale Price: \$100,000
- Ratio: 0.90



# The Sales Ratio

## Example 2



- Assessed Value: \$120,000
- Sale Price: \$100,000
- Ratio: 1.20



# Conducting a Ratio Study



# Conducting a Ratio Study

- Three Steps:
  - Grouping Properties
  - Choosing Sales
  - Analyzing Sales Ratios



# Grouping Properties

- Like properties are grouped into **Neighborhoods**
- A **neighborhood** is a collection of like properties:
  - Similar features
  - Same market behavior
  - Often near one another
- Examples:
  - Brick ranch houses in a subdivision
  - Downtown fast food restaurants
  - Two-story houses with a lakefront view



# Grouping Properties

- Most properties will already have a neighborhood.
- Neighborhoods typically set at reassessment. . .
- But may be changed any time.



# Choosing Sales

- Sales are from:
  - March 1 of previous year to
  - March 1 of assessment year.
- Example:
  - In 2011, sales are from March 1, 2010 to March 1, 2011.
- Older sales may also be used.



# Choosing Sales

- Some sales may not be suitable for a ratio study:
  - Multi-parcel sales.
  - Non-warranty deeds.
  - Land contracts.
  - Foreclosures.
- All sales should be carefully evaluated.
- Sales should not be excluded without good reason.



# Choosing Sales

The following sales took place in Indiana in 2009:



Microsoft  
e Excel Works



# Analyzing Sales Ratios

- Indiana standards for real property assessment
- Four parts:
  - Level
  - Uniformity
  - Vertical Equity
  - Horizontal Equity



# Analyzing Sales Ratios

## ■ Assessment Level

- Is typical property assessed close to market value-in-use?
- Measure: Median sales ratio
- Standard: Between 0.90 and 1.10 (All properties)



# Analyzing Sales Ratios

## ■ Assessment Uniformity:

- Are other properties assessed close to the typical property?
- Measure: Coefficient of Dispersion (COD)
- Standards: Under 15%: (Res. Improved)  
Under 20%: (Other properties)



# Analyzing Sales Ratios

- Vertical Equity:
  - Are high and low-value properties assessed with the same standard?
  - Measure: Price Related Differential (PRD)
  - Standard: Between 0.98 and 1.03 (All properties).



# Analyzing Sales Ratios

- Horizontal Equity:
  - Are sold and unsold properties assessed with the same standard?
  - Measure: Mann-Whitney test
  - Standard: At least 95% neighborhoods must pass



## It's All Too Much!





# Questions?



# Contact The Department

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