

# Review for Midterm #1

RE420: URBAN AND REGIONAL ECONOMICS

# Midterm #1

- Exam format
  - 15 Questions, 100 points total
    - Multiple Choice Questions (12 questions, 60 points total)
      - Some questions require selecting only one correct answer
      - Others require selecting all that apply
    - Extended-Response Questions (3 questions, 40 points total)
      - In-depth analysis and problem-solving required
  - A bit of basic math may be involved
    - **Calculators will be allowed**

# Midterm #1

- Major source for the midterm study is the **Lecture Notes**
  - Lecture Notes 2 - 9
- Videos, Stata practice, additional/optional readings, or guest lecture notes won't be on the exam
  - Their purpose is to support your learning, not to test!
- Additional Office Hour: 10.11 (Friday), 1:00 – 2:30 PM @my office

# Lecture 2: Agglomeration and Cities

- Definition/concept of agglomeration economies
- Identifying agglomeration economies or diseconomies from a given situation
- 3 types of agglomeration economies with example cases
- Examples of government interventions to mitigate agglomeration diseconomies

# Lecture 3: Demand and Supply for Housing

- For a given situation (practice test on Canvas), you should be able to tell:
  - The movement along the curve vs. the shift of the curve
  - Shift of demand curve vs. shift of supply curve
  - Direction of the shift
- Housing supply elasticity and price responses after a demand shock
- Factors that influence housing supply elasticity in a city

# Lecture 4: Housing Durability

- Housing supply curve after considering the durability of housing
- Compounding challenges that shrinking cities face

# Lecture 5: Monocentric City

- Regularities in urban structure the Monocentric City explains
- Basic assumptions of the Monocentric City Model
- Derivation of the relationship between  $x$  and  $p$  in the “Simplified Analysis”
- Calculating the actual value of  $p$  when specific numbers are provided
- Definition/concept of spatial equilibrium

# Lecture 6: User Cost Model

- Derivation of the property value ( $V$ ) using the User Cost Model
- Impact of changes in mortgage rate, property tax, and depreciation rate on home valuations
- Limitation of the User Cost Model



# Lecture 7: Hedonic Approach

- Understand the concept of hedonic approach
- How to interpret the estimated results, such as:

*House Value (\$)*

$$\begin{aligned} &= 36 + 5.2 \times \text{square footage} + 0.89 \times \text{lot size} + 800 \times \# \text{bathrooms} + 580 \\ &\times \text{family room} + 830 \times \text{fireplace} + 790 \times \text{one-car garage} + 1,270 \times \text{two} \\ &\text{car garage} - 5.2 \times \text{average room size} - 0.07 \times \text{age} \times \text{square footage} \\ &+ \text{additional attribute effect} \end{aligned}$$

- Limitation of the approach

# Lecture 8: Sustainable Development

- The concept of UN's 2030 sustainable development goals (SDG)
- 3 core objectives of the sustainable development

# Lecture 9: House Price Index

- The concept of the house price index
- Different methodologies of house price index
- Advantages and limitations of each methodology

# Practice Question

1. (5 pts) Which of the following most inaccurately describes housing valuation models?  
(Please select one)

- (a) The User Cost Model derives housing value from the idea that the user cost for homeowners should be balanced with the user cost for renters.
- (b) The Hedonic Pricing Model derives housing value from the concept that a dwelling is a bundle of attributes, and housing value is determined by these attributes.
- (c) An advantage of the User Cost Model is that property values can be estimated even for properties where rent values are not observed.
- (d) A limitation of the Hedonic Pricing Model is that people's preferences for housing attributes change over time.

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# Practice Question

2. (5 pts) Which of the following statements regarding housing supply elasticity and demand shocks are correct? (Please select all that apply)
- (a) When there is a positive demand shock, house prices tend to increase more in inelastic housing supply markets than in elastic housing supply markets.
  - (b) When there is a positive demand shock, city populations tend to grow more significantly in inelastic housing supply markets than in elastic housing supply markets.
  - (c) Housing supply elasticity in a city is irrelevant to topography.
  - (d) Housing supply elasticity in a city can be influenced by the strictness of zoning regulations.

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# GOOD LUCK!!