

***Understanding
Urban Growth Patterns***

Real Estate 690
Market Analysis for Real Estate
Dr. Longhofer

1

Why Study Urban Economics?

- Understanding why cities exist and how cities and regions develop over time is essential to identifying long-term trends in real estate markets

2

Why Are Cities Where They Are?

- Transportation factors
 - Rivers, rail, highways
 - Breaks in transportation
- Natural resources
- Climate and amenities
 - Suitability for particular industries
 - Desirability of location
- Labor force
- Created environment & leadership
- Educational facilities
- Industry economies of scale
- Agglomeration economies

3

Economic Base Analysis

- Industries in a city or region can be characterized by whether they serve the local population or distant communities
 - *Basic activities* (export activities) are those that produce goods or services for those outside the community
 - *Nonbasic activities* (population serving activities) produce goods and services for use within the local community

4

Economic Base Analysis

- In principle, increases in basic employment will have a *multiplier effect* within a community
 - For example, an increase of 1,000 aircraft manufacturing jobs in Wichita may increase total area employment by 2,000 jobs
- The size of the multiplier depends on the amount of “leakage” from the local economy
 - Materials required to manufacture aircraft parts represent leakages from this basic activity

5

Economic Base Analysis

- Growth in basic industries will have a direct impact on the demand for various types of real estate assets and the demand for other goods and services in the community
- In contrast, changes in nonbasic employment have less spillover impact on the rest of the community
 - Shifting dollars rather than bringing in new dollars to the community (e.g., new restaurants)

6

Location Quotients

- One way to identify basic activities is to calculate the *location quotient* for different industries
- A location quotient greater than one suggests that the industry is basic

7

Price-distance Relationships

- A key question for investors and market analysts is how prices and rents are determined in an urban area
 - Closely related is what determines the highest -and-best use of a parcel of land
- The central force creating cities is the demand for proximity – it is the “economic gravity” that holds a city together
 - A simple economic model shows how this gravity helps determine rents, values, and land-use

8

Deriving Bid-Rent Curves

- Consider a simple, two-dimensional city that has 318 households that work in the CBD and must commute to and from work each day (20 work days per month)
 - Commuting results in a loss of time for households; the opportunity cost of this time is the household’s wage rate
- Households live on lots that are 100 feet wide spreading out in both directions from the CBD; other than their distance from the CBD, each lot is identical

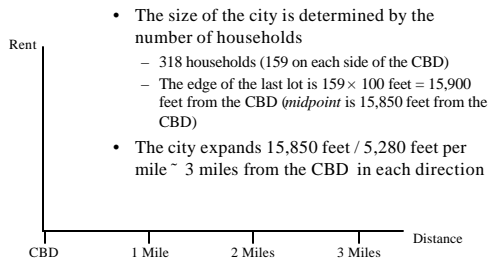
9

Deriving Bid-Rent Curves

- The cost of commuting will determine how much households will be willing to pay for lots that are close to the CBD
 - Each household earns \$20 per hour and can commute 20 miles per hour
 - The cost of commuting is therefore \$1 per mile per day (\$20 per hour ÷ 20 miles per hour)
 - The monthly cost of commuting is \$20 per mile (\$1 per mile × 20 days per month)

10

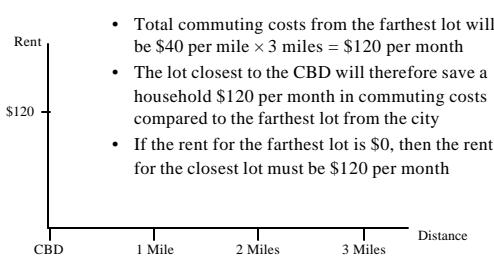
Bid-Rent Curves



- The size of the city is determined by the number of households
 - 318 households (159 on each side of the CBD)
 - The edge of the last lot is 159 × 100 feet = 15,900 feet from the CBD (*midpoint* is 15,850 feet from the CBD)
- The city expands 15,850 feet / 5,280 feet per mile ≈ 3 miles from the CBD in each direction

11

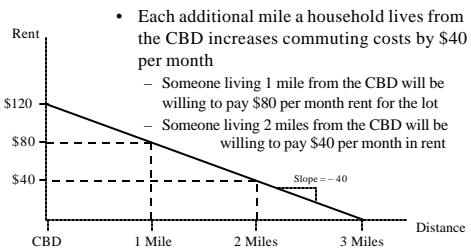
Bid-Rent Curves



- Total commuting costs from the farthest lot will be \$40 per mile × 3 miles = \$120 per month
- The lot closest to the CBD will therefore save a household \$120 per month in commuting costs compared to the farthest lot from the city
- If the rent for the farthest lot is \$0, then the rent for the closest lot must be \$120 per month

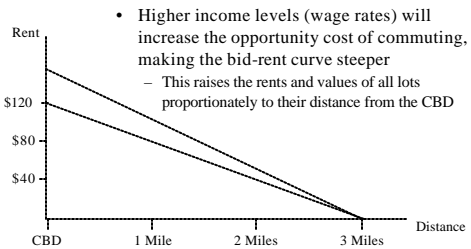
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Bid-Rent Curves



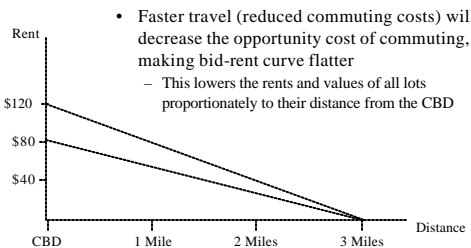
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Factors Affecting Land Values



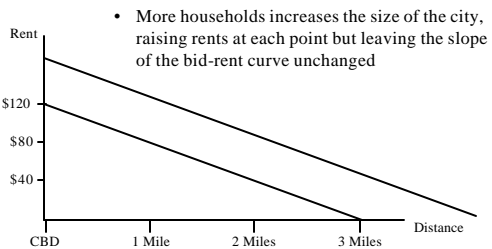
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Factors Affecting Land Values



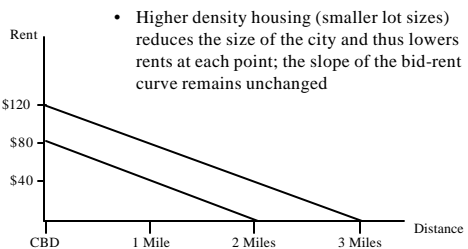
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Factors Affecting Land Values



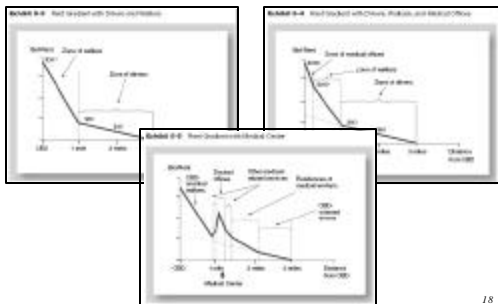
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Factors Affecting Land Values



17

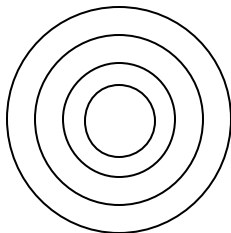
Bid-Rent Curves



18

How Do Cities Grow?

- Concentric Circle Model

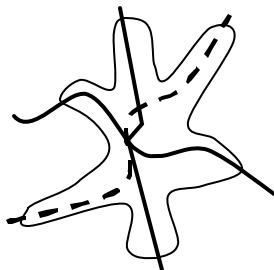


Central business district
Slums, light manufacturing, luxury apartments, entertainments
Lower-income housing
Higher-income housing

19

How Do Cities Grow?

- Axial Model

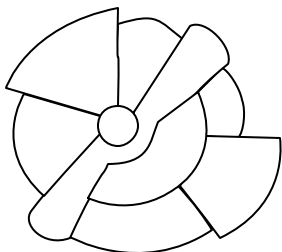


--- Rail Line
 — River
 — Highway

20

How Do Cities Grow?

- Sector Model



Central business district
Lower-income housing
Middle-income housing
Upper-income Housing
Industrial

21

How Do Cities Grow?

- Multiple-Nuclei Model
 - In many cities there is more than one central place
 - Each nucleus represents a location in which commercial and entertainment activities cluster
 - Reduces transportation time and congestion associated with only one central business district

22

Other Factors Affecting Urban Growth

- Geographic factors
- Transportation
 - Public transportation
 - Highways and roads
- Public services
- Public attitude toward development
- Leadership

23
