

Discussion Questions/Exercises

1. Telecommuting refers to a system under which employees work at home for one or more days per week, using personal computers and telecommunications to interact with people in the office. Consider an office firm that must decide whether to locate in the CBD or along a suburban beltway (to be closer to its suburban workforce). Discuss the effects of telecommuting on the relative attractiveness of the CBD.
2. Consider a city in which office employment has been steadily shifting from the city center to suburban locations along beltways. Suppose that the city improves its mass-transit system, decreasing the monetary and time costs of radial travel. Assume that the improvement in the transit system does not affect the spatial distribution of residents. Will the improvement in the system speed up or slow down the movement of office firms to the suburbs?
3. Consider a city where firms are located in the CBD or along a circumferential highway. Congestion is not a problem; everyone travels at the legal speed limit. Suppose that in an attempt to internalize the pollution externalities from auto use, the city imposes a \$2 per gallon tax on gasoline. Assume that (i) everyone continues to drive him or herself to work and (ii) the tax does not affect the spatial distribution of residences. Will the gas tax increase, decrease, or not affect the fraction of employment in the CBD?
4. One of the major conundrums of urban spatial analysis is the occurrence of tall residential facilities for the elderly (RFEs) in areas of the city where other residents occupy low-density housing (single-family homes or low-rise apartment buildings). The RFEs defy the conventional logic that building heights depend on the price of land. Provide an explanation for the occurrence of relatively tall RFEs.
5. Consider a city that is expected to grow in the following fashion: Between 2015 and 2020, relatively wealthy households will move to the city; between 2020 and 2025, relatively poor households will move to the city. A developer has asked the city planning department to allow “leapfrog” development. Specifically, the developer wants to develop a site eight miles from the city center at a time when there is plenty of vacant land within an eight-mile radius of the city center.
  - a. Why does the developer want to engage in leapfrog development?
  - b. Is leapfrog development efficient?
6. Some retailers locate along major streets, forming commercial strips. Why don't these retailers locate in the city center or in a suburban mall?

7. In the analysis of the building-permit policy (Figure 9-5), the decrease in the number of building permits (from 120 to 80) increased the equilibrium price of housing but decreased the price of land. Critically appraise the following statement from a landowner who recently read Chapter 6 of *Urban Economics*: “According to the leftover principle, the landowner gets the leftover (the excess of total revenue over total cost), so an increase in the price of housing should increase—not decrease—the price of land. Either the leftover principle is wrong or the analysis of the permit policy is wrong.”
8. Consider a situation where for a polluting factory, the cost of polluting (due to its being taxed) decreases moving out from the residential area of a city, while the labor costs rise (so total combined cost to the firm first decreases, then increases). Show the effects, using a graph of each of the following changes on the optimum location of the factory:
  - a. The unit commuting cost per mile increases.
  - b. The tax increases on pollution
  - c. The polluting firm discovers a new method of pollution abatement that cuts abatement cost in half.
9. Suppose that a city eliminates all zoning. What types of retailers would you expect to move from the retail zones to the residential zones?
10. Suppose that all local taxes are eliminated and all funding for local public services comes from state governments. Would you expect any changes in local zoning practices?
11. In a certain city, all new housing is built on the city’s edge (10 miles from the city center). The city institutes the following policy: Every new house will be subject to a \$2000 impact fee/development tax. The fee is paid by the firm that builds the house.
  - a. Who will actually pay the development tax?
  - b. Will the development tax affect the radius of the city? Explain, using a graph.
  - c. Would you expect the implementation of the development tax to change the city’s zoning practices?
12. Suppose that a city has recently proposed the rezoning of a 10-acre parcel of land from low-density use (1 dwelling per acre) to high-density use (20 dwellings per acre).
  - a. Who will support the zoning change? Who will oppose it?
  - b. Describe a policy under which all parties will agree to the rezoning if in fact the rezoning is efficient.
13. Suppose a city provides open space by purchasing land from landowners, not by zoning land for open space. If someone suggests that the city buy another plot of land for open space, the mayor appears on local television and solicits contributions to the city’s open-space fund. The city will purchase the land for open space if the total contributions exceed the market price of the land. If the contributions do not cover the cost of the land, the city will not buy the land and will return the contributions to the individual donors. Will the city provide the optimum amount of open space?
14. Comment on the following statement: “The courts should not be involved in overseeing local zoning practice. Such matters are the responsibility of the legislative branch of government. Let democracy work.”