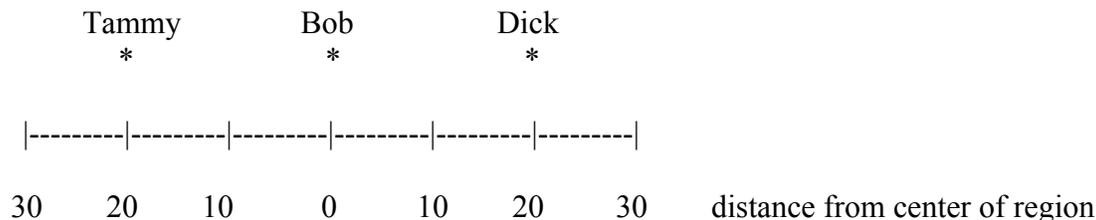


Discussion Questions/Exercises

1. Tammy, Bob, and Dick have the same production costs and locate each widget store as shown in the diagram below. Round-trip travel costs are 50 cents per mile, leading each store to have a market area with a ten-mile radius.



Now assume that Bob discovers a new way of marketing widgets that cuts his production cost (and store price) from \$6 to \$3. Tammy and Dick continue to sell widgets at \$6.

- a. How does the decrease in production cost affect Bob's market area?
  - b. What is the net price at the border between Bob's and Tammy's market area?
  - c. Will each household patronize the firm closest to its residence?
2. Consider the market area of food stores in a region described by the following assumptions:
- i) The per capita demand for food is 30 units.
  - ii) Population density is 40 people per square mile.
  - iii) The land area of the region is 100 square miles.
  - iv) The output of the typical food store is 6000 units.
- a. How many food stores will there be in the region?
  - b. How large is the market area of the typical food store?
3. Consider the market areas of hardware stores in two independent regions, Low and High. The average production cost (APC) curves of the two regions reach their minimum points at the same level of output (1000 units), but because Low has lower input costs, the minimum point of its APC curve has a lower average cost (its average cost of 1000 units is \$1 instead of \$2). Will the market area in Low be larger, smaller, or the same as the market area in High?
4. Consider a regional economy with two cities. The two cities have the same population, but the average household income in city H exceeds that in city L. The residents of H and L consume Y. The characteristics of Y are as follows:
- i) The APC curve is U-shaped.
  - ii) The APC curve is the same at all locations.
  - iii) Y is a standardized product, with no close substitutes or complements.
  - iv) All households have the same tastes for Y.
  - v) Y is an inferior good.
- a. How will the size of the average market area of Y in city H compare to the size of the average market area in city L?
  - b. How would your response to a differ if the APC curve were a horizontal line?

5. Suppose you intend to purchase the franchise rights for a pizza parlor. The franchiser has divided your region into two areas of equal size: H is a high-income area, and L is a low-income area. Suppose that the income elasticity of demand for pizza is zero and the income elasticity of demand for land is 1. Your objective is to maximize the quantity of pizzas sold.
  - a. Which of the two franchises should you choose?
  - b. How would your response to **a** change if the income elasticity of demand for pizza is 1.5?
6. Consider the city of Vaudeville, where initially all video consumers travel to video outlets to rent videos. Suppose that when the video outlets offer home delivery, all video consumers switch to home delivery.
  - a. Under what circumstances is the switch to home delivery rational?
  - b. In what type of cities would you expect home delivery to be efficient?
7. In 1930, most rural children walked to school. By 1980, most of them rode school buses. Would you expect the average “market area” of rural schools to increase or decrease as a result of the school bus?
8. The introduction of parcel post decreased transportation costs and increased the market area of the typical firm. Can you think of any good for which a decrease in transportation costs is likely to decrease the market area?
9. Consider a city with a uniform population distribution where every household consumes the same number of video rentals. The city is two miles long and two miles wide. The mayor recently stated her policy for the location of video rental outlets: “A video outlet reaches the minimum point of its average production cost curve at an output of 1000 units. Since the total demand for video rentals is 4000 units, we should have four video outlets. Since the distribution of population is uniform, the video outlets should be distributed uniformly throughout the city, with every outlet at the center of a one-square-mile market area.” Comment on the mayor’s policy. Will it lead to an efficient distribution of video outlets?
10. In the city of Zone, the actual number of grocery stores is less than the number that would occur in the absence of zoning. A recent survey of grocery prices suggests that Zone consumers pay less for groceries than people in a similar city without zoning.
  - a. Why would the prices be lower in Zone?
  - b. Does the zoning policy make the residents of Zone better or worse off?
11. Why are poor areas of cities typically served by small grocery stores, not by large grocery-store chains?
12. A regional planner recently made the following statement: “If my assumptions are correct, all cities in this region will eventually be identical. They will be the same size and will sell the same set of goods.” Assuming that his reasoning is correct, what is his key assumption? Is this assumption realistic?
13. Some people claim that state capitals (e.g., Sacramento, California; Salem, Oregon; Olympia, Washington) are boring cities. Specifically, it is claimed that these cities have fewer goods than one finds in other cities of equal size. Use central place theory to explain why they might be considered boring.