

MICROECONOMIC PRINCIPLES
FALL 2001
HOMEWORK TWO

DUE: SEPTEMBER 26, 2001

1. Suppose the demand for rental cars is

$Q_{us} = 500 - 2P$ in the United States and $Q_{can} = 800 - 8P$ in Canada

and the supply curve is

$Q_s = 100 + 6P$

where P is the rental price per day.

- a. Find the equilibrium price and quantity in the United States and in Canada. Sketch a graph of showing both demands and supply.
- b. Use the midpoint (or arc) elasticity formula to calculate the elasticity of demand in the U.S. and in Canada for a price change from \$50 to \$40. In which market is demand more elastic?
- c. Suppose the governments of both countries set a price ceiling of \$40, where will the shortage of rental cars be greatest?

2. Many colleges rent dormitory space at prices below the equilibrium prices. As a result, dorms often cannot accommodate all the students who want to live in them. Do you think that colleges should raise dormitory rental prices to the equilibrium levels? If not, how should they ration space? How would raising the prices of dorms affect off-campus rents?

(From Stockman)

3. Suppose that the demand curve is

$Q_d = 30 - P$

and the supply curve is

$$Q_s = 2P$$

- a. Calculate the equilibrium price and quantity.
 - b. Show the equilibrium on the graph.
 - c. Calculate consumer surplus. Your answer should be a number. (Hint: Look at your graph and use the formula for the area of a triangle.)
 - d. Calculate producer surplus. Your answer should be a number.
4. The U.S Department of Labor's website provides details on the minimum wage: www.dol.gov.
- a. What states have minimum wages higher than the federal minimum?
 - b. A priori, what would you predict about unemployment rates in the states with higher minimum wages as compared with unemployment rates in adjacent states? (In theory, where should unemployment be higher -- California or Nevada?)
 - c. Go to the website for the Bureau of Labor Statistics -- www.bls.gov and find the unemployment rates for the states with minimum wages higher than the federal minimum wages and their neighboring states. Discuss your findings.
5. Figure 5 describes the demand and supply for air travel between Lilliput and Fantasyland. The government of Lilliput, concerned about a decline in passenger travel, proposes to give each passenger a cash voucher for \$50.
- a. Use the graph to illustrate the effect of this subsidy on the number of air passengers, on the price paid for air travel by the passengers and on the price received by the airlines.
 - b. Show the impact of the subsidy on consumer and producer surplus.
 - c. Does the subsidy create a deadweight social loss?