ECON 310
Nazarov
Problem set (Chapter 9)

1. The market demand and supply functions for Easton Redline slow-pitch softball bats are:

$$Q_D = 12 - 0.04P$$

$$Q_S = 2 + 0.01P$$

a. Calculate the equilibrium quantity, price and point elasticity of demand in equilibrium.

b. Calculate consumer surplus.

Suppose the Easton bats are taxed $25 per unit.

c. Calculate the revenues generated by the tax.

d. Calculate the loss in consumer surplus.

e. What percentage of the burden of the tax is paid for by consumers?

2. The elected officials in a west coast university town are concerned about the "exploitative" rents being charged to college students. The town council is contemplating the imposition of a $350 per month rent ceiling on apartments in the city. An economist at the university estimates the demand and supply curves as:

$$Q_D = 5600 - 8P$$

$$Q_S = 500 + 4P$$

where P - monthly rent, and Q - number of apartments available for rent. For purposes of this analysis, apartments can be treated as identical.

a. Calculate the equilibrium price and quantity that would prevail without the price ceiling. Calculate producer and consumer surplus at this equilibrium (sketch a diagram showing both).

b. What quantity will eventually be available if the rent ceiling is imposed? Calculate any gains or losses in consumer and/or producer surplus.

c. Does the proposed rent ceiling result in net welfare gains? Would you advise the town council to implement the policy?

3. The market for semiskilled labor can be represented by the following supply and demand curves:

$$L_D = 32000 - 4000W$$

$$L_S = -8000 + 6000W$$

where L = millions of person hours per year, and W = the wage in dollars per hour.

a. Calculate the equilibrium price and quantity that would exist under a free market. What impact does a minimum wage of $3.35 per hour have on the market?

b. The government is contemplating an increase in the minimum wage to $5.00 per hour. Calculate the impact of the new minimum wage on the quantity of labor supplied and demanded.

c. Calculate a net change in producer surplus (laborers' surplus) before and after the proposed change.

d. Is the policy efficient from an economist's viewpoint?

4. The supply and demand curves for corn are as follows:

$$Q_D = 3,750 - 725P$$

$$Q_S = 920 + 690P$$

where Q = millions of bushels and P = price per bushel.

a. Calculate the equilibrium price and quantity that would prevail in the free market.

b. The government has imposed a $2.50 per bushel support price. How much corn will the government be forced to purchase?

c. Calculate the loss in total surplus that would occur under the support program.

5. The market for all-leather men's shoes is served by both domestic (U.S.) and foreign (F) producers. The domestic producers have been complaining that foreign producers are dumping shoes onto the U.S. market. As a result, Congress is very close to enacting a policy that would completely prohibit sales by foreign manufacturers of leather shoes in the U.S. market. The demand curve and relevant supply curves for the leather shoe market are as follows:

$$Q_D = 50,000 - 500P$$

$$Q_{US} = 6000 + 150P$$

$$Q_F = 2000 + 50P$$

where Q = thousands of pairs of shoes per year, and P = price per pair.

a. Currently there are no restrictions covering all-leather men's shoes. What are the current equilibrium values?

b. Calculate the price and quantity that would prevail if the proposed policy is enacted.

c. Sketch a diagram that analyzes the economic welfare implications of the proposed policy.

Let assume that Congress decides to impose a $2 per unit import tariff on shoes.

d. Calculate the change in total surplus as compared with the free trade.