Microeconomics for Public Policy I
Fall 2020

Problem Set 2

If you are working from the second edition of the textbook, these problems will not always be the same. Just in case, I have written all problems out below in their entirety.

1. Suppose that market for hamburgers was in equilibrium, with a supply curve of $Q^S = 2000P - 10000$ and a demand curve of $Q^D = 20000 - 1000P$. Responding to populist citizen pressure, the government puts a price ceiling of $8 on hamburgers.

   (a) In market equilibrium, before the ceiling, find

      (a) equilibrium price

      (b) producer surplus

      (c) consumer surplus

   (b) After the price ceiling, find

      (a) new quantity

      (b) producer surplus

      (c) consumer surplus

      (d) transfer

      (e) deadweight loss

      (f) deadweight loss as a share of the transfer (from either producers to consumers or vice-versa)

   (c) Up until now, we assumed that all hamburgers were created equal, and it is self-evident that they are not. If there is a variety of hamburger quality, which hamburger sellers will be the most harmed by this policy?

2. GLS Chapter 3, Question 3

The annual demand for full-spectrum LED light bulbs in Fairbanks, Alaska, is estimated to be $Q^D = 20,000 - 1000P$. The supply is estimated to be $Q^S = -12,000 + 3,000P$.

   (a) Find the equilibrium price and quantity of LED light bulbs in Fairbanks, Alaska.

   (b) Calculate consumer and producer surplus at the equilibrium price.

   (c) What is the total surplus created in the market for LED light bulbs?

(d) (my addition) Would consumers get more surplus if the price were $6 and the quantity were unchanged?

3. GLS, Question 13

Noni is a tropical fruit grown in Hawaii and widely marketed as an herbal cure for various diseases. The market for Noni fruit is depicted in the graph below.
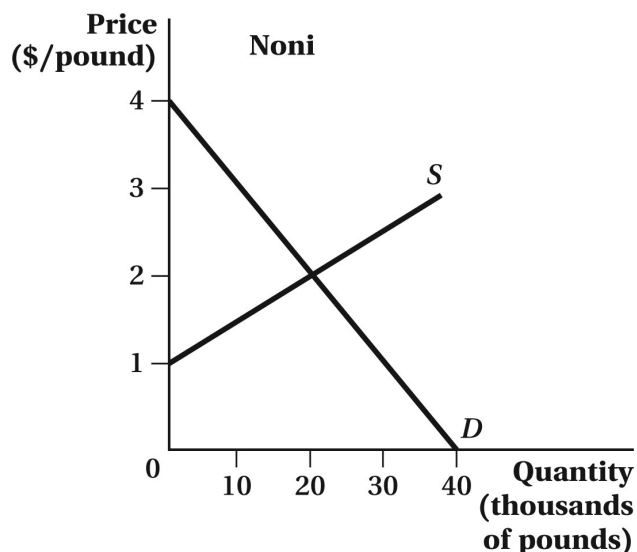
Concerned that Noni fruit may be habit forming and produce adverse side effects, the US Department of Agriculture and the Food and Drug Administration decide to reduce the quantity of Noni available by restriction production to 10,000 pounds monthly.

(a) Alter the supply curve to show the impact of the quantity regulation on the market for Noni. Draw the supply curve into the picture; you don't need to write the equation.

(b) What will the market price of Noni be after the regulation goes into effect? (Hint: you can use the picture to find the equation for the demand curve.)

(c) What will happen to consumer surplus as a result of the regulation? (Exact numbers not needed – does it increase or decrease?)

(d) "We, the producers of Noni fruit, stand united against these intrusive and unnecessary quantity restrictions. Until the dangers of Noni fruit are fully documented, we will fight for the freedom to product all the Noni we want!" Give this public proclamation, do you expect Noni growers to fight hard against these regulations?

4. Price regulations

Find a specific example of a price ceiling or floor – not one from class or from the text-book. Roughly, what was the impact of this regulation on quantity supplied and quantity demanded?