Econ 101 Discussion Section-Handout 5

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1   Review

SUPER IMPORTANT: MIDTERM OCT 7

Important Key Concepts of the week:

- Public policy : The government can change the producer surplus or consumer surplus to benefit one specific group.

  - Price floor: The government wants to help the producers
  - Price Ceiling: The government helps the consumers
  - Quantity floor: is this even a real scenario? energy, vaccines, education.
  - Quantity ceiling: Sometimes it is important to keep consumption low. Health, international trade are always good examples.

- Instruments of public policy

  - Price support programs: To get the desired price the government buys all the excess of supply or sells the excess of demand
  - Price guarantee programs: Te government impose a tax or subsidy in the producers or consumers.
  - Quotas: the government sets the maximum of trade.

- Efficiency:Taking one measure or the other implies different costs

  - Dead weight loss: When the government sets a program there is some surplus that moves from one group to another. Nevertheless in the road there is something that disappears.
  - Remember that sometimes government need to pay costs: storage cost or political cost.

2   Problems: Price Programs and Quota

1. Consider the market for ice-cream in Terrace at UW-Madison. In March, the demand and supply for ice-cream are given by Q= 30-2P and Q=2P, respectively. 1

   (a) Solve for the equilibrium price and quantity in March.
   (b) Suppose in May, the Student Union at UW-Madison persuades the university administration to set a price ceiling at $8. Is this price ceiling effective (binding)? Why?
   (c) Now it is June. As summer approaches, the demand for ice-cream doubles (for each price level). What is the demand equation in June?
   (d) What is the equilibrium price and quantity without initial price ceiling in June?
   (e) Is it effective if the price ceiling at $8 is set again in June? Solve for current consumer surplus and producer surplus.

2. The state of Wisconsin is considering to implement an agricultural policy to prove production in green pepper. Before the policy coming into effective, the market for pepper in Wisconsin is characterized by a demand curve of $P = 200 - Q/10$, and a supply curve of $P = 20 + Q/20$, respectively.

   (a) Find out the equilibrium price and quantity of green pepper

   (b) Suppose the state implements a price support program by imposing a price floor of $100 per unit, which means that the state government would purchase any pepper surplus to ensure the price floor is reached. How many units of pepper would farmers produce? How many units do consumer actually purchase? Then how many units does government have to purchase?

   (c) What are the values of consumer surplus and producer surplus?

   (d) If it costs $5 per unit to store pepper, what is the total cost to the government?

   (e) Assume now, instead of this price support program, the government plans to take price guarantee program with a target price of $100. Farmers are paid the difference between what they receive from consumers and target prices. How many units of pepper would farmers produce? How much would consumers pay?

   (f) What is the government's total cost in implementing this program? Which of these two programs does the government prefer?

3. Summer is a good season for fishing at Lake Mendota, and residents around lake are fond of fish. Suppose that the demand and supply for fish are given as: $P = 100 - Q/10$, and $P = 20 + Q/40$, where P is the unit price of fish, and Q is the unit quantity of fish.

   (a) Find the equilibrium price and quantity.

   (b) Assume recently, an environmentalist successfully make a fish-protecting proposal to city hall so that only licensed fishing is allowed at Lake Mendota. One fishing license qualifies 5 units of fish, and totally 100 licenses are distributed. What is the price that fish supplier receives?

   (c) How many units of fish are provided? What is the deadweight loss caused by license policy?