Recitation 6

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Week 8 (10/16-10/22): Price controls / Taxes and Subsidies

Recap of this week's most important concepts:

- Price controls:

    - Difference between binding / not binding
    - Binding price ceiling creates excess demand / binding price floor creates excess supply
    - Binding price controls generate inefficiency.
    - Impact on CS, PS, TS
    - Efficiency vs. Equity

- Taxes:

    - Wedge between price paid by buyers and price received by sellers: $P_b = P_s + \text{tax}$
    - Tax reduces the quantity sold below the efficient quantity so it is inefficient (underproduction)
    - Identify CS, PS, government revenue from tax, DWL due to tax
    - Tax incidence: falls more heavily on the more inelastic side of the market.
    - Size of deadweight loss increases and government revenue depend on elasticity of demand / supply

- Subsidies:

    - Wedge between price received by sellers and price paid by buyers: $P_s = P_b + \text{subsidy}$
    - Subsidy increases the quantity sold above the efficient quantity so it is inefficient (overproduction)
    - Identify CS, PS, government cost of subsidy, DWL due to subsidy
    - Subsidy incidence: benefits more the more inelastic side of the market.

- Group red: Question 1 Midterm 2 Fall 2019

  Suppose the inverse demand and supply for a drug are given by $P = 60 - Q_d$ and $P = 5Q_s$, respectively. The government imposes a price ceiling of \$30 per unit. Which of the following is true?

  I. The price ceiling is not binding since the equilibrium price without the price ceiling is below \$30.

  II. After the price ceiling is imposed, producers want to sell 24 units fewer than is demanded.

  III. Lowering the price ceiling would result in more units sold.

  IV. After the price ceiling is imposed, consumer surplus will be higher than producer surplus.

  a. Only I.

  b. Only II.

  c. Only III.

  d. Only IV.

  e. I. and II.

  f. II. and III.

  g. II. and IV.

  h. All of the above

  i. None of the above

- Group green: Question 6 Midterm 1 Fall 2010

  Suppose the demand elasticity for HP laptop is exactly one and now the government imposes a tax of \$100 for each laptop. Which of the following is true?

  a. The revenue of HP doesn't change with the tax.

  b. The revenue of HP decreases with the tax.

  c. The revenue of HP increases with the tax.

  d. There is no DWL.

- Group orange: Question 7 Final Fall 2019

  Consider a perfectly competitive market for Christmas trees such that demand is perfectly elastic, and supply is upward sloping. The government plans to provide a per-unit subsidy to Christmas tree producers. Which of the following statements about the effects of this policy cannot be true:

a. The subsidy will create a deadweight loss and will reduce total surplus.

b. The subsidy will only increase consumers' surplus.

c. The subsidy will only increase producers' surplus.

d. The quantity sold in the market will increase.

(If times allows)

1. Consider the market for milk, where demand is $P = 20 - Q_d$ and supply is $P = Q_s$ (P is the price per gallon). Suppose the government considers introducing a price floor in order to increase producer surplus. Which policy would <u>unambiguously</u> help the government to reach their goal?

   a. Set any price floor above $P = 10$

   b. Set the price floor such that consumers demand 5 gallons of milk.

   c. Do not impose a price floor since producer surplus is maximized without a price floor.

   d. Set the price floor at $P = 5$ where quantity demanded will be strictly larger than the equilibrium quantity without a price floor.

2. Suppose the market for gasoline in the United States characterized by a downward sloping linear demand and upward sloping linear supply beginning at the origin. Currently gas costs consumers \$3 per gallon, the U.S. consumes 150 billion gallons, and demand is price-inelastic. In an effort to curb emissions and raise revenue, the government imposes a gasoline tax of \$1 per gallon on producers. Which of the following could be true after the tax?

   a. Consumers now pay \$4 per gallon

   b. The U.S. consumes 50% less gasoline

   c. Consumers now pay \$3.50 per gallon

   d. The U.S. government raises \$130 billion in revenue

The next questions are for your own practice.

3. In the market for pants, supply is $Q_S = 2P$ and demand is $Q_D = 30 - P$. The government decides to introduce a price ceiling of 8 per unit, which of the following statements is true in the short run equilibrium:

I. There is an excess of demand of 6 units.

II. The price of pants, to the consumers, will be lower than before.

III. The total surplus decreases by 12 units.

    a. I and II

    b. II and III

    c. I and III

    d. I, II and III

    e. None is true

4. Suppose the market for video games is characterized by a demand curve $P = 20 - Q_d$, and supply curve $P = Q_s$. The Coalition of Concerned Parents lobbies the government to impose a price floor of \$18. What is the deadweight loss of this policy?

    a. \$0

    b. \$54

    c. \$64

    d. \$65

    e. \$72

5. The market for widgets is characterized by a downward-sloping demand and a perfectly inelastic supply. Suppose the government imposes a binding price ceiling. What can you say about the market outcome?

    a. The outcome will be inefficient because too few widgets will be exchanged

    b. The outcome will be inefficient because too many widgets will be exchanged

    c. The outcome will be inefficient because the price will not be equal to the equilibrium price

    d. The outcome will be inefficient because the producers' share of the surplus will be too small

    e. None of the above.

6. The supply of apartments to rent in University City is perfectly inelastic at $Q = 1,000$. The City of Philadelphia imposes a price ceiling that is \$200 lower than the current equilibrium price. As a result, there is an excess demand of 100 students. How much is the deadweight loss created by this policy?

    a. \$20,000

   b. $10,000

   c. $0

   d. We don't have enough information to compute the DWL.

7. The market for butter is characterized by a downward sloping demand and an upward sloping supply. Suppose the government sets a per unit subsidy. What can you say about the market outcome?

   a. The outcome is inefficient because the quantity produced is too low

   b. The outcome is inefficient because there is excess supply

   c. The outcome is efficient because Consumer Surplus does not change

   d. The outcome is efficient because the price is equal to the equilibrium price

   e. None of the above

8. Which of the following cases will generate no deadweight loss?

   I. A per unit tax when demand is perfectly inelastic

   II. A per unit subsidy when demand is perfectly inelastic

   a. Both create a deadweight loss

   b. Only I.

   c. Only II.

   d. Neither create a deadweight loss

9. Suppose that the perfectly competitive market for apples has a downward sloping demand and upward sloping supply. Suppose that supply is more elastic than demand. If the government provides a per-unit subsidy to apple farmers, which of the following statements must be true?

   I. Quantity of apples consumed increases

   II. Buyers will benefit more from the subsidy than sellers

   III. There will be a deadweight loss

   a. I only

   b. II only

   c. III only

   d. I and II

e. I and III

f. II and III

g. I, II, and III