IB Economics – Competitive Markets: Demand and Supply

1.4: Price Signals and Market Efficiency

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1.4 PRICE SIGNALS AND MARKET EFFICIENCY: STUDENT LEARNING ACTIVITY

Answer the questions that follow.

1. DEFINITIONS

Define the following terms: **[10 marks]**

Allocative efficiency
Ceteris paribus
Competitive market
Equilibrium
Consumer sovereignty
Consumer surplus
Consumer welfare
Disequilibrium
Equilibrium
Equilibrium price
Equilibrium quantity
Excess demand
Excess supply
Industry
Market demand
Market supply
Market supply curve
Opportunity cost
Producer surplus
Producer welfare
Production
Quantity demanded
Quantity supplied
Resources
Shortage
Social surplus
Supply
Surplus
Welfare

1.4: Price Signals and Market Efficiency

2. SHORT-ANSWER QUESTIONS

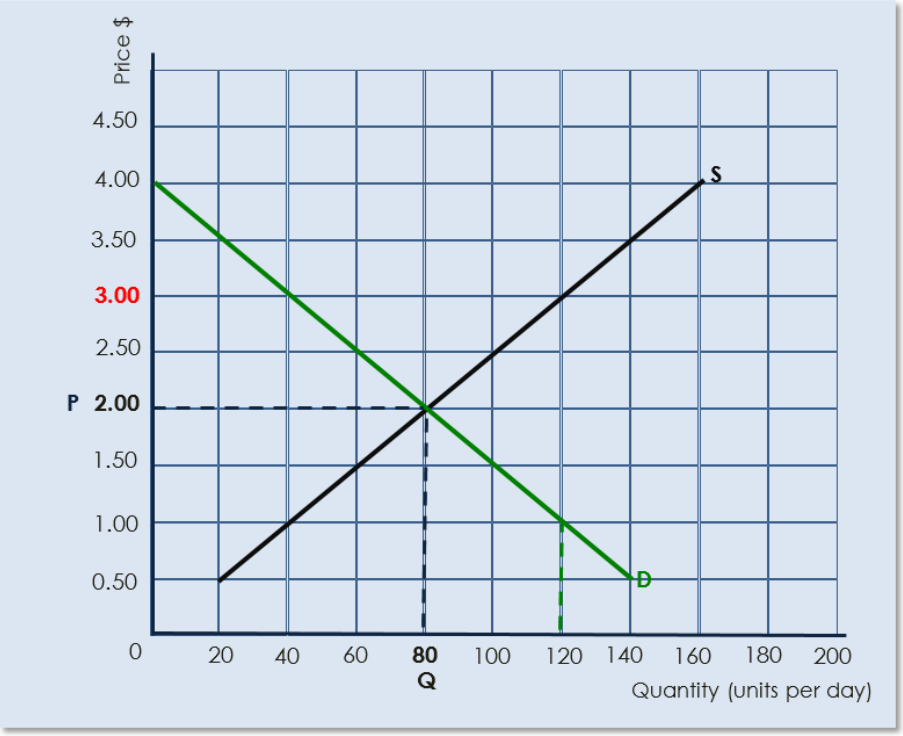

Figure 1

1. Answer the following questions regarding Figure 1 above: **[10 marks]**
   i. Draw in the producer **and** consumer surpluses at equilibrium
   ii. Calculate the value of the producer **and** consumer surpluses at equilibrium
   iii. If firms in the market collude to set prices at $3.00, draw in the new consumer **and** producer surpluses and calculate the value of the social surplus.
   iv. Identify the welfare loss **and** calculate the value of it.

2. Distinguish between 'allocative efficiency' and 'productive efficiency'. **[4 marks]**

3. Explain the meaning of: **[8 marks]**

   i. Consumer surplus
   ii. Producer surplus
   iii. Social surplus
   iv. Maximum social welfare

4. Explain the term 'efficient market'. **[2 marks]**

5. Explain how maximising consumer and producer surpluses in an efficient market informs us about the concepts of allocative **and** productive efficiency. **[4 marks]**

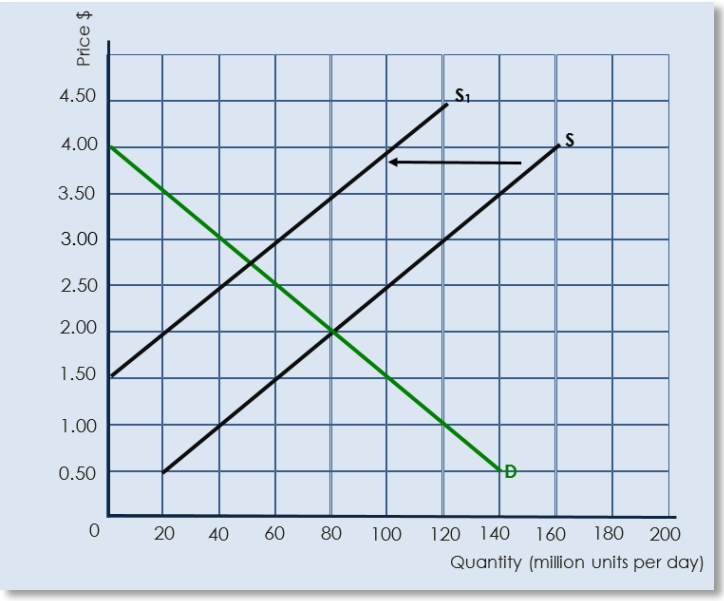

Figure 2

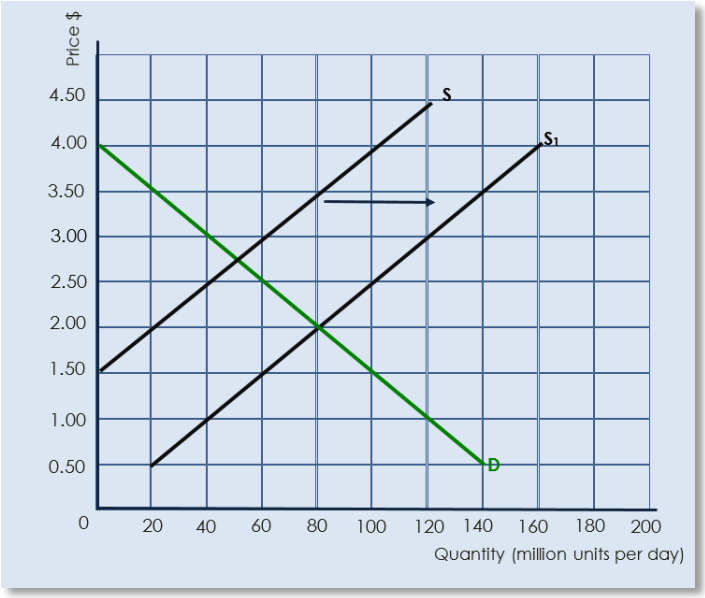

Figure 3

6. For figures 2 **and** 3 above: **[10 marks]**
   i. Draw the change in producer **and** consumer surplus.
   ii. Calculate the change in value of the social surplus.

7. Outline **two** limitations of the concept of maximum social welfare. **[2 marks]**

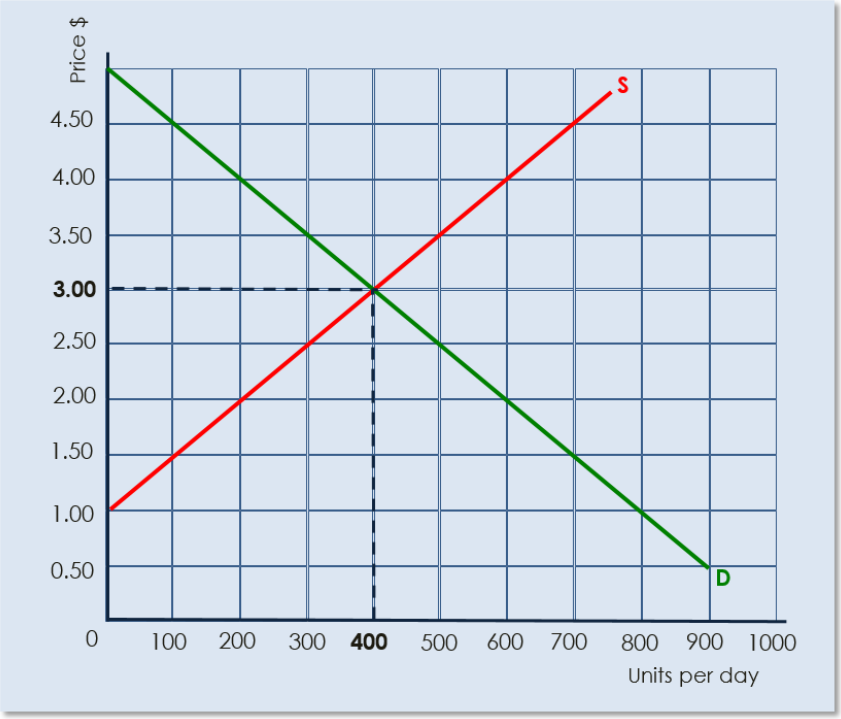

Figure 4

8. Answer the following questions regarding Figure 4 above: **[10 marks]**
   i. Draw in the producer **and** consumer surpluses at equilibrium
   ii. Calculate the value of the producer **and** consumer surpluses at equilibrium
   iii. If the government sets a maximum price of $2.00, draw in the new consumer **and** producer surpluses and calculate the value of the social surplus.
   iv. Identify the welfare loss **and** calculate the value of it.

9. Using the concept of allocative efficiency, explain the importance of market equilibrium in competitive markets. **[4 marks]**

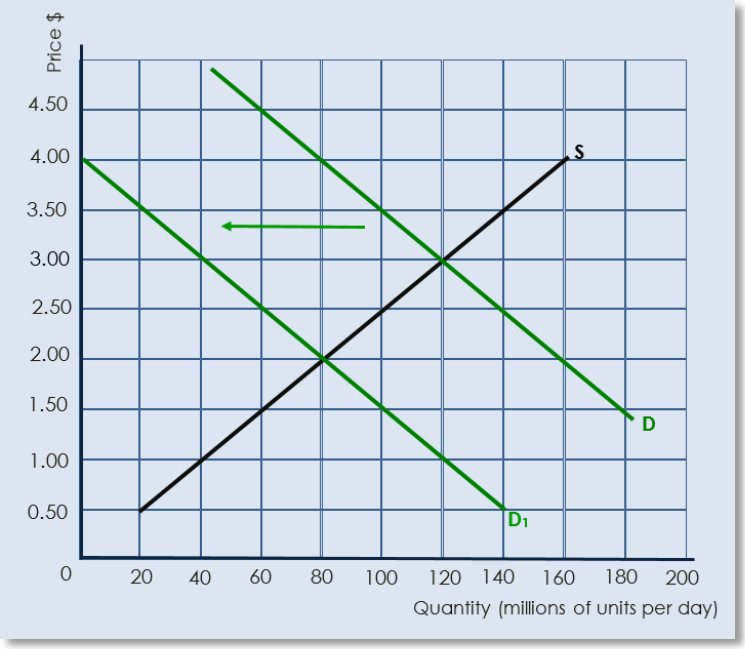

Figure 4

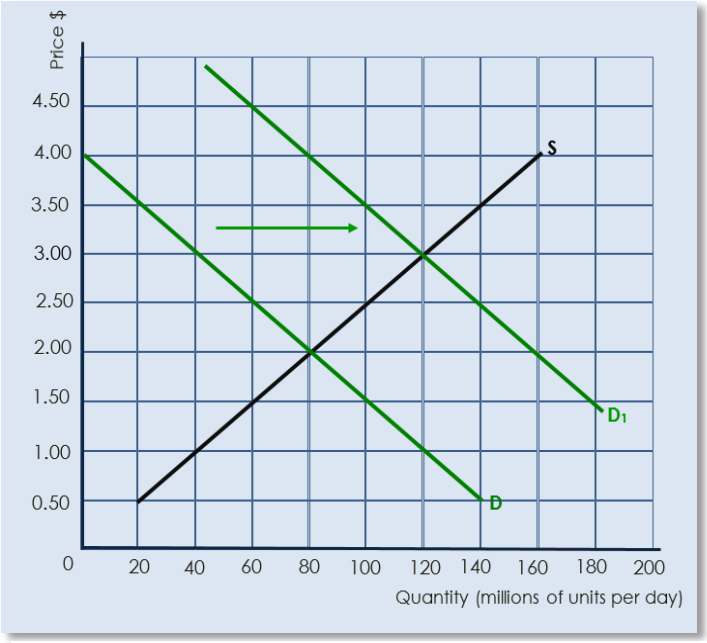

Figure 5

10. For figures 4 **and** 5 above: **[10 marks]**
   i. Draw the change in producer **and** consumer surplus.
   ii. Calculate the change in value of the social surplus.

1.4: Price Signals and Market Efficiency

3. MULTICHOICE QUESTIONS

Choose the best answer to each question. **[40 marks]**

1. Producer surplus is equal to:
   a. The extra utility a producer receives over and above the cost of producing a good
   b. The sum of marginal cost in the market
   c. The additional revenue gained from selling one more unit of output
   d. The difference between the amount that a producer of a good receives and the minimum amount that he or she would be willing to accept for the good

2. The demand curve intersects the price axis at $6 and supply at $1, equilibrium price = $4.00 and quantity = 5 000 units:
   a. The consumer surplus is $6 000
   b. The producer surplus is $6 000
   c. The consumer surplus is $7 500
   d. The producer surplus is $7 500

3. Which of the following statements referring to the price system is not true?
   a. The consumer always has complete sovereignty in the market
   b. Factor mobility is a key requirement for resource re-allocation to occur
   c. High prices and profits tend to attract resources from less productive activities
   d. High prices ration scarce goods and services in accordance with effective demand by consumers

4. The difference between the amount a consumer is willing to pay and the actual amount paid is:
   a. The quantity traded
   b. The consumer surplus
   c. Excess demand
   d. Excess quantity demanded

5. If the government sets the price in the market below equilibrium:
   a. Social surplus is reduced
   b. Producer surplus + consumer surplus is minimised
   c. Consumer surplus is definitely increased
   d. Both producer surplus and consumer surplus is decreased

6. A competitive market will always tend towards:
   a. Being the most allocatively efficient
   b. Maximising consumer surplus
   c. Maximising producer surplus
   d. Ensuring that even the neediest can purchase goods

7. The price system helps to allocate resources efficiently because:
   a. It results in lower rewards to the factors of production when demand for the product increases
   b. It results in higher rewards to the factors of production when demand for the product increases
   c. It will lead to a distribution of output amongst individuals based on the greatest need
   d. The prices of non-renewable resources will tend to rise as the resources are exploited

8. Compared to the initial equilibrium, the new equilibrium after an increase in supply will:
   a. Increase the consumer surplus only
   b. Increase the producer surplus only
   c. Increase the producer and consumer surplus
   d. Decrease the producer surplus only

9. The calculation for the social surplus is:
   a. Marginal benefit – marginal cost
   b. Welfare gain – welfare loss
   c. Net social benefit + net private benefit
   d. Consumer surplus + producer surplus

10. The demand curve intersects the price axis at $10 and supply at $3, equilibrium price = $6.00 and quantity = 10 000 units:
    a. The consumer surplus is $15 000
    b. The producer surplus is $15 000
    c. The consumer surplus is $7 500
    d. The producer surplus is $7 500

11. An economy has reached allocative efficiency if:
    a. It stops responding to technical change
    b. It is unable to produce more output by transferring resources between industries
    c. All negative externalities have been eliminated
    d. The price mechanism is set free to allocate all goods and services

12. Allocative efficiency is when:
    a. Producer and consumer surpluses are maximised
    b. Consumer surplus is greater than the producer surplus
    c. Average costs of production are equal to price
    d. Resources are allocated according to consumers' wants

13. The demand curve intersects the price axis at $6 and supply at $1, equilibrium price = $4.00 and quantity = 5 000 units:
    a. The consumer surplus is $5 000
    b. The producer surplus is $5 000
    c. The consumer surplus is $10 000

d. The producer surplus is $10 000

14. Compared to a competitive market, if the price is set below equilibrium:
    e. Consumer surplus is definitely increased
    f. Both producer surplus and consumer surplus is decreased
    g. Social surplus is reduced
    h. Producer surplus + consumer surplus is minimised

15. Compared to the initial equilibrium, the new equilibrium after a decrease in demand will:
    a. Increase the consumer surplus
    b. Increase the producer surplus
    c. Decrease the consumer surplus only
    d. Decrease the producer surplus

16. If consumers pay a price below that which they are willing and able to pay is termed:
    a. Marginal utility of consumption
    b. Social surplus
    c. Consumer surplus
    d. Marginal benefit

17. In a perfectly competitive market, efficiency is maximised where:
    a. Social surplus is zero
    b. Consumer surplus is greater than producer surplus
    c. The sum of consumer surplus and producer surplus is maximised
    d. Consumer surplus is maximised

18. Excess demand will eventually result in:
    a. Higher prices and a higher consumer surplus
    b. Lower prices and a lower consumer surplus
    c. Higher prices and a lower consumer surplus
    d. Lower prices and a higher consumer surplus

19. At equilibrium:
    a. Only the consumer surplus is maximised
    b. Only the producer surplus is maximised
    c. The social surplus is maximised
    d. The social surplus is minimised

20. Consumer surplus is represented by the area:
    a. Under the market price and above the supply curve
    b. Above the market price and below the demand curve
    c. Above the market price and above the supply curve
    d. Below the market price and below the demand curve

21. Excess supply will eventually result in:
    a. Lower prices and a lower or higher producer surplus
    b. Higher prices and a higher consumer surplus
    c. Higher prices and a lower consumer surplus
    d. Lower prices and a higher producer surplus

22. Compared to a competitive market, if the price is set above equilibrium:
    i. Consumer surplus is increased
    j. Producer surplus is decreased
    k. Social surplus is reduced
    l. Producer surplus + consumer surplus is minimised

23. When a market is allocatively efficient:
    a. The producer surplus is maximised
    b. The consumer surplus is maximised
    c. No one can be made better off
    d. No one can be made better off without making someone else worse off

24. In a competitive market, if equilibrium price increases and equilibrium quantity decreases:
    e. The consumer surplus has definitely increased
    f. The consumer surplus has definitely decreased
    g. The producer surplus has definitely increased
    h. The producer surplus has definitely decreased

25. Compared to the initial equilibrium, the new equilibrium after an decrease in supply will:
    a. Decrease the producer and consumer surplus
    b. Decrease the producer surplus only
    c. Decrease the consumer surplus only
    d. Decrease the producer surplus only

26. The demand curve intersects the price axis at $12 and supply at $2, equilibrium price = $8.00 and quantity = 1 000 units:
    a. The consumer surplus is $2 000
    b. The producer surplus is $2 000
    c. The consumer surplus is $2 500
    d. The producer surplus is $2 500

27. Producer surplus is represented by the area:
    a. Under the market price and above the supply curve
    b. Above the market price and below the demand curve
    c. Above the market price and above the supply curve

d. Below the market price and below the demand curve

28. Consumer surplus is best described as:
    a. The extra profit producers gain from selling extra output to consumers
    b. The difference between the total amount that consumers are willing and able to pay for a good or service and the total amount that they actually do pay
    c. The difference between the total amount that consumers pay and producers receive
    d. The dollar value of the contribution to the social surplus

29. The demand curve intersects the price axis at $10 and supply at $3, equilibrium price = $6.00 and quantity = 10 000 units:
    a. The consumer surplus is $10 000
    b. The producer surplus is $10 000
    c. The consumer surplus is $20 000
    d. The producer surplus is $20 000

30. When prices are prevented from achieving equilibrium, the welfare loss is equal to:
    a. Producer surplus – consumer surplus
    b. Social surplus at equilibrium – consumer surplus
    c. Social surplus – producer surplus at equilibrium
    d. Social surplus at equilibrium – (producer + consumer surplus)

31. When a market is allocatively efficient, which is not true?
    a. No one can be made better off
    b. No one can be made better off without making someone else worse off
    c. The social surplus is maximised
    d. Producer surplus + consumer surplus is maximised

32. The consumer surplus will be at its maximum when price is:
    a. Zero
    b. Equal to marginal cost
    c. At an equilibrium
    d. Equal to marginal benefit

33. Excess supply will eventually result in:
    e. Higher prices and a lower consumer surplus
    f. Lower prices and a higher producer surplus
    g. Higher prices and a higher consumer surplus
    h. Lower prices and a lower or higher producer surplus

34. The demand curve intersects the price axis at $12 and supply at $2, equilibrium price = $8.00 and quantity = 1 000 units:
    a. The consumer surplus is $3 000

b. The producer surplus is $3 000
c. The consumer surplus is $2 500
d. The producer surplus is $2 500

35. Compared to the initial equilibrium, the new equilibrium after an increase in demand will:
    a. Decrease the consumer surplus
    b. Decrease the producer surplus
    c. Increase the consumer surplus only
    d. Increase the producer and consumer surplus

36. In a competitive market, if equilibrium price decreases and equilibrium quantity increases:
    a. The consumer surplus has definitely increased
    b. The consumer surplus has definitely decreased
    c. The producer surplus has definitely increased
    d. The producer surplus has definitely decreased

37. At equilibrium:
    a. Only the consumer surplus is maximised
    b. Only the producer surplus is maximised
    c. The social surplus is minimised
    d. Producer surplus + consumer surplus is maximised

38. Compared to a competitive market, if firms can collude to fix the price above equilibrium:
    a. Consumer surplus is reduced
    b. Producer surplus is increased
    c. Consumer surplus is increased
    d. Producer surplus + consumer surplus is maximised

39. Excess demand will eventually result in:
    a. Higher prices and a lower consumer surplus
    b. Lower prices and a higher consumer surplus
    c. Higher prices and a higher consumer surplus
    d. Lower prices and a lower consumer surplus

40. A competitive market will always tend towards:
    a. Equilibrium
    b. Maximising consumer surplus
    c. Maximising producer surplus
    d. The lowest prices and most efficient use of resources

1.4: Price Signals and Market Efficiency

4. TRUE OR FALSE?

Indicate whether the following statements are true or false. **[15 marks]**

1. Allocative efficiency results in a loss of social surplus.
2. Allocative efficiency occurs when resources are allocated in a way that no one can be made better off without making someone else worse off.
3. Allocative efficiency requires production efficiency, plus what is produced best meets consumers' wants.
4. Allocative efficiency is where all markets are in equilibrium and the sum of consumer and producer surpluses are maximised.
5. Market equilibrium occurs when quantity demanded does not equal quantity supplied.
6. A market will not tend toward equilibrium.
7. A shortage or surplus is not possible at market equilibrium.
8. A market must be a place where buyers and sellers meet to sell and buy goods and services.
9. Whenever buyers and sellers interact to exchange goods and services it is a market.
10. A market price above equilibrium acts as a signal for businesses to increase profits and maximise profits.
11. If the price of a good or a service is above equilibrium there will be excess demand.
12. Disequilibrium occurs where quantity supplies equals quantity demanded.
13. If the price of a good or a service is below equilibrium there will be excess supply.
14. Where quantity supplied equals quantity demanded there is no surplus or shortage in the market.
15. Excess supply occurs when the price is too low and quantity supplied is greater than quantity demanded.