

CLASS XI | CBSE | 2025-26

INTRODUCTORY

MICROECONOMICS

CHAPTER 13

Market Equilibrium Under Perfect Competition

Made by SMIT SIR

PGT Commerce | Class XI Microeconomics

smitsircommerce.netlify.app

Mobile: 6353709585

Chapter Overview

What You Will Learn

- * Meaning of Market Equilibrium
- * Equilibrium price and equilibrium quantity
- * Effect of shift in demand curve on equilibrium
- * Effect of shift in supply curve on equilibrium
- * Simultaneous shift in demand and supply
- * Excess demand and excess supply situations
- * Numerical problems on market equilibrium

Exam Importance: Very High

Market equilibrium diagrams -- especially effects of demand and supply shifts -- are extremely common 3, 4, and 6-mark questions. Numericals finding equilibrium price and quantity from demand and supply functions are also tested.

1. Meaning of Market Equilibrium

DEFINITION: Market Equilibrium

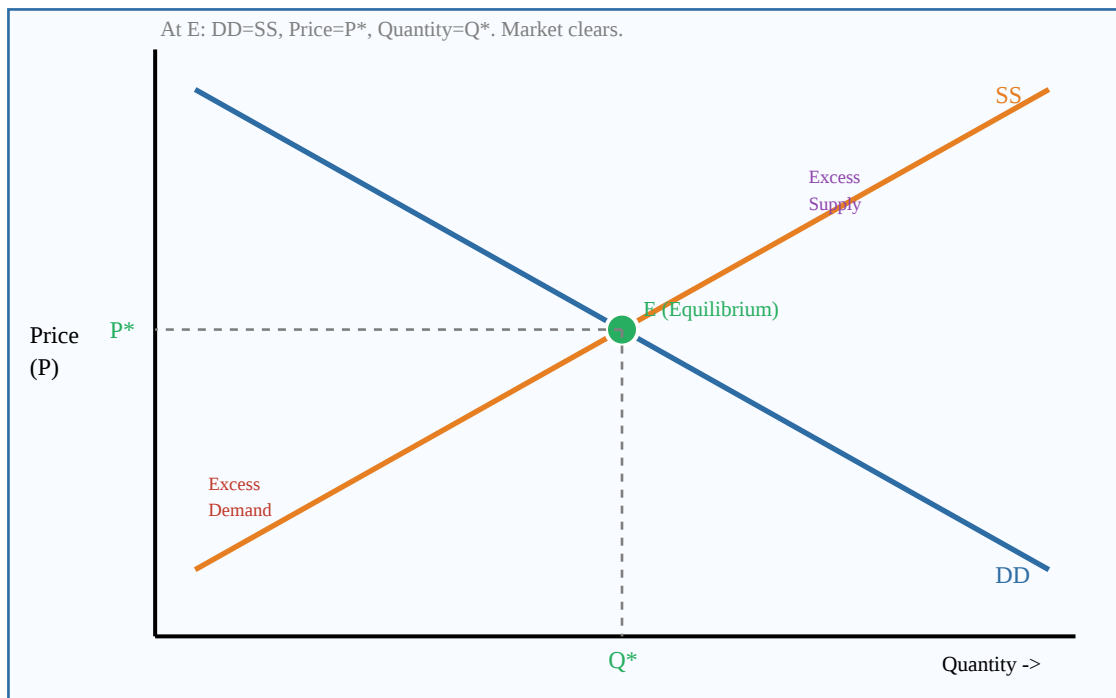
Market equilibrium is a state in which the market demand for a commodity equals its market supply at a particular price. At equilibrium, there is no tendency for price to change. This price is called the Equilibrium Price and the corresponding quantity is called the Equilibrium Quantity.

Key Terms:

- * Equilibrium Price: The price at which $Q_d = Q_s$ (also called Market Clearing Price)
- * Equilibrium Quantity: The quantity bought and sold at equilibrium price
- * Excess Demand: When $Q_d > Q_s$ at a price below equilibrium (price is too low)
- * Excess Supply: When $Q_s > Q_d$ at a price above equilibrium (price is too high)

Equilibrium Condition: Market Demand = Market Supply $Q_d = Q_s$ at Equilibrium Price (P^*)

2. Equilibrium Diagram



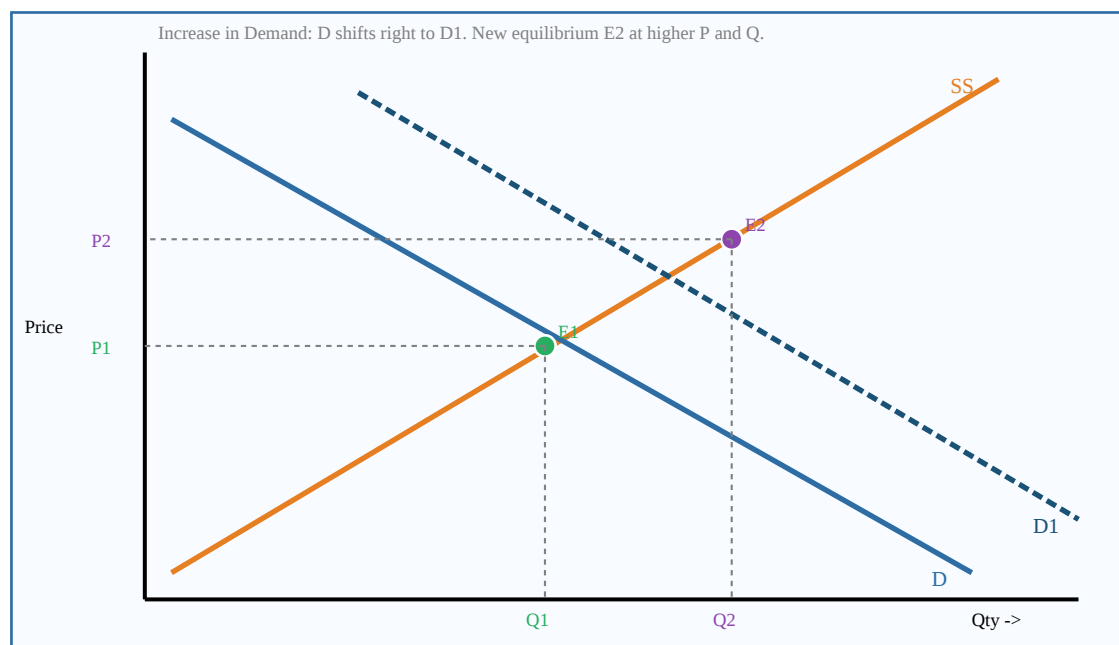
Explanation: * E is the equilibrium point where DD crosses SS. * P^* = Equilibrium Price, Q^* = Equilibrium Quantity. * Below P^* : $Q_d > Q_s$ (Excess Demand) -- price is driven UP. * Above P^* : $Q_s > Q_d$ (Excess Supply) -- price is driven DOWN. * Market automatically moves back to E.

3. Excess Demand and Excess Supply

Basis	Excess Demand	Excess Supply
Definition	$Q_d > Q_s$ at given price	$Q_s > Q_d$ at given price
Cause	Price is BELOW equilibrium	Price is ABOVE equilibrium
Market pressure	Shortage -- buyers compete -- price rises	Surplus -- sellers compete -- price falls
Price movement	Price rises until $Q_d=Q_s$	Price falls until $Q_d=Q_s$
Result	Market reaches equilibrium from below	Market reaches equilibrium from above

4. Effect of Shift in Demand on Equilibrium

When factors other than price change, the demand curve shifts. This changes the equilibrium price and quantity.



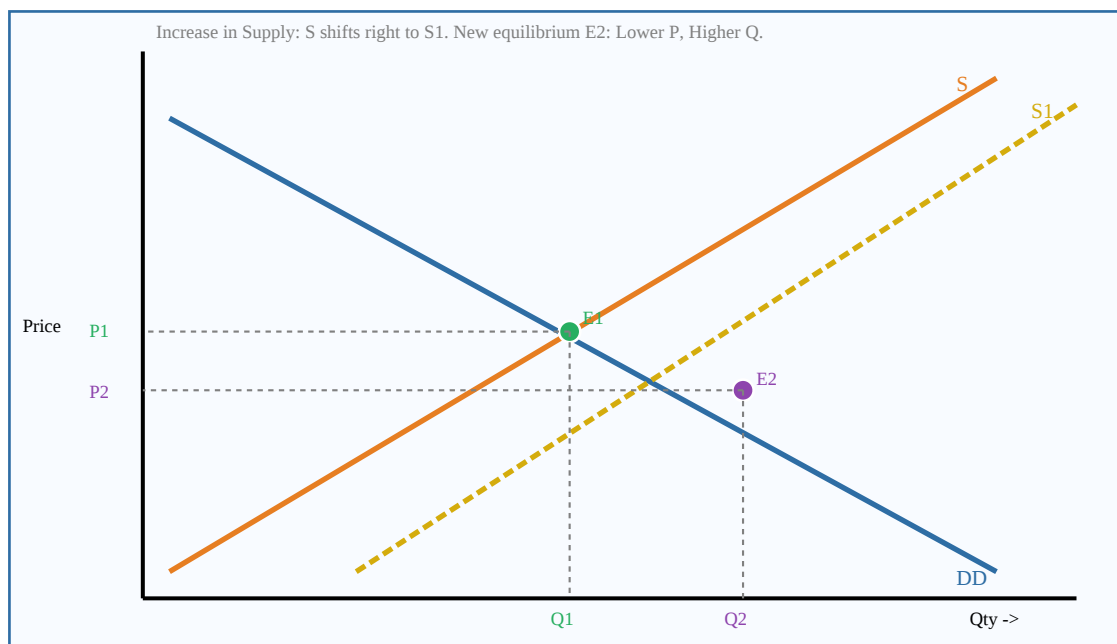
Effect of Increase in Demand (DD shifts RIGHT):

- * At old price P_1 : $Q_d > Q_s$ (excess demand) $\rightarrow$ price rises
- * Price rises until new equilibrium E2 is reached
- * New equilibrium: Higher Price ($P_2 > P_1$) AND Higher Quantity ($Q_2 > Q_1$)

Effect of Decrease in Demand (DD shifts LEFT):

- * At old price: $Q_s > Q_d$ (excess supply) $\rightarrow$ price falls
- * New equilibrium: Lower Price AND Lower Quantity

5. Effect of Shift in Supply on Equilibrium



Effect of Increase in Supply (SS shifts RIGHT):

- * At old price: $Q_s > Q_d$ (excess supply) $\rightarrow$ price falls
- * New equilibrium E2: LOWER Price ($P_2 < P_1$) AND HIGHER Quantity ($Q_2 > Q_1$)

Effect of Decrease in Supply (SS shifts LEFT):

- * At old price: $Q_d > Q_s$ (excess demand) $\rightarrow$ price rises
- * New equilibrium: HIGHER Price AND LOWER Quantity

6. Summary Table: Effects of Shifts on Equilibrium

Change	Direction of Shift	Effect on Price	Effect on Quantity
Increase in Demand	DD shifts RIGHT	Price RISES	Quantity RISES
Decrease in Demand	DD shifts LEFT	Price FALLS	Quantity FALLS
Increase in Supply	SS shifts RIGHT	Price FALLS	Quantity RISES
Decrease in Supply	SS shifts LEFT	Price RISES	Quantity FALLS
Both D and S increase equally	Both shift right	Price UNCHANGED	Quantity RISES
Both D and S decrease equally	Both shift left	Price UNCHANGED	Quantity FALLS

MEMORY TRICK

TRICK: DD right = PRICE UP, QTY UP. SS right = PRICE DOWN, QTY UP. Remember: Supply and Price are OPPOSITES when supply shifts. Demand and Price AGREE when demand shifts.

7. Numericals on Market Equilibrium

Q1: Market demand: $Q_d = 50 - 2P$. Market supply: $Q_s = 10 + 3P$. Find equilibrium price and quantity.

SOLUTION:

At equilibrium, $Q_d = Q_s$

$$50 - 2P = 10 + 3P$$

$$50 - 10 = 3P + 2P$$

$$40 = 5P$$

$$P^* = \text{Rs } 8 \text{ (Equilibrium Price)}$$

$$Q^* = 50 - 2(8) = 50 - 16 = 34 \text{ units (Equilibrium Quantity)}$$

$$\text{Verification: } Q_s = 10 + 3(8) = 10 + 24 = 34 \text{ units [CHECK: } Q_d = Q_s = 34]$$

ANSWER: Equilibrium Price = Rs 8, Equilibrium Quantity = 34 units

Q2: Use the following schedule to find equilibrium.

Price (Rs)	Quantity Demanded	Quantity Supplied	Market Situation
2	80	20	Excess Demand (60 units)
4	60	40	Excess Demand (20 units)
6	40	40	EQUILIBRIUM
8	20	60	Excess Supply (40 units)
10	10	80	Excess Supply (70 units)

EXAM TIP

Equilibrium at Price=Rs 6 because $Q_d = Q_s = 40$ units. Above Rs 6: excess supply pushes price down. Below Rs 6: excess demand pushes price up. Market self-corrects to Rs 6.

Exam-Oriented Questions and Model Answers

[1-Mark] Define Market Equilibrium.

Model Answer: Market equilibrium is a state in which market demand equals market supply at a particular price (called equilibrium price), and there is no tendency for the price to change.

[1-Mark] What is Excess Demand? What happens to price in this situation?

Model Answer: Excess demand occurs when quantity demanded (Q_d) is greater than quantity supplied (Q_s) at a given price. It means price is below equilibrium. Market forces push price UP until $Q_d = Q_s$.

[3-Mark] Using a diagram, explain what happens to equilibrium price and quantity when supply increases.

Model Answer: When supply increases, the supply curve shifts RIGHTWARD from SS to SS1. At old price P_1 : Q_s (new) $> Q_d \rightarrow$ Excess supply $\rightarrow$ sellers reduce price. New equilibrium E2: Price falls from P_1 to P_2 (lower price). Quantity rises from Q_1 to Q_2 (more quantity). Conclusion: Increase in supply $\rightarrow$ Lower equilibrium price + Higher equilibrium quantity.

[4-Mark] Market demand and supply schedules are given below. Find equilibrium price and quantity. What happens if price is fixed at Rs 4?

Model Answer: From schedule: Equilibrium where $Q_d = Q_s$. If this is at $P = \text{Rs } 6$, $Q_d = Q_s = 40$ units. If price is fixed at Rs 4 (below equilibrium): $Q_d = 60$, $Q_s = 20 \rightarrow$ Excess Demand = 40 units. Market outcome: Shortage of 40 units. Consumers compete to buy. Price tends to rise. Government price ceiling prevents this officially, but black market may develop.

[6-Mark] With the help of diagrams, explain the effects of (a) increase in demand and (b) decrease in supply on equilibrium price and quantity.

Model Answer: (a) INCREASE IN DEMAND: DD shifts right from D to D1. At old price P_1 : $Q_d > Q_s$ (excess demand) $\rightarrow$ price rises. New equilibrium E2: Higher price (P_2) and higher quantity (Q_2). Reason: More buyers willing to buy at same price, bidding price up. (b) DECREASE IN SUPPLY: SS shifts left from S to S1. At old price P_1 : $Q_d > Q_s$ (excess demand) $\rightarrow$ price rises. New equilibrium E2: Higher price (P_2) and lower quantity (Q_2). Reason: Fewer units available, buyers bid up price. Key Difference: Both (a) and (b) cause price to rise, BUT effect on quantity differs -- (a) raises quantity, (b) reduces quantity.

[HOTS] If both demand and supply increase by the same proportion, what happens to equilibrium price and quantity?

Model Answer: If both DD and SS increase by the same proportion: * Both curves shift rightward equally. * The equilibrium PRICE remains UNCHANGED (rightward shift in demand raises price, rightward shift in supply lowers price -- these effects cancel out). * The equilibrium QUANTITY RISES (both shifts increase quantity at equilibrium). * Net result: Same price, higher quantity traded in the market.

Chapter Summary and Quick Revision

Key Formula

Equilibrium Condition: $Q_d = Q_s$

To find P^* : Set demand function = supply function, solve for P .

Substitute P^* back to find Q^* .

LAST-MINUTE REVISION BOX

1. Equilibrium: $Q_d = Q_s$ at P^* (market clearing price)
2. Excess Demand ($Q_d > Q_s$): Price is too low $\rightarrow$ price RISES
3. Excess Supply ($Q_s > Q_d$): Price is too high $\rightarrow$ price FALLS
4. DD shifts right: Price UP, Qty UP
5. DD shifts left: Price DOWN, Qty DOWN
6. SS shifts right: Price DOWN, Qty UP
7. SS shifts left: Price UP, Qty DOWN
8. Both DD+SS shift right equally: Price SAME, Qty UP
9. NUMERICAL TRICK: Set $Q_d = Q_s \rightarrow$ solve for $P \rightarrow$ find Q

MEMORY TRICK

FINAL MNEMONIC: 'DD right = Price bright (rises). SS right = Price slight (falls). Both right = Price same, more to claim (quantity rises).'