Demand and Supply Analysis

Compiled by Jyoti P. Sarkar
A. DEMAND ANALYSIS:

I. Concepts

- **Meaning**—Demand, \( DD = \text{Desire} + \text{Ability to pay} + \text{Willingness to pay} \)

- **Quantity demanded**—Amount of a good that buyers are willing and able to purchase at a particular period of time.

- **Demand Schedule**—a tabular representation of the relationship between quantity demanded and its determinant (here, price) other determinants remaining constant at a particular period of time.

- **Demand Curve**—a graphical representation of the relationship between quantity demanded and its determinant (here, price) other determinants remaining constant at a particular period of time.

<table>
<thead>
<tr>
<th>Price of Coffee (in ₹)</th>
<th>Quantity Demanded ( (Q_x = 100 - 10P_x) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>80</td>
</tr>
<tr>
<td>3</td>
<td>70</td>
</tr>
</tbody>
</table>
II. Individual demand

- Demand of one individual consumers for the product at different possible prices at a given point of time.

- Individual Demand curve is downward sloping

- Reason: Income effect and substitution effect

III. Law of Demand

- According to the Law of Demand, there is an inverse relationship between price and quantity demanded for a commodity, all other factors remaining constant.

- The linear demand function is expressed as:
  \[ Q_x = 100 - 10 P_x \]

- The Individual demand curve and demand schedule shows inverse relationship between price and quantity demanded.
IV. Market Demand

- Sum of all the Individual demand for a commodity at different possible prices at a given point of time.
- **Market demand curve** is a horizontal summation of demand for all the consumers in the market.

Here, assuming there are only two consumer’s in the market.

**Market Demand Curve = A’s Demand Curve + B’s Demand Curve**
V. Demand Function
- Shows the functional relationship between the demand for a commodity or service and its determinants

VI. Determinants of demand
i. Price (Px)
ii. Income (Y)
iii. Price of Related Products (Py & Pz)
iv. Taste and Preferences (T)
v. Size and distribution of Population (N)
vi. Consumer’s Expectation (E)
vii. Advertisement Expenditure (A)
viii. Cost of Credit / Availability of Credit Facility (C)
ix. Government Policies (G)
x. Weather Conditions (W)

- Demand Function—\[ D_x = f(P_x, Y, P_y, P_z, T, N, E, A, C, G, W) \]

- Linear demand function—\[ D_x = a - bP_x + cY - dP_y + D P_z + eT + fN + g E + hA + gC - h (Taxes) + iW \]
VIII. Classification of Demand

• Direct Demand and Derived Demand
• Short-run demand and long run demand
• Individual demand and market demand
• Joint demand and Composite demand
• Company Demand and Industry Demand
• Demand for durable goods and demand for Non-durable goods
IX. Changes in Demand

• Movement along the curve—Increase and decrease in Demand
• Shift of the Curve—Expansion and Contraction in Demand
X. Exceptions to the Law of Demand

• Giffen goods
• Snob goods
• Price Expectations
• Emergencies
• Fashion/ Illustration effect
• Habit
XI. Price, Income and Substitution Effects

- Income Effect—
- Substitution Effect—
- Price Effect—

<table>
<thead>
<tr>
<th>Nature of Goods</th>
<th>Income Effect</th>
<th>Substitution Effect</th>
<th>Price Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Goods</td>
<td>Positive</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Inferior</td>
<td>Negative (weak)</td>
<td>Positive (strong)</td>
<td>Positive</td>
</tr>
<tr>
<td>Giffen</td>
<td>Negative (strong)</td>
<td>Positive (weak)</td>
<td>Negative</td>
</tr>
</tbody>
</table>
B. SUPPLY ANALYSIS

I. **Meaning**—Supply refers to various quantities of a commodity which a producer will offer for sale at a particular time at various corresponding prices.

II. **Law of Supply**—According to the Law of Supply, there is a direct functional relationship between the quantity supplied of a commodity and its price, other things remaining constant.

- **Supply Function** for price can be expressed as—\( Q_{sx} = f(P_x) \)
III. Individual Supply Curve and Schedule

The Individual supply curve and supply schedule shows direct relationship between price and quantity demanded.

- The Supply Curve *slopes upwards*

<table>
<thead>
<tr>
<th>Price (₹)</th>
<th>Quantity Supplied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
</tr>
<tr>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>5</td>
<td>60</td>
</tr>
</tbody>
</table>
IV. Factors Influencing Supply

• Price of the product
• Natural conditions—Weather conditions
• Technological advancement
• Availability of factors of production and their prices
• Improvement in transport
• Market structure
• Government policy
V. Exceptions to the Law of Supply

• Labour Supply
• Savings: Supply of Capital
• Exception of a Change in Price in the Intermediate Future
• Immediate Need for Cash
• Rare Collections
• Closure of Business
VI. Changes in Supply Curve

• Movement along the curve—Increase and decrease in Supply
• Shift of the Curve—Expansion and Contraction in Supply
C. Market Equilibrium

- Market equilibrium (e) is attained when quantity demanded ($Q_d$) is equal to quantity supplied ($Q_s$).
- At $e$, $Q_d = Q_s = Q$
- $P_e$ is the equilibrium price.
- Any price above $P_e$, say $P_1$ → Excess supply ($D < S$), **Surplus**
- Any price above $P_e$, say $P_2$ → Excess demand ($D < S$), **Shortage**.
Chapter 3: Demand Function

I. Nature of Demand Curve Under Different Market Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Price Elastic</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Perfect Competition</td>
<td>Perfectly elastic, $e_p = \infty$</td>
<td>horizontal demand curve</td>
</tr>
<tr>
<td>2. Monopolistic Competition</td>
<td>Highly elastic, $e_p &gt; 1$</td>
<td>Flatter demand curve</td>
</tr>
<tr>
<td>3. Monopoly</td>
<td>Less elastic, $e_p &lt; 1$</td>
<td>Steeper demand curve</td>
</tr>
<tr>
<td>4. Oligopoly</td>
<td>Segment AK: more elastic $e_p &gt; 1$ Segment KB: Inelastic $e_p &lt; 1$</td>
<td>Kinked demand curve</td>
</tr>
</tbody>
</table>