

Demand, Supply, Elasticity & Market Intervention

1. DEMAND

1.1 Meaning of Demand

Demand refers to the quantity of a good or service that consumers are willing and able to purchase at various prices during a given period of time, when all other factors influencing demand remain constant.

Conditions for an effective demand:

- Having a desire.
- Ability to pay (Purchasing Power).
- Willingness to spend.

1.2 Law of Demand

The Law of Demand states:

“Ceteris paribus (other factors remaining constant), there is an negative (inverse) relationship between price and quantity demanded.”

Therefore:

- When price increases → quantity demanded decreases.
- When price decreases → quantity demanded increases.

(Ceteris paribus meaning = at a given period of time when all the other factors remain constant.)

1.3 Assumptions of the Law of Demand

1. All factors influence demand remain constant except the price of the own good
2. Only price and quantity demanded of a good at a specific time period is considered
3. Only the demand of the normal good is considered
4. Consumers behave rationally

1.4 Reasons for the Law of Demand

The demand curve slopes downward due to the following main reasons:

1. **Substitution Effect** When the price of a good increases, consumers switch to cheaper substitute goods. Therefore, the quantity demanded decreases. Example: If the price of tea increases, consumers may buy coffee instead. When the price decreases, consumers shift from expensive substitutes to cheaper goods. Therefore the quantity demanded increases.
2. **Income Effect** When the price of a good falls, the real purchasing power of consumers increases. This means consumers can now afford to buy more goods with the same income. Therefore, quantity demanded increases.

Similarly, when price rises, real income falls, reducing quantity demanded.

1.5 Determinants of Demand

These factors cause a shift in the demand curve:

1. Price of the own good
2. Price of related goods
 - Substitutes (e.g., Tea and Coffee)
 - Complements (e.g., Car and Petrol)
3. Tastes and preferences
4. Expectations about future prices
5. Number of Buyers
6. Consumer Income

1.6 Change in Quantity Demanded vs Change in Demand

Change in Quantity Demanded:

- Caused only by price change.
- Movement along the demand curve.

Change in Demand:

- Caused by non-price factors.
- Shift of the demand curve (increase or decrease)/ (shift leftward/rightward)



2. SUPPLY

2.1 Meaning of Supply

Supply refers to the quantity of a good or service that producers are willing and able to offer for sale at various prices during a given period of time, when all the other factors affecting supply remain constant except the price of the good.

2.2 Law of Supply

The Law of Supply states:

“Ceteris paribus, there is a positive (direct) relationship between price and quantity supplied.”

Therefore:

- When price increases → quantity supplied increases.
- When price decreases → quantity supplied decreases.

2.3 Assumptions of the Law of Supply

1. Technology remains constant
2. Costs of production remain constant
3. Government policy remains unchanged
4. Number of sellers remains constant

2.4 Determinants of Supply

1. Price of the own good
2. Price of related goods in production
3. Technology
4. Price of inputs
5. Expectations
6. Number of sellers
7. Government policies

2.5 Change in Quantity Supplied vs Change in Supply

Change in Quantity Supplied:

- Caused by price change.
- Movement along the supply curve.

Change in Supply:

- Caused by non-price factors.
- Shift of supply curve. (shift leftward/rightward)

3. MARKET EQUILIBRIUM

3.1 Meaning

Market equilibrium is the situation where quantity demanded equals quantity supplied at a particular price.

At equilibrium:

- No shortage
- No surplus
- No tendency for price to change

3.2 Disequilibrium (just for additional info.)

Excess Demand (Shortage): Quantity demanded > Quantity supplied Leads to upward pressure on price.

Excess Supply (Surplus): Quantity supplied > Quantity demanded Leads to downward pressure on price.

3.3 Change in market equilibrium (EP , EQ)

Increase in Demand → Price ↑, Quantity ↑ Decrease in Demand → Price ↓, Quantity ↓

Increase in Supply → Price ↓, Quantity ↑ Decrease in Supply → Price ↑, Quantity ↓



4. ELASTICITY

Elasticity measures the responsiveness of quantity demanded or supplied due to changes in economic variables.

4.1 Price Elasticity of Demand (PED)

Definition: Measures the responsiveness of quantity demanded to a change in price.

Formula: $PED = \% \text{ Change in Quantity Demanded} / \% \text{ Change in Price}$

Types:

1. Perfectly Inelastic Demand ($PED = 0$)
2. Inelastic Demand ($PED < -1$)
3. Unitary Elastic Demand ($PED = -1$)
4. Elastic Demand ($PED > -1$)
5. Perfectly Elastic Demand ($PED = \text{infinity}$)

Determinants:

- Availability of substitutes
- Nature of the good (necessity or luxury)
- Proportion of income spent
- Time period
- Number of alternative uses of the given good

4.2 Income Elasticity of Demand (YED)

Definition: Measures the responsiveness of quantity demanded to changes in income.

Formula: $YED = \% \text{ Change in Quantity Demanded} / \% \text{ Change in Income}$

Types:

Positive $\rightarrow$ Normal goods

- $YED > 1$ = Luxury Good
- $YED < 1$ = Necessity Good

Negative $\rightarrow$ Inferior goods

4.3 Cross Elasticity of Demand (XED)

Definition: Measures responsiveness of demand for one good due to change in price of another good.

Formula: $XED = \% \text{ Change in Quantity Demanded of Good A} / \% \text{ Change in Price of Good B}$

Types:

Positive $\rightarrow$ Substitutes Negative $\rightarrow$ Complements

Easy tip to remember = S+, C-

4.4 Price Elasticity of Supply (PES)

Definition: Measures responsiveness of quantity supplied to change in price.

Formula: $PES = \% \text{ Change in Quantity Supplied} / \% \text{ Change in Price}$

Types:

1. Perfectly Inelastic Supply ($PES = 0$)
2. Inelastic Supply ($PES < 1$)
3. Unitary Elastic Supply ($PES = 1$)
4. Elastic Supply ($PES > 1$)
5. Perfectly Elastic Supply ($PES = \text{infinity}$)

Determinants:

- Time period
- Nature of the good
- Raw materials availability
- Ability to maintain stocks
- Mobility of factors of production

Importance of Demand and Supply in business decision making

- Preparation of sales estimates
- Policy to determine the price
- Diversification
- Non price policies



5. GOVERNMENT INTERVENTION

5.1 Price Ceiling (Maximum price)

A price ceiling is a legally established maximum price set by the government, above which a commodity cannot be sold. It is typically implemented to protect consumers by making essential goods or services more affordable. For a price ceiling to be effective, it must be set below the market equilibrium price.

Consequences:

- **Market Shortage:** The quantity demanded exceeds the quantity supplied, leading to an excess demand.
- **Black Markets:** Goods are often sold illegally at prices higher than the legal limit due to the scarcity.
- **Rationing and Queues:** Because the price mechanism cannot allocate goods, sellers may resort to “first-come, first-served” or the government may issue ration coupons.

5.2 Price Floor (Minimum price)

A price floor is a legally established minimum price set by the government, below which a commodity cannot be sold. It is typically implemented to protect producers, such as farmers or workers, by ensuring they receive a fair price or wage for their output. For a price floor to be effective, it must be set above the market equilibrium price.

Consequences:

- **Market Surplus:** The quantity supplied exceeds the quantity demanded, leading to excess supply or “gluts” in the market.
- **Wasted Resources:** Governments often have to buy up and store the unsold surplus to keep the price from falling, which can be costly.
- **Reduced Demand:** Because the price is artificially high, many consumers may be priced out of the market, reducing the total consumption of the good.

5.3 Unit Tax

A unit tax is a fixed amount of tax charged on each unit of a good or service sold, regardless of its price. It is typically collected from producers, which increases their production costs and causes the supply curve to shift leftwards by the amount of the tax.

Consequences:

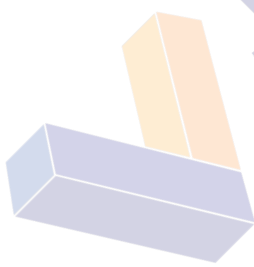
- **Increased Cost of Production:** The tax acts as an extra expense for the firm. For every unit produced, the firm’s total cost increases by the amount of the tax.
- **Price Increase:** The final price paid by consumers rises, while the price received by producers (after tax) falls.
- **Reduced Quantity:** The total volume of goods traded in the market decreases due to the higher cost.
- **Tax Burden:** The burden of the tax is shared between buyers and sellers depending on the price elasticity of demand and supply.
- **Government Revenue:** The government generates income, calculated as the tax per unit multiplied by the quantity sold.

5.4 Subsidy

A subsidy is a government payment to a producer per unit of output produced. Its main goal is to lower the market price of essential goods or to encourage the production of goods that benefit society.

Consequences:

- **Decreased Cost of Production:** The subsidy covers a portion of the producer's expenses. This makes it cheaper for the firm to produce each unit of the good.
- **Supply Shift:** Because production costs are lower, the supply curve shifts rightwards, as producers are now willing and able to supply more at every price level.
- **Lower Market Price:** A portion of the subsidy is usually passed on to consumers in the form of a lower selling price.
- **Higher Quantity Traded:** Because the price has dropped, the quantity demanded and supplied in the market increases, leading to a market expansion.
- **Government Expenditure:** Unlike a tax which brings in money, a subsidy is a cost to the government budget (calculated as the subsidy per unit multiplied by the total units sold).



6. CONSUMER & PRODUCER SURPLUS

Consumer Surplus: The difference between the maximum price consumers are willing to pay and the actual market price.

Producer Surplus: The difference between the minimum price producers are willing to accept and the actual market price.

