

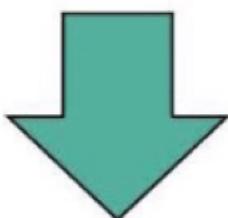
DEMAND – Definition

Amount of goods and services a consumer is *willing* and *able* to buy at various prices in a *given time period*



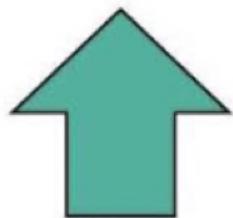
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Law of Demand



When the price of any product increases then its demand will fall.

When its price decreases then its demand will increase in the market.



LAW OF DEMAND

When price of a product increases demand for that product decreases and vice versa. But if price of a product as well as income of the household also increases, the household may or may not demand more or less of the good. Therefore, if income of the household, fashion, season, etc. remain the same, demand of a product is inversely related to its price. So, in normal circumstances, when price of a good increases, demand for the product decreases and vice versa when other things remain the same.

This is called law of demand.

$$D \propto \frac{1}{P}$$

where, D = Demand for the product

P = Price of the product

The demand curve has negative slope and the sum total of the demand by all the individuals (or a household) is called market demand.

Demand of a good depends on many other factors. Some of them are price of the product itself, taste, preference, income and urgency of demand and price of related goods. Consumer's income and consumer's expectations of future income also influence demand for a product. Size of population as well as social values of the society also influence demand of a good. When price of a good remains same but demand for that good decreases or increases due to change in any other factor, then that is known as 'contraction' or 'expansion' in demand.

Exception to the law of demand

(i) Giffen goods: It has already been discussed under goods. In case of normal goods, when price increases demand decreases and vice versa. However, in case of Giffen goods, when price falls demand also falls and vice versa. This happens because when price falls, purchasing power of the household increases, with which they switch over to its superior substitutes.

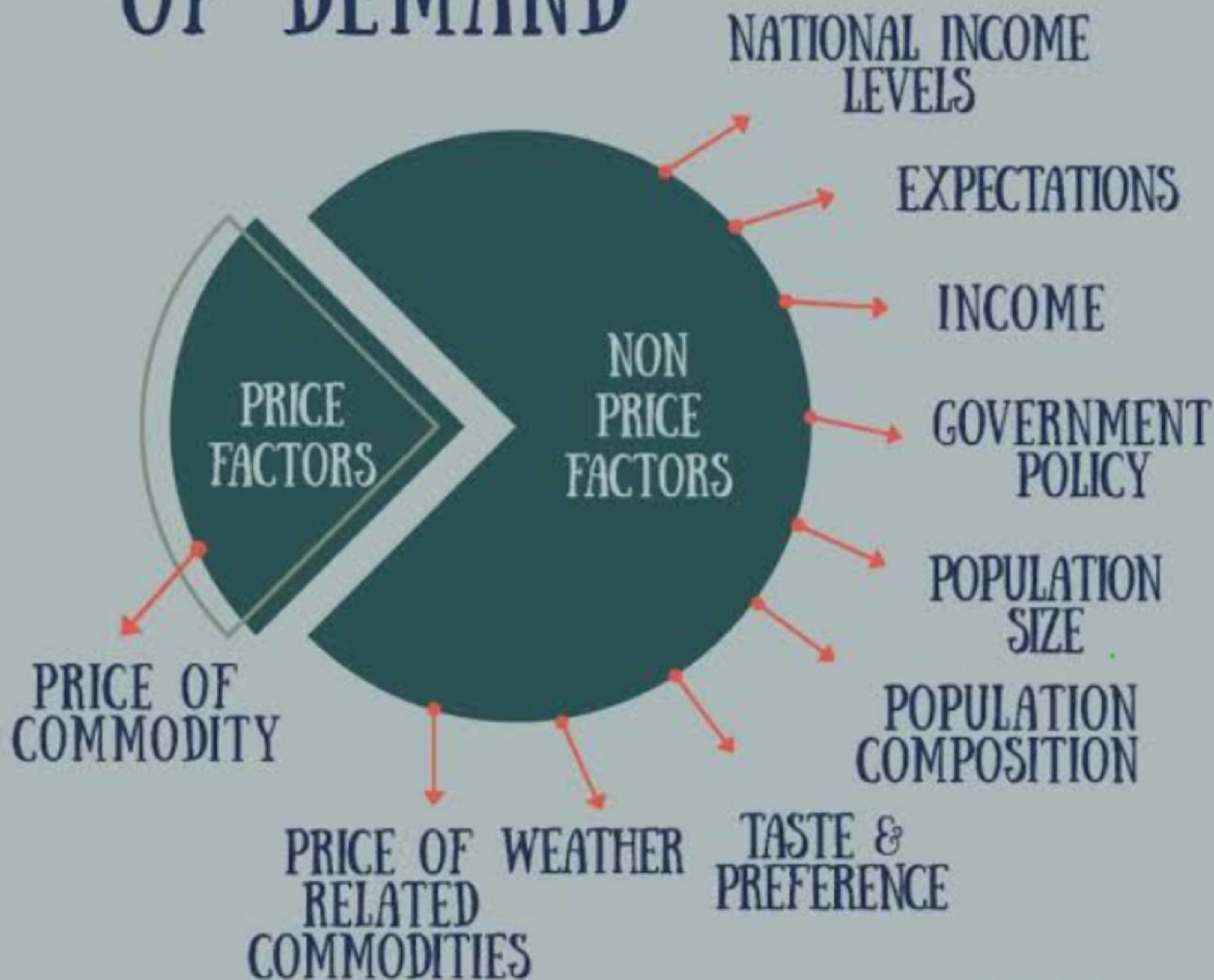
(ii) Conspicuous consumption or prestige goods (Veblen effect): Some luxury goods such as sophisticated video or music system and sports car are bought because they are high priced and whose consumption can be shown off conspicuously to boast about

the consumer's position in the society.

(iii) Price expectation: If there is expectation of further rise in price, an initial increase in price results in higher demand.

If there is no exceptional situation, there is inverse relationship between demand and price. But million rupees question is, by which magnitude? With one unit change in price, magnitude of change in demand is called price elasticity of demand.

DETERMINANTS OF DEMAND



$$e_P = - \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$
$$= - \frac{\% \Delta Q_d}{\% \Delta P}$$
$$= - \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

Where,

e_P = Price elasticity of demand

Q = Original quantity demanded

ΔQ = Change in quantity demanded ($Q_1 - Q$)

P = Original price

ΔP = Change in price ($P_1 - P$)

PRICE ELASTICITY OF DEMAND

Ratio between proportionate change in demand of a commodity with proportionate changes in price of that commodity is called price elasticity of demand.

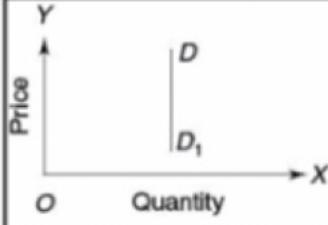
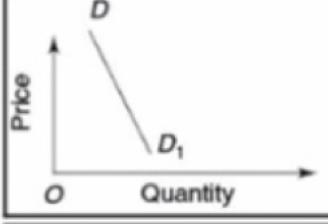
$$e_d = \frac{dQ}{dP} \times \frac{P}{Q}$$

where, dQ = Change in demand

dP = Change in price

Q = Original demand

P = Original price

S.No	Elasticity	Type of Elasticity	Implications	Graphical Representation
1.	$e_d = 0$	Perfectly inelastic	Change in price leaves demand totally unchanged	
2.	$e_d < 1$	Less than unit elastic	Percentage change in demand falls short of the percentage change in price	

3.	$e_d = 1$	Unit elastic	Percentage change in demand equals the percentage change in price	<p>A graph showing a downward-sloping demand curve labeled D. A horizontal line from price P intersects the curve at quantity Q1. Another horizontal line from price P1 (lower than P) intersects the curve at quantity Q2. A vertical line from Q1 to P1 is labeled Ed=1, illustrating that the percentage change in quantity demanded is equal to the percentage change in price.</p>
4.	$e_d > 1$	More than unit elastic	Percentage change in demand exceeds the percentage change in price	<p>A graph showing a downward-sloping demand curve labeled D. A horizontal line from price P intersects the curve at quantity Q1. Another horizontal line from price P1 (lower than P) intersects the curve at quantity Q2. The distance between Q1 and Q2 is greater than the distance between P and P1, illustrating that the percentage change in quantity demanded is greater than the percentage change in price.</p>
5.	$e_d = \infty$	Perfectly elastic	Any change in price causes infinite change in demand	<p>A graph showing a horizontal demand curve labeled D. A vertical line from any point on the curve to the Price axis indicates an infinite change in quantity demanded for a small change in price, illustrating perfect elasticity.</p>
6.	$e_d = -$ Negative	Normal good	With increase in price, demand decreases and vice versa	<p>A graph showing a downward-sloping demand curve labeled D. A horizontal line from price P intersects the curve at quantity Q1. Another horizontal line from price P1 (higher than P) intersects the curve at quantity Q2. The distance between Q1 and Q2 is greater than the distance between P and P1, illustrating that the percentage change in quantity demanded is less than the percentage change in price for a normal good.</p>
7.	$e_d = +$ Positive	Giffen good	With increase in price, demand also increases and vice versa	<p>A graph showing an upward-sloping demand curve labeled D. A horizontal line from price P intersects the curve at quantity Q1. Another horizontal line from price P1 (lower than P) intersects the curve at quantity Q2. The distance between Q1 and Q2 is greater than the distance between P and P1, illustrating that the percentage change in quantity demanded is greater than the percentage change in price for a Giffen good.</p>

Determinants of Price Elasticity

(i) Substitutability

If more substitutes of a product are available, the demand will be more elastic. Along with the substitution effect, multiple use effect also influences elasticity. If a product has only one use or a very limited number of uses, then the effect of a change in price is relatively limited. But if there are many ways in which the product can be used, then the effect of a price change is more pronounced. Therefore, products with many uses may have higher price elasticity than single use goods.

(ii) Relative size of expenditure on the product concerned

Relative size of expenditure on the commodity is a very important determinant. Demand for salt is hardly affected by its price because very small amount of total income is spent on purchase of salt.

(iii) Necessity versus luxury

One of the most important determinants of elasticity is the consumer's perception of a product as a necessity or as a luxury.

(iv) Time period for which the demand curve pertains

Given enough time, a substitute can be found for almost any product. So in the short run, it may be price inelastic but price elastic in the long run.

From the given demand schedules of goods A and B, find out which goods has a more elastic demand.

Commodity X		Commodity Y	
Price/unit (Rs.)	Quantity demanded (Units)	Price/unit (Rs.)	Quantity demanded (Units)
6	10	10	12
3	16	6	30

$$e_p = \frac{\Delta Q}{\Delta P} \times \frac{P_1}{Q_1}$$

In case of commodity X,

$$P_1 = 6 \quad Q_1 = 10 \quad \Delta Q = Q_2 - Q_1 = 16 - 10 = 6 \quad \Delta P = P_2 - P_1 = 3 - 6 = -3$$

Therefore, the price elasticity of demand (e_p) will be,

$$e_p^X = \frac{6}{-3} \times \frac{6}{10} = \frac{36}{-30} = -1.2$$

Similarly, in case of commodity Y,

$$P_1 = 10 \quad Q_1 = 12$$

$$\Delta Q = Q_2 - Q_1 = 30 - 12 = 18$$

$$\Delta P = P_2 - P_1 = 6 - 10 = -4$$

Therefore, the price elasticity of demand (e_p) will be,

$$e_p^Y = \frac{18}{-4} \times \frac{10}{12} = \frac{180}{-48} = -3.75$$

INCOME ELASTICITY OF DEMAND

Ratio between proportionate change in demand due to proportionate change in income is called income elasticity of demand (e_Y).

$$e_Y = \frac{dQ}{dY} \cdot \frac{Y}{Q}$$

where, Q = Original demand of a commodity

Y = Original consumer's income

dQ = Change in demand

dY = Change in income

If, $e_Y < 0$, it is inferior good.

$e_Y > 0$, it is normal good.

$e_Y > 1$, it is luxury good,

$e_Y < 1$, it is necessity good.

Significance of income elasticity of demand:

(i) Goods with low income elasticity of demand are 'recession proof' in the sense that their sales are stable in an economic downturn and firms producing such goods can never expect robust sale.

(ii) If a product is regarded as an inferior good by the market as a whole, the firm must expect the quantity demand of the product to decline as economy grows and income rises.

(iii) Management of firm also wants to consider information about the income elasticity of demand for its products in planning for location and expansion of firm as well as advertising and promotion of product.

CROSS ELASTICITY OF DEMAND

Proportionate change in demand of commodity M due to proportionate change in the price of another commodity N is called cross elasticity of demand.

$$e_d^* = \frac{dQ_M}{dP_N} \cdot \frac{P_N}{Q_M}$$

where Q_M = Original demand of a commodity M

P_N = Original price of commodity N

dQ_M = Change in demand of commodity M

dP_N = Change in price of commodity N

If $E_d^* = +\text{ve}$, then commodities are substitute.

$E_d^* = -\text{ve}$, then commodities are complementary.

$E_d^* = 0$, then commodities are not at all related.

Significance of Cross Elasticity of Demand

The concept of cross elasticity of demand is particularly useful at two different levels of business. At the level of firm, knowledge of cross elasticity of demand helps in the formulation of marketing strategy. Firms need to know how the demand for its products will react to price changes of either substitute or complementary goods. At the industry level, the cross elasticity of demand indicates whether or not a substitute exists for that product.