

Quick View

Economic Good and Free Good

An **economic good** is a physical object or service that has value to people and can be sold for a price in the marketplace. **Free good** is an item of consumption (such as air) that is useful to people, is naturally in abundant supply, and needs no conscious effort to obtain it. In contrast, an economic good is scarce in relation to its demand and human effort is required to obtain it.

Market

A public place where buyers and sellers make transactions, directly or via intermediaries.

Price

Market value, or agreed exchange value, that will purchase a definite quantity, weight, or other measure of a good or service. In commerce, it boils down to what (1) a buyer is willing to pay, (2) a seller is willing to accept, and (3) the competition is allowing to be charged. It is also called sale price and selling price.

CONCEPTS OF DEMAND AND DEMAND SCHEDULE

Demand for a good is the quantity of that good which a buyer is willing to buy at a particular price, during a period of time.

Demand schedule is a tabular presentation showing the different quantities of a good that buyers of that good are willing to buy at different prices during a given period of time.

Demand schedule of a commodity	
Price (Rs. per unit)	Quantity demanded (in units)
50	50
40	100
30	150
20	200
10	250

This schedule indicates that more is purchased as price falls. This inverse relationship between price and quantity demanded, other thing remaining the same is called the **law of demand**.

Determinants of Demand

The determinants of demand are also known as demand shifters. They result in the leftward (decrease) or rightward (increase) shifts in the demand curve.

1.) Tastes or preferences of consumers

If consumer's tastes and preferences for a product change, the demand for the product will change. If fashion magazines are showing short skirts, the demand for short skirts will increase. If fashion magazines show few pictures of short skirts, the demand for these skirts will decrease.

- an increased taste in a product increases its demand
- a decreased taste in a product decreases its demand

2.) Number of consumers in the market

If the number of consumers in the market for a product increases, the demand for the product will increase. If a new high school is built in the same block as a fast food restaurant, the demand for the fast-food restaurant's products will increase. When the school closes for summer vacation, the demand for the fast-food restaurant's products will decrease.

- more consumers increases a products demand
- fewer consumers decreases a products demand

3.) The money incomes of consumers

If consumer's income increases, demand for most goods and services will increase. The reverse is also true. If consumer's income decreases, demand for most goods and services will decrease. For example, if workers at a manufacturing facility sign a new contract that provides a 5% raise, these workers will have more income and their demand for goods and services will increase. If Social Security taxes increase for employees, consumers will have less take-home pay, and as a result, their demand for goods and services will decrease

Superior goods or normal goods

A good whose consumption increases with income. Thus any good is normal which is not inferior; this applies to most goods. Good for which demand (consumption) increases as consumer income rises, but at a rate slower than the rate of increase in income. Defined also as a good for which the income elasticity of demand is positive but less than one. Also called necessary good, it is the opposite of inferior good.

- As income increases, a superior good's demand increases
- As income decreases, a superior good's demand decreases
- Superior goods are most common goods

Inferior Goods

Not a substandard-good, but the term in economics for an item for which income elasticity of demand is less than zero. As the consumers become monetarily better off (earn higher incomes), the demand for such goods (such as basic food) falls because consumers can now afford higher priced substitutes.

- As income increases, an inferior good's demand decreases
- As income decreases, an inferior good's demand increases

4.) Prices of related goods

Substitute Goods

A change in the price of one good can change the demand for another good. One type of related goods is substitutes-goods that are bought in place of one another. If the price of movie tickets increases, the demand for video rentals may increase. If the price of Hamburger Heaven's hamburgers decreases, the demand for Big Burger's hamburgers may decrease.

- As price of A increases, demand for B increases

- As price of A decreases, demand for B decreases
- Example: Nike's and Reeboks

Complementary Goods

A change in the price of one good can change the demand for another good. One type of related goods is complements-goods that are purchased together. A decrease in the price of strawberries will cause an increase in the demand for whipped cream. An increase in the price of hamburger will cause a decrease in the demand for hamburger buns.

- As price of A increases, demand for B decreases
- As price of B decreases, demand for A increases
- Example: computers and computer games; gasoline and motor oil

Independent Goods

Independent goods are goods that have a zero cross elasticity of demand. Changes in the price of one good will have no affect on the demand of an independent good. A person's demand of nails is independent of his or her demand for bread.

- As price of good A changes, demand for good B does not change

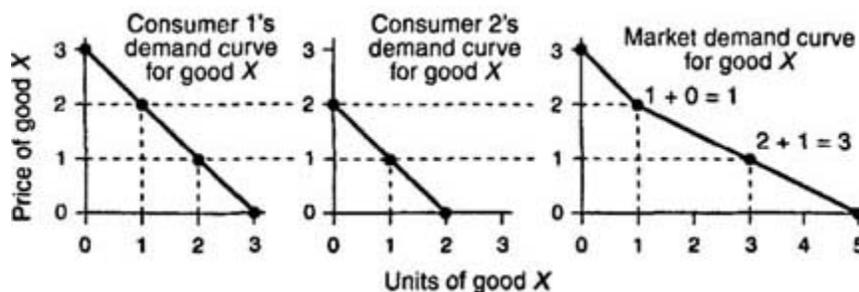
5.) Consumer expectations about the future prices and incomes

If we expect that the price of a good or service will be lower in the future, the demand for that product will be lower today, resulting in left-shift of today's demand curve. Conversely, if we expect the price to be higher tomorrow, the demand will be greater today, resulting in right-shift in the demand curve.

- if consumers expect a price increase in near future, demand increases
- if consumers expect a price decrease in the near future, demand decreases

Individual Demand, Market Demand

The consumer equilibrium condition determines the quantity of each good the individual consumer will demand. The individual consumer's demand for a particular good—call it good X—will satisfy the law of demand and can therefore be depicted by a downward-sloping **individual demand curve**. The individual



consumer, however, is only one of many participants in the market for good X. The **market demand curve** for good X includes the quantities of good X demanded by *all* participants in the market for

Figure 1 Derivation of the market demand curve from consumers' individual demand curves

good X. The market demand curve is found by taking the **horizontal summation** of all individual demand curves. For example, suppose that there were just two consumers in the market for good X, Consumer 1 and Consumer 2. These two consumers have different individual demand curves corresponding to their different preferences for good X. The two individual demand curves are depicted in Figure 1, along with the market demand curve for good X.

The market demand curve for good X is found by summing together the quantities that both consumers demand at each price. For example, at a price of \$1, Consumer 1 demands 2 units while Consumer 2 demands 1 unit; so, the market demand is $2 + 1 = 3$ units of good X. In more general settings, where there are more than two consumers in the market for some good, the same principle continues to apply; the market demand curve would be the horizontal summation of all the market participants' individual demand curves.

The Law of Demand states that the demand curve is downward sloping.

There are TWO types of change in demand;

1. Movement **ALONG** the demand curve
2. **SHIFTS** in the demand curve

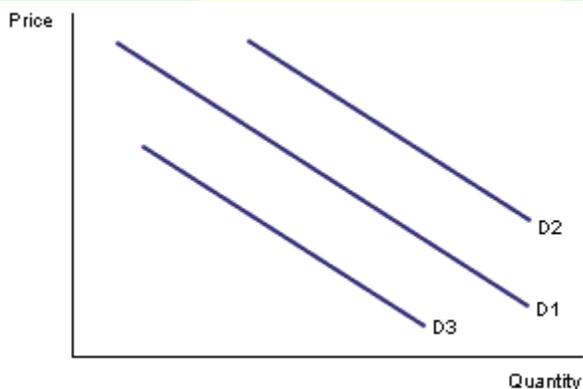
A movement ALONG the demand curve

A movement along the demand curve is caused by a change in **PRICE** of the good or service. For instance, a fall in the price of the good results in an **EXTENSION** of demand (quantity demanded will increase), whilst an increase in price causes a **CONTRACTION** of demand (quantity demanded will decrease).

A SHIFT in the demand curve

A shift in the demand curve is caused by a change in any non-price determinant of demand. The curve can shift to the right or left.

A rightward shift represents an increase in the quantity demanded (at all prices), D1 to D2, whilst a leftward shift represents a decrease in the quantity demanded (at all prices). D1 to D3.



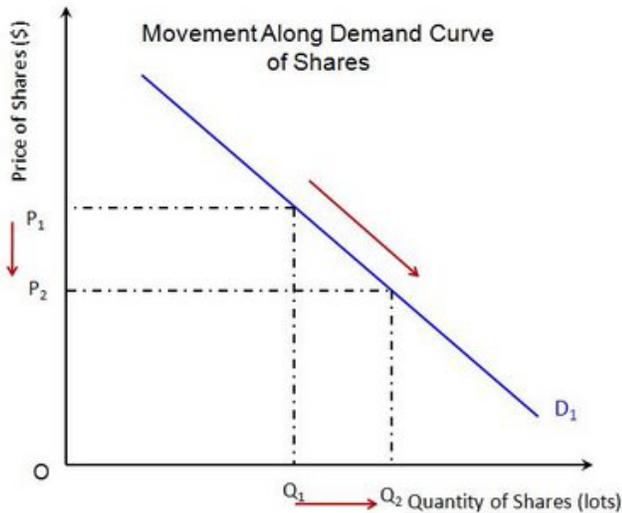
The movements can be caused by the following;

- Change in consumer income - If consumer income increases, then consumers buy more normal/luxury items and the demand curve shifts to the right (D1 to D2).
- Change in the price of other goods - if the price of a complementary good increases then the demand for the good will fall. This will result in a leftward shift in the demand curve of any complementary good (D1 to D2). However, if the price of a substitute good increases, then the demand for the other good would increase as consumers switch their consumption patterns (D1 to D2)

- Changes in tastes and fashions - if a good becomes fashionable then the demand for the good will shift to the right (D1 to D3).

Difference between Movement and Shift along Demand Curve

A movement along a demand curve occurs when the ONLY factor that changes is price. Because only price changes and price is the Y Axis, there is no physical need for any translation of the demand curve. To find out the level of demand for the new price, you simply draw a line along the price and where it intersects the demand curve would be level of demand.



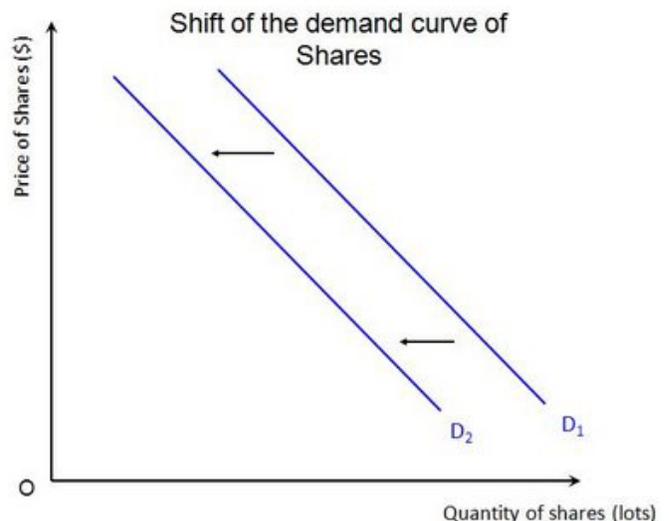
The diagram above indicates how a movement along a demand curve is best illustrated in a diagram. It is just an arrow along the demand curve in the correct direction. As price increases the movement would be to the left, as price decreases the movement would be to the right.

If the quantity decreases it is known as contraction. If the quantity increases it is known as expansion.

assumption is that price is the only factor that changes Ceteris Paribus

In this diagram the shift from demand curve D1 to demand curve D2 is represented by an actual translation across the plane. This particular diagram features an inward shift to the left, or a shrink in demand. An outward shift would be an increase in demand.

This shift is caused by any actual changes in the determinants of demand.



Shifts in Demand Curve

A shift in a demand or supply curve occurs when a good's quantity demanded or supplied changes even though price remains the same. For instance, if the price for a bottle of beer was \$2 and the quantity of beer demanded increased from Q1 to Q2, then there would be a shift in the demand for beer. Shifts in the demand curve imply that the original demand relationship has changed, meaning that quantity demand is affected by a factor other than price. A shift in the demand relationship would occur if, for instance, beer suddenly became the only type of alcohol available for consumption.



Conversely, if the price for a bottle of beer was \$2 and the quantity supplied decreased from Q1 to Q2, then there would be a shift in the supply of beer. Like a shift in the demand curve, a shift in the supply curve implies that the original supply curve has changed, meaning that the quantity supplied is affected by a factor other than price. A shift in the supply curve would occur if, for instance, a natural disaster caused a mass shortage of hops; beer manufacturers would be forced to supply less beer for the same price.

Price Elasticity of Demand

The Law of Demand indicates only direction of change in quantity demanded in response to change in price but elasticity of demand states with how much or to what extent the quantity demanded will change in response to change in price. We can also put it as:

The Price Elasticity of Demand measures the rate of response of quantity demanded due to a price change.

Calculating the Price Elasticity of Demand

1. Percentage or Proportionate Method

$$E_p = \frac{\% \text{Change in Quantity Demanded}}{\% \text{Change in Price}}$$

You may be asked the question "Given the following data, calculate the price elasticity of demand when the price changes from \$9.00 to \$10.00" Using the chart on the bottom of the page, I'll walk you through answering this question.

First we'll need to find the data we need. We know that the original price is \$9 and the new price is \$10, so we have Price(OLD)=\$9 and Price(NEW)=\$10. From the chart we see that the quantity demanded when the price is \$9 is 150 and when the price is \$10 is 110. Since we're going from \$9 to \$10, we have QDemand(OLD)=150 and QDemand(NEW)=110, where "QDemand" is short for "Quantity Demanded". So we have:

Price (OLD)	9
Price (NEW)	10
QDemand (OLD)	150
QDemand (NEW)	110

To calculate the price elasticity, we need to know what the percentage change in quantity demand is and what the percentage change in price is. It's best to calculate these one at a time.

Calculating the Percentage Change in Quantity Demanded

The formula used to calculate the percentage change in quantity demanded is:

$$\frac{\text{QDemand (New)} - \text{QDemand(Old)}}{\text{QDemand(Old)}}$$

By filling in the values we wrote down, we get:

$$\frac{110-150}{150} = \frac{-40}{150} = -0.2667$$

We note that **% Change in Quantity Demanded = -0.2667** (We leave this in decimal terms. In percentage terms this would be -26.67%). Now we need to calculate the percentage change in price.

Calculating the Percentage Change in Price

Similar to before, the formula used to calculate the percentage change in price is:

$$\frac{\text{Price (New)} - \text{Price (Old)}}{\text{Price (Old)}}$$

By filling in the values we wrote down, we get:

$$\frac{10 - 9}{9} = \frac{1}{9} = 0.1111$$

We have both the percentage change in quantity demand and the percentage change in price, so we can calculate the price elasticity of demand.

Final Step of Calculating the Price Elasticity of Demand

We go back to our formula of:

$$E_p = \frac{\% \text{Change in Quantity Demanded}}{\% \text{Change in Price}}$$

We can now fill in the two percentages in this equation using the figures we calculated earlier.

$$E_p = \frac{-0.2667}{0.1111} = -2.4005$$

When we analyze *price* elasticities we're concerned with their absolute value, so we ignore the negative value. We conclude that the price elasticity of demand when the price increases from \$9 to \$10 is 2.4005.

2. Total Outlay Or Expenditure Or Revenue Method

We measure price elasticity of demand with change in total expenditure of a firm due to change in its price level. Elasticity is expressed in three ways:

- Unitary elasticity (Total revenue/Expenditure remains the same)
- Elastic demand (Total revenue/Expenditure increases with decrease in the prices)
- Inelastic demand (Total revenue/Expenditure decreases with decrease in the prices)

Total Expenditure Method

Price of pencil (per dozen)	Quantity demanded per dozen	Total Expenditure	Coefficient of elasticity of demand
8	3	24	
7	4	28	Elastic
6	5	30	Elastic
5	6	30	Unity
4	7	28	Inelastic
3	8	24	Inelastic

RELATIONSHIP BETWEEN PRICE ELASTICITY OF DEMAND AND TOTAL EXPENDITURE

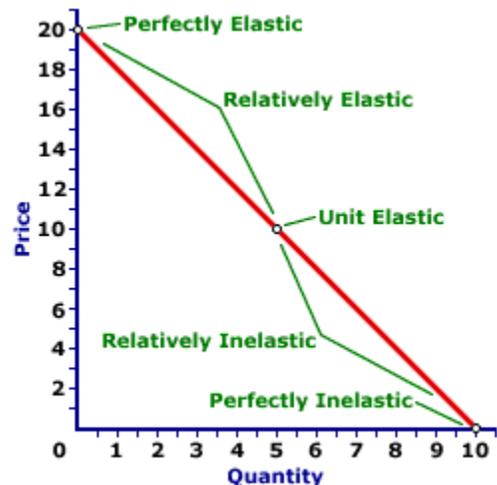
At this stage of learning it is sufficient to know the following about this relationship:

1. When demand is elastic, a fall (rise) in the price of a commodity results in increase (decrease) in total expenditure on it. Or, when a fall (rise) in the price of a commodity results in increase (decrease) in total expenditure on it, its demand is elastic.
2. When elasticity is unitary, a fall (rise) in the price of the commodity does not result in any change in total expenditure on it, or when a fall (rise) in price results in no change in total expenditure then its elasticity is unitary.
3. When demand is inelastic, a fall (rise) in the price of a commodity results in a fall (rise) in total expenditure on it, or when a fall (rise) in the price of a commodity results in decrease (increase) in total expenditure on it, its demand is inelastic.

3. Geometric Or Point Method

This method attempts to calculate the numerical value of elasticity of demand at a particular point on the demand curve.

$$E_p = \frac{\text{Lower segment of the Demand Curve}}{\text{Upper segment of the Demand Curve}}$$



Proof of the Geometric method

To show that E_p at point C = CB/CA .

Let OP be the given price and OQ be the given demand at this price. Suppose price falls to zero. The demand at zero price is OB.

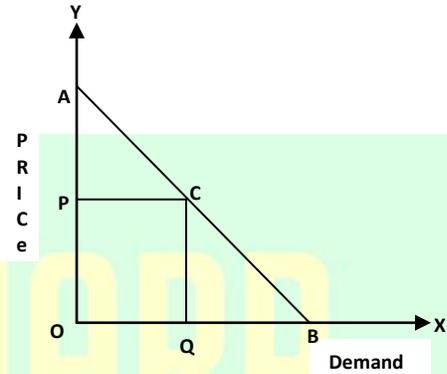
Therefore $\Delta p = OP$ and $\Delta q = QB$

Price (Rs)	Demand (units)
OP	OQ
Zero	OB

$$\begin{aligned} \text{Given } E_p &= \frac{p}{q} \times \frac{\Delta q}{\Delta p} \\ &= \frac{OP}{OQ} \times \frac{QB}{OP} \\ &= \frac{QB}{OQ} = \frac{QB}{PC} \quad (\text{As } OQ = PC) \end{aligned}$$

ΔAPC and ΔCQB are similar

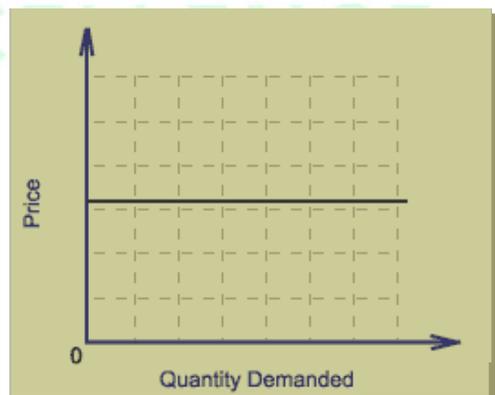
$$\therefore E_p = \frac{QB}{PC} = \frac{CB}{CA}$$

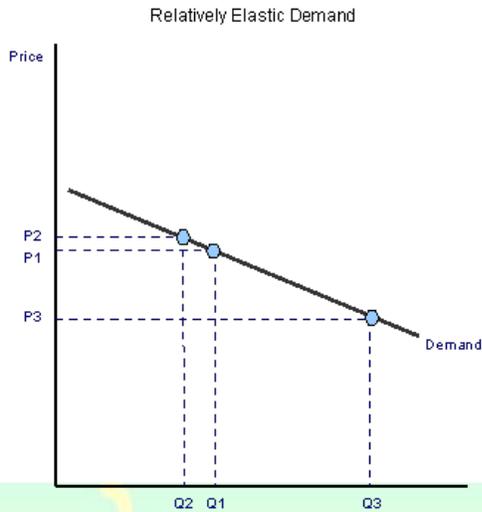


How Do We Interpret the Price Elasticity of Demand?

a. Elasticity = ∞ :

If you can imagine that an infinitesimally small drop in price (so small that you can't see it on the diagram) has caused an infinite rise in demand (the horizontal demand curve goes on forever). Then you can just about see that the horizontal demand curve represents infinite (or perfect) elasticity. If **Price elasticity is infinity** then demand is said to be **perfectly elastic**. That is the demand curve will be horizontal.





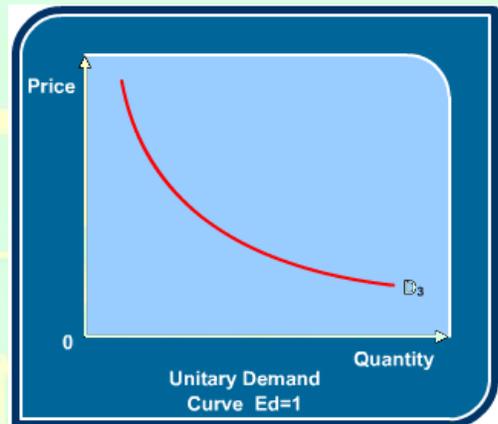
b. Elasticity > 1:

If $E_p > 1$, then demand responds more than proportionately to a change in price i.e. **demand is elastic**. For example a 20% increase in the price of a good might lead to a 30% drop in demand. The price elasticity of demand for this price change is -1.5 .

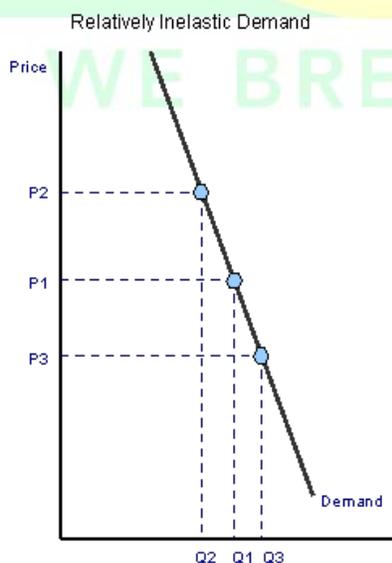
The diagram shows a flattish demand curve, although it is **not** horizontal. Notice that for a relatively small increase in price (from P_1 to P_2) the quantity demanded has fallen by a relatively large amount (from Q_1 to Q_2). $\%Q_d > \%P$, and so demand is **elastic**.

c. Elasticity = 1:

If $E_p = 1$ (i.e. the percentage change in demand is exactly the same as the percentage change in price), then demand is said to **unit elastic**. A 15% rise in price would lead to a 15% contraction in demand leaving total spending by the same at each price level. The third diagram represents unitary elasticity. The parabola shape means that, wherever you are on the curve, a given percentage change in the price of the good will result in an identical percentage change in the quantity demanded.



d. Elasticity < 1:



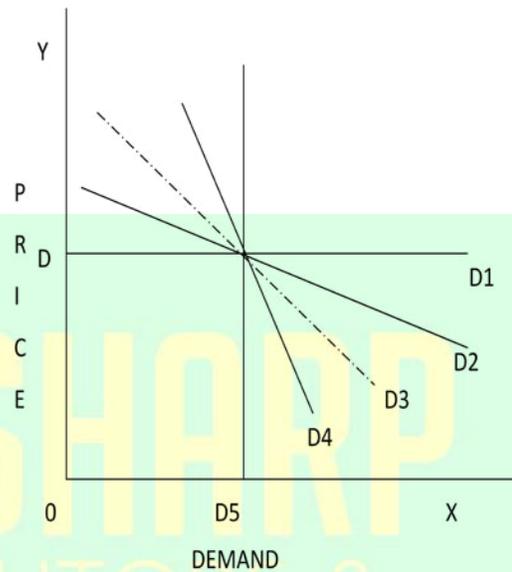
If E_p is between 0 and 1 (i.e. the percentage change in demand from A to B is smaller than the percentage change in price), then **demand is inelastic**. Producers know that the change in demand will be proportionately smaller than the percentage change in price. The diagram shows a very steep curve, although it is **not** vertical. Notice that the increase in price is huge (from P_1 to P_2), but the fall in the quantity demanded is relatively small (from Q_1 to Q_2). $\%Q_d < \%P$, and so demand is **inelastic**.



e. Elasticity = 0

If $E_p = 0$ then demand is said to be **perfectly inelastic**. This means that demand does not change at all when the price changes – the demand curve will be vertical

All Kinds of Demand Curves can be shown in one diagram



Where

D1) Perfectly elastic demand

D2) Relatively elastic demand

D3) Elasticity of demand equal to unity

D4) Relatively inelastic demand

D5) Perfectly inelastic demand

Factors Affecting Price Elasticity of Demand

- Number of substitutes:** the larger the number of close substitutes for the good then the easier the household can shift to alternative goods if the price increases. Generally, the larger the number of close substitutes, the more elastic the price elasticity of demand.
For instance, let's say you like sugar free chewing gum and you currently buy your favorite pack at Rs. 25. If the prices of your favorite pack goes up to Rs. 30, you then decide to switch to one of the brands that are still Rs. 25. This means that the alternatives in the market have created a sharp drop in demand despite only a slight increase in price.
- Degree of necessity or luxury:** Luxury goods tend to have greater elasticity. If the good is a necessity item then the demand is unlikely to change for a given change in price. This implies that necessity goods have inelastic price elasticity of demand.
- Price of the good as a proportion of income:** It can be argued that goods that account for a large proportion of disposable income tend to be elastic. This is due to consumers being more aware of small changes in price of expensive goods compared to small changes in the price of inexpensive goods.
- Time period considered:** elasticity tends to be greater over the long run because consumers have more time to adjust their behaviour to price changes.
- Income of the consumers:** If the income level of the consumers is high, the elasticity of demand is less. It is because change in the price will not affect the quantity demanded by a greater proportion. But in low income groups, the elasticity of demand is high.
- Number of uses of the commodity:** If the commodity can be used for a large number of purposes, its demand will go up with a fall in price. Therefore, the demand for the product will be elastic in nature; on the other hand single use goods will have an inelastic demand.