Elasticity

The degree to which a demand or supply curve reacts to a change in price is the curve's elasticity. Elasticity varies among products because some products may be more essential to the consumer. Products that are necessities are more insensitive to price changes because consumers would continue buying these products despite price increases. Conversely, a price increase of a good or service that is considered less of a necessity will deter more consumers because the opportunity cost of buying the product will become too high.

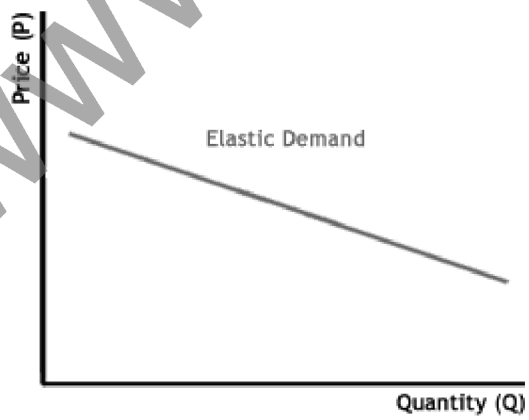
A good or service is considered to be highly elastic if a slight change in price leads to a sharp change in the quantity demanded or supplied. Usually these kinds of products are readily available in the market and a person may not necessarily need them in his or her daily life. On the other hand, an inelastic good or service is one in which changes in price witness only modest changes in the quantity demanded or supplied, if any at all. These goods tend to be things that are more of a necessity to the consumer in his or her daily life.

To determine the elasticity of the supply or demand curves, we can use this simple equation:

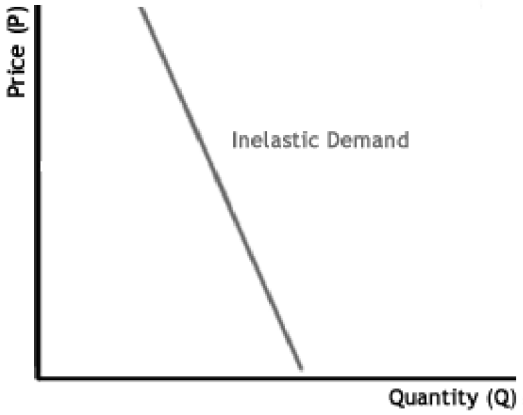
Elasticity = (% change in quantity / % change in price)

If elasticity is greater than or equal to one, the curve is considered to be elastic. If it is less than one, the curve is said to be inelastic.

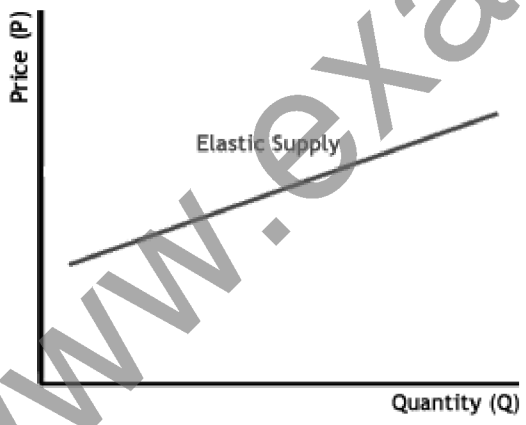
As we mentioned previously, the demand curve is a negative slope, and if there is a large decrease in the quantity demanded with a small increase in price, the demand curve looks flatter, or more horizontal. This flatter curve means that the good or service in question is elastic.



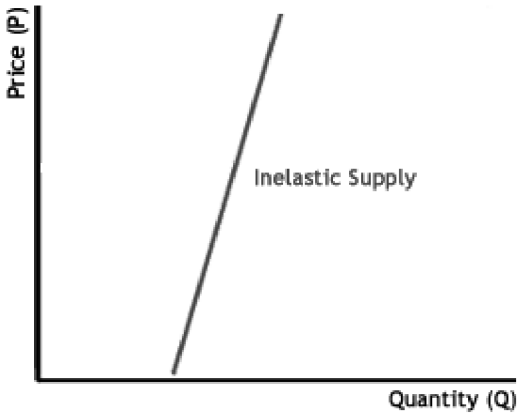
Meanwhile, inelastic demand is represented with a much more upright curve as quantity changes little with a large movement in price.



Elasticity of supply works similarly. If a change in price results in a big change in the amount supplied, the supply curve appears flatter and is considered elastic. Elasticity in this case would be greater than or equal to one.



On the other hand, if a big change in price only results in a minor change in the quantity supplied, the supply curve is steeper and its elasticity would be less than one.



A. Factors Affecting Demand Elasticity
There are three main factors that influence a demand's price elasticity:

1. The availability of substitutes - This is probably the most important factor influencing the elasticity of a good or service. In general, the more substitutes the more elastic the demand will be. For example, if the price of a cup of coffee went up by $0.25, consumers could replace their morning caffeine with a cup of tea. This means that coffee is an elastic good because a raise in price will cause a large decrease in demand as consumers start buying more tea instead of coffee.

However, if the price of caffeine were to go up as a whole, we would probably see little change in the consumption of coffee or tea because there are few substitutes for caffeine. Most people are not willing to give up their morning cup of caffeine no matter what the price. We would say, therefore, that caffeine is an inelastic product because of its lack of substitutes. Thus, while a product within an industry is elastic due to the availability of substitutes, the industry itself tends to be inelastic. Usually, unique goods such as diamonds are inelastic because they have few if any substitutes.

2. Amount of income available to spend on the good - This factor affecting demand elasticity refers to the total a person can spend on a particular good or service. Thus, if the price of a can of Coke goes up from $0.50 to $1 and income stays the same, the income that is available to spend on coke, which is $2, is now enough for only two rather than four cans of Coke. In other words, the consumer is forced to reduce his or her demand of Coke. Thus if there is an increase in price and no change in the amount of income available to spend on the good, there will be an elastic reaction in demand; demand will be sensitive to a change in price if there is no change in income.

3. Time - The third influential factor is time. If the price of cigarettes goes up $2 per pack, a smoker with very few available substitutes will most likely continue buying his or her daily cigarettes. This means that tobacco is inelastic because the change in price will not have a significant influence on the quantity demanded. However, if that smoker finds that he or she cannot afford to spend the extra $2 per day and begins to kick the habit over a period of time, the

price elasticity of cigarettes for that consumer becomes elastic in the long run.

Income Elasticity of Demand

In the second factor outlined above, we saw that if price increases while income stays the same, demand will decrease. It follows, then, that if there is an increase in income, demand tends to increase as well. The degree to which an increase in income will cause an increase in demand is called income elasticity of demand, which can be expressed in the following equation:

$$EDy = \frac{((Q\ current - Q\ previous) / (Q\ previous))}{((Y\ current - Y\ previous) / Y\ previous))}$$

ED = Elasticity of Demand
Q = Quantity
Y = Income
EDy = Income Elasticity of Demand

If EDy is greater than one, demand for the item is considered to have a high income elasticity. If however EDy is less than one, demand is considered to be income inelastic. Luxury items usually have higher income elasticity because when people have a higher income, they don't have to forfeit as much to buy these luxury it ms. Let's look at an example of a luxury good: air travel.

Bob has just received a $10,000 increase in his salary, giving him a total of $80,000 per annum. With this higher purchasing power, he decides that he can now afford air travel twice a year instead of his previous once a year. With the following equation we can calculate income demand elasticity:

$$EDy = \frac{((2-1) / (1)) = 1}{((80000-70000)) / (70000) = 0.14}$$

$$EDy = 1 / 0.14 = 7$$

Income elasticity of demand for Bob's air travel is seven - highly elastic.

With some goods and services, we may actually notice a decrease in demand as income increases. These are considered goods and services of inferior quality that will be dropped by a consumer who receives a salary increase. An example may be the increase in the demand of

DVDs as opposed to video cassettes, which are generally considered to be of lower quality. Products for which the demand decreases as income increases have an income elasticity of less than zero. Products that witness no change in demand despite a change in income usually have an income elasticity of zero - these goods and services are considered necessities.

Utility

We have already seen that the focus of economics is to understand the problem of scarcity: the problem of fulfilling the unlimited wants of humankind with limited and/or scarce reso rces. Because of scarcity, economies need to allocate their resources efficiently. Underlying the laws of demand and supply is the concept of utility, which represents the advantage or fulfillment a person receives from consuming a good or service. Utility, then, explains how individuals and economies aim to gain optimal satisfaction in dealing with scarcity.

Utility is an abstract concept rather than a concrete, observable quantity. The units to which we assign an "amount" of utility, therefore, are arbitrary, representing a r lative value. Total utility is the aggregate sum of satisfaction or benefit that an individual gains f om consuming a given amount of goods or services in an economy. The amount of a person s total utility corresponds to the person's level of consumption. Usually, the more the per on consumes, the larger his or her total utility will be. Marginal utility is the additional satisfaction, or amount of utility, gained from each extra unit of consumption.

Although total utility usually increases as more of a g od is consumed, marginal utility usually decreases with each additional increase in the consumption of a good. This decrease demonstrates the law of diminishing marginal utility. Because there is a certain threshold of satisfaction, the consumer will no lon er ec ive the same pleasure from consumption once that threshold is crossed. In other word , total utility will increase at a slower pace as an individual increases the quantity consumed.

Take, for example, a chocolate bar. Let's say that after eating one chocolate bar your sweet tooth has been satisfied. Your marginal utility (and total utility) after eating one chocolate bar will be quite high. But if you eat more chocolate bars, the pleasure of each additional chocolate bar will be less than the pleasure you received from eating the one before - probably because you are starting to feel full or you have had too many sweets for one day.

The law of diminishing marginal utility helps economists understand the law of demand and the negative sloping demand curve. The less of something you have, the more satisfaction you gain fro each additional unit you consume; the marginal utility you gain from that product is ther fore higher, giving you a higher willingness to pay more for it. Prices are lower at a higher quant ty demanded because your additional satisfaction diminishes as you demand more.

In order to determine what a consumer's utility and total utility are, economists turn to consumer demand theory, which studies consumer behavior and satisfaction. Economists assume the consumer is rational and will thus maximize his or her total utility by purchasing a combination of different products rather than more of one particular product. Thus, instead of spending all of your money on three chocolate bars, which has a total utility of 85, you should instead purchase

the one chocolate bar, which has a utility of 70, and perhaps a glass of milk, which has a utility of 50. This combination will give you a maximized total utility of 120 but at the same cost as the three chocolate bars.

Monopolies, Oligopolies and Perfect Competition

Economists assume that there are a number of different buyers and sellers in the marketplace. This means that we have competition in the market, which allows price to change in response to changes in supply and demand. Furthermore, for almost every product there are substitutes, so if one product becomes too expensive, a buyer can choose a cheaper substitute instead. In a market with many buyers and sellers, both the consumer and the supplier have equal ability to influence price.

In some industries, there are no substitutes and there is no competition. In a market that has only one or few suppliers of a good or service, the producer(s) can control price, meaning that a consumer does not have choice, cannot maximize his or her total utility and has have very little influence over the price of goods.

A monopoly is a market structure in which there is only one producer/seller for a product. In other words, the single business *is* the industry. Entry into such a market is restricted due to high costs or other impediments, which may be economic, social or political. For instance, a government can create a monopoly over an industry that it wants to control, such as electricity. Another reason for the barriers against entry into a monopolistic industry is that oftentimes, one entity has the exclusive rights to a natural resource. For example, in Saudi Arabia the government has sole control over the oil industry. A monopoly may also form when a company has a copyright or patent that prevents others from entering the market. Pfizer, for instance, had a patent on Viagra.

In an oligopoly, there are only a few firms that make up an industry. This select group of firms has control over the price and, like a monopoly, an oligopoly has high barriers to entry. The products that the oligopolistic firms produce are often nearly identical and, therefore, the companies, which are competing for market share, are interdependent as a result of market forces. Assume, for example, that an economy needs only 100 widgets. Company X produces 50 widgets and its competitor, Company Y, produces the other 50. The prices of the two brands will be interdependent and, therefore, similar. So, if Company X starts selling the widgets at a lower price, it will get a greater market share, thereby forcing Company Y to lower its prices as well.

There are two extreme forms of market structure: monopoly and, its opposite, perfect competition. Perfect competition is characterized by many buyers and sellers, many products that are similar in nature and, as a result, many substitutes. Perfect competition means there are few, if any, barriers to entry for new companies, and prices are determined by supply and demand. Thus, producers in a perfectly competitive market are subject to the prices determined by the market and do not have any leverage. For example, in a perfectly competitive market, should a single firm decide to increase its selling price of a good, the consumers can just turn to the nearest competitor for a better price, causing any firm that increases its prices to lose market share and profits.