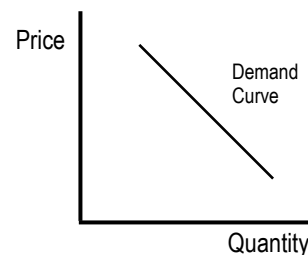


The Market

- * Many definitions:
 - o A physical place where a product is bought and sold
 - o All the buyers and sellers of a particular good or services
 - o The demand that exists for a particular product or service
 - o Process by which a buyer and seller arrive at a mutually acceptable price and quantity
- * A *competitive market* is a market in which there are many buyers and sellers so that each has a negligible impact on the market price.

Demand

- * The quantity of a good or service that buyers will purchase at various prices during a given period of time
- * Demand exists only if there is a desire to buy and the financial resources needed to make the purchase.
- * Quantity demanded depends on the price.
- * Law of Demand: the quantity demanded varies inversely with the price, as long as other things do not change.



Demand Schedule and Curve

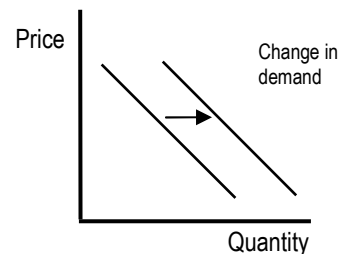
- * Schedule: Table that shows the quantity demanded at each price.
- * Curve: the demand curve slopes down to the right to show the inverse relationship between price and quantity

Demand vs. Quantity Demanded

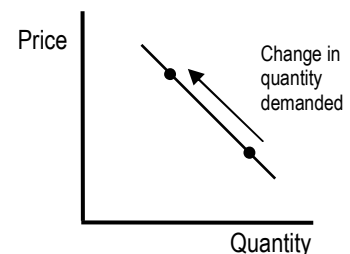
- * Demand: Demand is the range of quantities that buyers are willing and able to buy at a range of demand prices. It is ALL points that make up a demand curve.
- * Quantity Demanded: Quantity demand is a specific quantity that buyers are willing and able to buy at a specific demand price. It is but ONE point on a demand curve.

Changes in Demand

- * Change in Demand:
 - o A change in demand is a change in the ENTIRE demand relation.
 - o Shifting the entire demand curve.
 - o Entire set of prices and quantities is changing.
- * Caused by a change in the five demand determinants.
- * An increase in demand will shift the curve to the right. At every price, the quantity demanded is greater than before.



- * Change in Quantity Demanded:
 - o Change from one price-quantity pair on an existing demand curve to a new price-quantity pair on the SAME demand curve.
 - o Movement along the demand curve.
 - o Caused by a change in price.



Reasons for the Downward Sloping Curve

- * As the good becomes more expensive, people switch to substitutes.
- * As the good becomes more expensive, people can't afford to buy as much of it.
- * As an individual consumes more of a good, at some point his or her marginal benefit from consuming an additional unit will decline

Demand Determinants

Buyer's Income:

- * Normal Goods: When a rise in income increases the demand for a good - the normal case - we say that the good is a normal good.
- * Inferior Goods: When a rise in income decreases the demand for a good, it is an inferior good.

Buyer's Preferences/Consumer's Taste

- * A change in consumers tastes and preferences also affects demand. Eg. Nutrition, fashion, safety.

Buyer's expectations

- * Expectation of future price changes will alter current demand (e.g. gas price increase in the immediate future will cause consumer to fill their tanks earlier)

Other prices

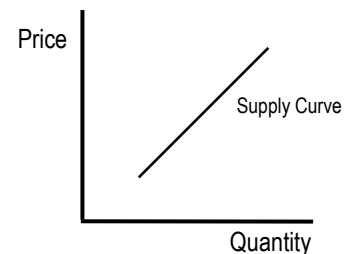
- * Price of a complementary good - Two goods are **complements** if a fall in the price of one good makes people more willing to buy the other good.
- * Price of a substitute good - Two goods are **substitutes** if a fall in the price of one of the goods makes consumers less willing to buy the other good

Number of buyers

- * More buyers = more demand & fewer buyers = less demand

Supply

- * Quantity sellers will offer for sale at various prices during a given period of time.
- * Law of Supply: The quantity supplied will increase if price increases and fall if price falls, as long as other things do not change.
- * The supply curve slopes up to the right to show the corresponding relationship between price and quantity.

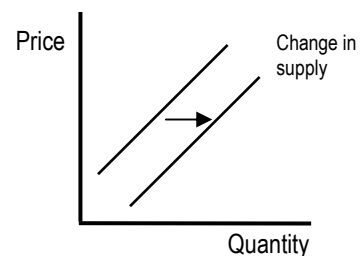


Supply vs. Quantity Supplied

- * Quantity Supplied: This is the specific amount that sellers are willing and able to sell at a specific price. It is indicated as a single point on the supply curve.
- * Supply: This, in contrast, is the entire set of price-quantity pairs that reflect sellers willingness and ability to sell a good. It is the entire supply curve.

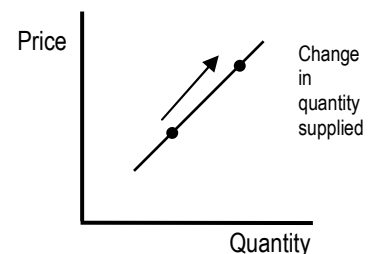
Changes in Supply

- * A Change in Quantity Supplied: This is a change in the specific amount of the good that sellers are willing and able to sell. It is caused by a change in the supply price and is indicated by a movement along the supply curve from one point to another.
- * A Change in Supply: This is a change in the overall supply relation, a change in all price-quantity pairs. It is caused by a change in one of the five supply determinants and is indicated by a shift of the supply curve.



Why does the supply curve slope upward?

- * As the production of any goods is expanded, those resources with the lowest opportunity costs are used first. The higher the price, the more likely it is that more inefficient resources will be used
- * The marginal cost of producing a good often rises as more is produced.



Supply Determinants

Cost of Factors of Production

- * Cost in natural, capital or labour resources increase (decrease) , supply decreases (increases)

Technology

- * New technology often reduces suppliers' costs resulting in increased supply

Prices/Profits of Other Goods

- * If producer expects to gain more (less) profit from another item, then supply decreases (increases)

Seller's Expectations

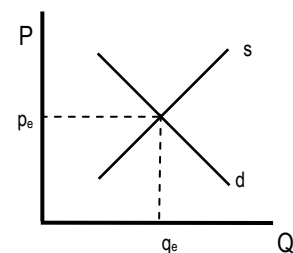
- * If producer expects prices to increase (decrease) in the future, they will increase (decrease) future supply.

Number of Sellers

- * More producers increase supply, fewer producers decrease supply

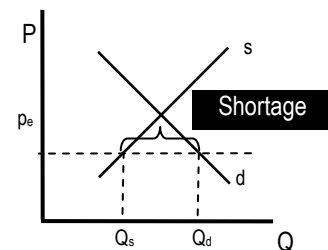
Market Equilibrium

- * *Equilibrium* refers to a situation in which the price has reached the level where quantity supplied equals quantity demanded.
- * Equilibrium price (or market clearing price) is the price set by the interaction of supply and demand in which the absence of surpluses or shortages in the market means there is no tendency for the price to change.



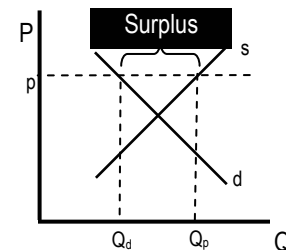
Shortage

- * In a shortage, the price is too low resulting in a lack of goods.
- * Consumers demand more than suppliers will produce.
- * The supplier will increase prices until the equilibrium price is reached.



Surplus

- * In a surplus, the price is too high resulting in excess goods.
- * Suppliers produce more than customers demand.
- * The supplier will decrease prices until the equilibrium price is reached.



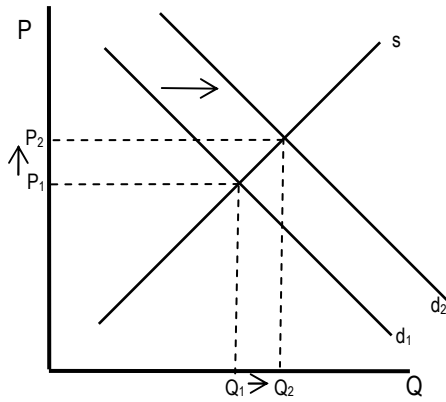
Equilibrium Point and Changes in Determinants

- * A change in a demand determinant will shift the demand curve and change the quantity supplied
- * A change in a supply determinant will shift the supply curve and change the quantity demanded.

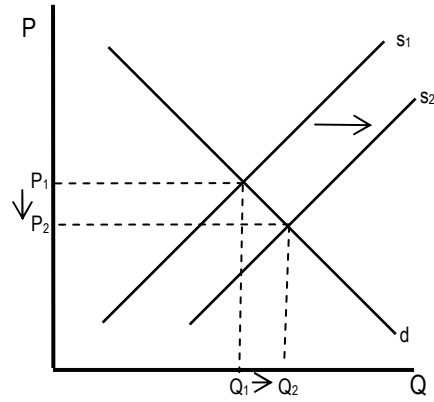
Changes in Market Equilibrium

- * First, a demand (or supply) determinant changes.
- * Second, this determinant change causes the demand curve (or supply curve) to shift.
- * Third, the change in demand (or supply) causes either a shortage or a surplus imbalance in the market. The market is in a temporary state of disequilibrium.
- * Fourth, the shortage and surplus imbalance causes the price of the good to change.
- * Fifth, the change in price causes a change in quantity demanded (and supplied).
- * Sixth, the change in quantity demanded (and supplied) eliminates the shortage or surplus and restores market equilibrium.

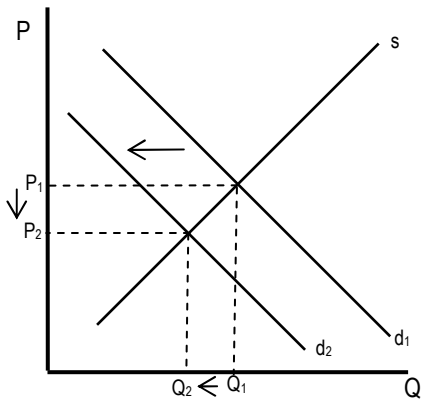
Shifts in Supply and Demand



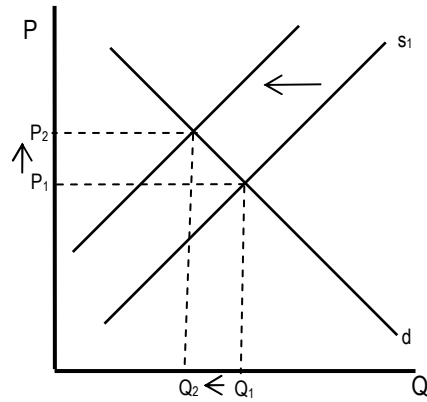
Increase in Demand



Increase in Supply



Decrease in Demand



Decrease in Supply

S2

Simultaneous Shifts of Supply and Demand	Supply Increases	Supply Decreases
Demand Increases	Price: ambiguous Quantity: up	Price: up Quantity: ambiguous
Demand Decreases	Price: down Quantity: ambiguous	Price: ambiguous Quantity: down

Elasticity

- * The responsiveness of quantities demanded and supplied to changes in price

$$\text{Coefficient of elasticity of demand} = \frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$$

$$E_d = \frac{\Delta Q_d \text{ is smaller}}{\Delta P_d \text{ is larger}}$$

Price Elasticity of Demand

- * The effect of the change is the numerator of the equation (people buying more or less)
- * The cause is the denominator (the change in price that affects people's buying decisions)

Formula for Calculating Elasticity

$$E_d = \frac{\frac{Q_2 - Q_1}{(Q_1 + Q_2) / 2}}{\frac{P_2 - P_1}{(P_1 + P_2) / 2}}$$

Q₁ is Initial Quantity
P₁ is Initial Price

Q₂ is Final Quantity
P₂ is Final Price

$$E_d = \frac{9.5 - 10}{\frac{(9.5 + 10) / 2}{(0.54 + 0.5) / 2}}$$

Example

- * A gas station sells 10 million litres of gas a month for \$0.50 per litre. If the price is raised to \$0.54 per litre, the quantity demanded falls to 9.5 million litres.

$$\begin{array}{ll} Q_1 = 10 & Q_2 = 9.5 \\ P_1 = 0.50 & P_2 = 0.54 \end{array}$$

$$E_d = \frac{-0.5}{\frac{9.75}{0.04} \cdot 0.52}$$

$$E_d = \frac{-0.0513}{0.0769}$$

$$E_d = -0.67$$

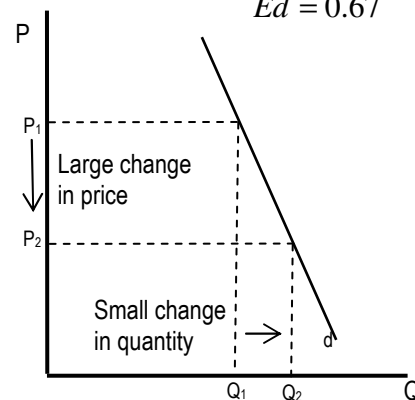
$$E_d = 0.67$$

Inelastic Demand

- * If the elasticity of demand is **less** than one, demand is inelastic.
- * This occurs when the percentage change in quantity demanded is **less** than percentage change in price.

$$E_d = \frac{\Delta Q_d \text{ is smaller}}{\Delta P_d \text{ is larger}}$$

- * The demand that exists when price changes do not result in significant changes in the quantity of a product demanded.
- * Quantity is less responsive to changes in price.
- * Visually, it is a steep line

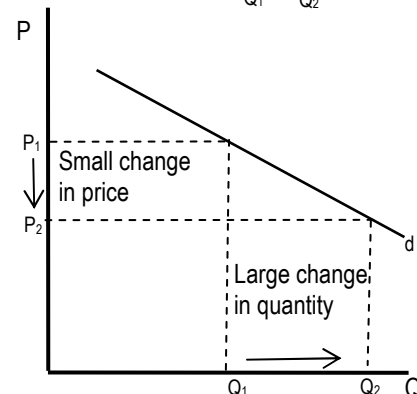


Elastic Demand

- * If the elasticity of demand is **greater** than one, demand is elastic.
- * This occurs when the percentage change in quantity demanded is **greater** than percentage change in price.

$$E_d = \frac{\Delta Q_d \text{ is larger}}{\Delta P_d \text{ is smaller}}$$

- * Demand for a product that changes substantially in response to small changes in price.
- * Quantity is more responsive to changes in price.
- * Visually, it is a less steep line.



Unitary Elasticity

- * When the % change in quantity is the same as the % change in price, demand is unit elastic. The elasticity of demand = 1.
- * A change in price will result in an identical change in demand.
- * On a graph, a unitary elastic demand curve will have a slope of 1.

Elasticity and Revenue

- * When a seller raises the price of a good, there are two countervailing effects in action (except in the rare case of a good with perfectly elastic or perfectly inelastic demand):
 - o **A price effect:** After a price increase, each unit sold sells at a higher price, which tends to raise revenue.
 - o **A quantity effect:** After a price increase, fewer units are sold, which tends to lower revenue.
- * For goods with inelastic demand coefficients, when price rises, total revenues rise. When price falls, total revenue falls.
- * For goods with elastic demand coefficients, when price rises, total revenues fall. When price falls, total revenues rise.
- * For goods with unitary demand coefficients, when price rises or falls, total revenues stay the same.

Factors Affecting Demand Elasticity

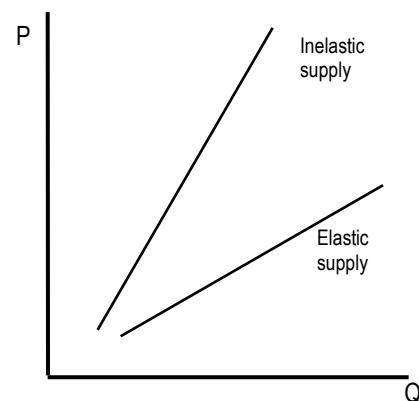
- * **Availability of substitutes:** goods that have substitutes generally are more elastic than goods that don't.
- * **Nature of the item:** goods that are necessities tend to be more inelastic than goods that are considered to be luxuries.
- * **Fraction of income spent on the item:** goods that are expensive (take up a larger part of income) are elastic; goods that take up a small percentage of income are inelastic.
- * **Amount of time available:** goods, over time, become more elastic as consumers find substitutes for them.

Two Extreme Cases of Price Elasticity of Demand:

- * Demand is **perfectly inelastic** when the quantity demanded does not respond at all to changes in the price. When demand is perfectly inelastic, the demand curve is a vertical line.
- * Demand is **perfectly elastic** when any price increase will cause the quantity demanded to drop to zero. When demand is perfectly elastic, the demand curve is a horizontal line.

Elasticity of Supply

- * Measures how responsive the quantity supplied by a seller is to a rise or fall in price.
- * Coefficient greater than 1 = elastic supply
 - o When price increases, the manufacturer is able to increase quantity supplied at an even greater rate.
- * Coefficient less than 1 = inelastic supply
 - o When price increases, the seller cannot increase the quantity supplied by a greater percentage than the percentage increase in price.
- * Coefficient equals 1 = unitary elasticity
 - o When price increases, the seller can just match the percentage increase in price with a percentage increase in quantity supplied.



Factors Affecting Supply Elasticity

- * Time
 - The longer the time period a seller has to increase supply, the more elastic the supply will be.
- * Ease of storage
 - Products that are easier to store have a higher elasticity than products that are difficult to store.
- * Cost factors
 - The less it costs to increase production, the more elastic the supply is.

Utility Theory

- * Total Utility is the full satisfaction of a consumer's wants or needs through the consumption of specific goods or services.
- * Marginal utility is the additional satisfaction, or amount of utility, gained from each extra unit of consumption
- * Utility is measured in utils which are units of satisfaction
- * Although total utility usually increases as more of a good is consumed, marginal utility usually decreases with each additional increase in the consumption of a good.
- * Demonstrates the law of diminishing marginal utility.
- * Total utility will increase at a slower pace as an individual increases the quantity consumed.

Utility Maximizing Rule

- * The consumer's money income should be allocated so that the last dollar spent on each product yields the same amount of extra (marginal) utility.

Substitution and Income Effects

- * The **substitution effect** of a change in the price of a good is the change in the quantity consumed of that good as the consumer substitutes the good that has become relatively cheaper for the good that has become relatively more expensive.
- * The **income effect** of a change in the price of a good is the change in the quantity consumed of that good that results from a change in the consumer's purchasing power due to the change in the price of the good.