Supply and Demand — Competitive Markets

- A market: a group of buyers and sellers of a good.
- A competitive market: a market with many buyers and sellers, each with a negligible effect on the price.
- In a perfectly competitive market:
    - All goods are homogenous.
    - Buyers and sellers alike are so great in number that not one can affect the market price, price takers…
- We will be assuming that markets are perfectly competitive.
    - Monopolies will be discussed at a later time...
    - Other types of markets include monopolistic competition (many sellers; product differentiation) and oligopoly (few sellers).
    - With this assumption, we will build and use the *supply-demand model.*

Demand

- The quantity demanded of any good is the amount of the good that buyers are willing and able to purchase.
- Law of Demand: the quantity demanded of a good falls when the price of the good rises, other variables equal (an empirical finding).
- Demand schedule: a table that shows the relationship between the price of a good and the quantity demanded.
- Use the table of values to create a graph (diagram) as a visual representation of the demand schedule and curve.directly related to its price.

Market versus Individual Demand

- The quantity demanded in the market is the sum of the quantities demanded by all buyers at each price.

Demand Curve Shifters

- The demand curve shows how price affects quantity demanded, other things being equal.
    - As price falls, the quantity demanded increases…
    - This is reflected by a movement along the demand curve.
- Other things are non-price determinants of demand…
    - Things that influence a buyer's demand for a good other than the good's price.
    - Changes in them shift the demand curve — they either increase or decrease demand.
- Non-price determinants of demand include:
    - Number of buyers (e.g. population growth)
        - Suppose the number of buyers increases. Then, for any given price, the quantity demanded will be higher.
            - An increase in the number of buyers increases the quantity demanded at each price, and shifts the demand curve right.
    - Income (normal vs. inferior goods)
        - In relation to income, there are two types of goods:
            - Normal goods — those you want more of when your income increases…

        - Something that you want more of when you have more money (i.e. things of higher quality, luxuries items...)
        - Demand for a normal good is positively related to income.
            - An increase in income results in an increase in the quantity demanded at each price, which shifts the demand curve to the right.
    - Inferior goods — those you want less of when your income increases…
        - Items that are "cheaper", more affordable…
        - Alternately, demand for an inferior good is negatively related to income…
            - An increase in income causes a decrease in the quantity demanded at each price, which shifts the demand curve for an inferior good to the left.
- Prices of related goods (substitutes and complements)
    - When talking about related goods, there are two types:
        - Substitutes: two goods are substitutes if an increase in the price of one causes in an increase in demand for the other…
            - In other words, one good may be substituted for the other should there be a change in price — a negative relationship.
        - Complements: two goods are complements if an increase in the price of one causes a decrease in demand for the other (and vice versa)...
            - The two goods are positively related — if the demand for one good rises, the demand for the other will rise accordingly…
- Tastes
    - Anything that causes tastes or preferences to favour a good will increase the demand for that good, shifting its demand curve right.
- Expectations
    - Expectations affect consumers' buying decisions.
- Time

Factor (Determinant, Variable)	A Change in the Factor...
Price	...causes a movement along the demand curve (a change in the quantity demanded)
Number of Buyers	...shifts the demand curve (a change in demand)
Income	...shifts the demand curve (a change in demand)
Prices of Related Goods	...shifts the demand curve (a change in demand)
Tastes	...shifts the demand curve (a change in demand)
Expectations	...shifts the demand curve (a change in demand)
Time	...shifts the demand curve (a change in demand)

Supply

- The quantity supplied of any good is the amount of the good that sellers are willing and able to sell.
- Law of supply: typically, the quantity supplied of a good rises when the price of the good rises, other things equal.
- Supply schedule: a table that shows the relationship between the price of a good and the quantity supplied.
- Again, the supply schedule is used to create a visual diagram (or graph) of it (supply curve).

Market versus Individual Supply

- The quantity supplied in the market is the sum of the quantities supplied by all sellers at each price.

Supply Curve Shifters

- The supply curve shows how price affects quantity supplied, other things being equal.
    - As price rises, the quantity supplied increases.
    - This is reflected in a movement along the supply curve.
- Other things are non-price determinants of supply:
    - Things that influence a seller's supply of a good other than the good's price.
    - Changes in them shift the supply curve — either increasing or decreasing supply.
- Non-price determinants of supply include:
    - Input prices (e.g. wages, prices of capital and raw materials)
        - In other words, factors of production…
        - Suppose the price of an input falls. At each price, the quantity of the product supplied will increase.
            - A fall in input prices makes production more profitable at each output price, so firms supply a larger quantity at each price, causing the supply curve to shift right.
    - Technology
        - Determines the type and quantity of inputs required to produce a unit of output.
        - Technology is why the standard of living in many countries have risen in the past few years…
        - Improvements allows, for example, more to be produced with the same amount of inputs… Less capital and labour is necessary to produce the same amount of goods…
    - Number of sellers
        - An increase in the number of sellers increases the quantity supplied at each price, shifts the supply curve to the right.
    - Expectations
        - Example: Events in the Middle East lead to expectations of higher oil prices. Oilfield owners may respond by reducing supply to build up inventories no to sell later at a higher price.
        - Sellers may adjust supply (if their goods are not perishable) when their expectations of future prices change…
    - Time

Factor (Determinant, Variable)	A Change in the Factor...
Price	...causes a movement along the supply curve (a change in the quantity supplied)
Input Prices	...shifts the supply curve (a change in the supply)
Technology	...shifts the supply curve (a change in the supply)
Number of Sellers	...shifts the supply curve (a change in the supply)
Expectations	...shifts the supply curve (a change in the supply)
Time	...shifts the supply curve (a change in the supply)

- Q&A: What happens to the supply curve for tax return software when professional preparers raise their price? ***A good multiple choice question…***
    - The supply curve remains unchanged, as the two goods/services are substitutes for one another. A change in the price of a substitute leads to a change in the *demand curve,* not the supply curve.

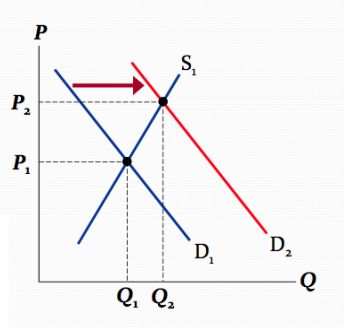
Supply & Demand Together

- Equilibrium: a point at which price has reached the level where quantity supplied equals quantity demanded.
- Equilibrium Price: the price that equates quantity supplied with quantity demanded.
- Equilibrium Quantity: the quantity supplied and demanded at the equilibrium price.
- Surplus: also known as excess supply, arises when quantity supplied exceeds quantity demanded…
    - When this occurs, sellers reduce the prices in order to increase sales (and reduce supply) — which continues until the market reaches equilibrium.
- Shortage: also known as an excess demand, arises when quantity demanded exceeds quantity supplied.
    - Should this occur, sellers raise the prices of their product, leading to a fall in demand (and rise in supply) — which in turn, reduces the shortage. The prices will rise until the market achieves equilibrium.

Bottom line: whether the price is too high or too low, the interaction between producers and consumers will lead to a natural shift towards the equilibrium.

- Three Steps to Analyze Changes to an Equilibrium
    - Decide whether the event that occurs shifts the supply curve, the demand curve, or both.
        - The events are simply the factors that affect supply or demand.
    - Decide in which direction the curve shifts.
    - Use the supply-demand diagram to determine how the shift changes price and quantity in equilibrium.

A Shift in Demand:



Example: An increase in the price of gas.

1. ***Demand*** curve shifts
2. ***Demand*** shifts right
3. The shift causes an increase in the price and quantity of hybrid cars

Note: When ***price*** rises, producers supply a larger quantity of hybrids, even though the ***supply*** curve has not shifted.

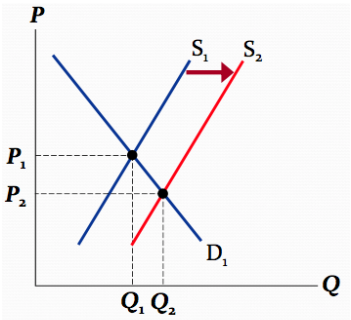
Always be careful to distinguish between a shift in a curve and a movement along a curve.

"Shifts In" versus "Movements Along a Curve"

- Changes in Supply: a shift in the supply curve occurs when a non-price determinant of supply changes (e.g. technology, costs or expectations).
- Change in the Quantity Supplied: a movement along a fixed supply curve occurs when price changes.

- Change in Demand: a shift in the demand curve occurs when a non-price determinant of demand changes (e.g. income, number of buyers).
- Change in the Quantity Demanded: a movement along a fixed demand curve occurs when price changes.

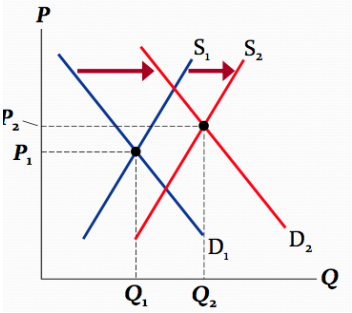
A Shift in Supply



Example: New technology reduces the cost of producing hybrid cars.

1. ***Supply*** curve shifts
2. ***Supply*** shifts right
3. The shift causes the price to fall and the quantity to rise

A Shift in Both Supply & Demand



Example: Price of gas rises and new technology reduces production costs

1. Both curves shift
2. Both shift right
3. ***Quantity*** rises, but the effect on ***price*** is ***ambiguous***. If demand increases more than supply, ***price*** rises. ***But,*** if supply increases more than demand, the ***price*** falls.

Lesson: Prices Adjust to Allocate Resources

- Principle #6: ***Markets are usually a good way to organize economic activity.***
- In market economies, prices adjust to balance supply and demand.
- These equilibrium prices are the signals that guide economic decisions and thereby allocate scarce resources.

Microeconomic theory is also referred to as "price theory".

RE: Market Forces of Supply & Demand

- A competitive market has many buyers and sellers, each of whom has little to no influence on the market price.
- Economists use the supply and demand model to analyze competitive markets.
- The downward-sloping demand curve reflects the ***Law of Demand,*** which states that the quantity buyers demand of a good varies inversely with the good's price.
    - Besides price, demand depends on other factors — buyer's incomes, tastes, expectations, the prices of substitutes and complements, and the number of buyers. If any one of these factors changes, the demand curve shifts.
- The upward-sloping supply curve reflects the ***Law of Supply***, which states that the quantity sellers supply varies positively with the good's price.
    - Besides price, supply depends on other factors — input prices, technology, expectations, and the number of sellers. If any one of these factors changes, the supply curve shifts.
- The intersection of the demand and supply curves determines market equilibrium.

    - At the equilibrium price, quantity supplied equals quantity demanded.
- If the market price is:
    - above its equilibrium value, a surplus results (supply exceeds demand), which causes the price to fall.
    - below its equilibrium value, a shortage occurs (demand exceeds supply), which leads to rising prices.