

# Demand, Supply and Market Equilibrium

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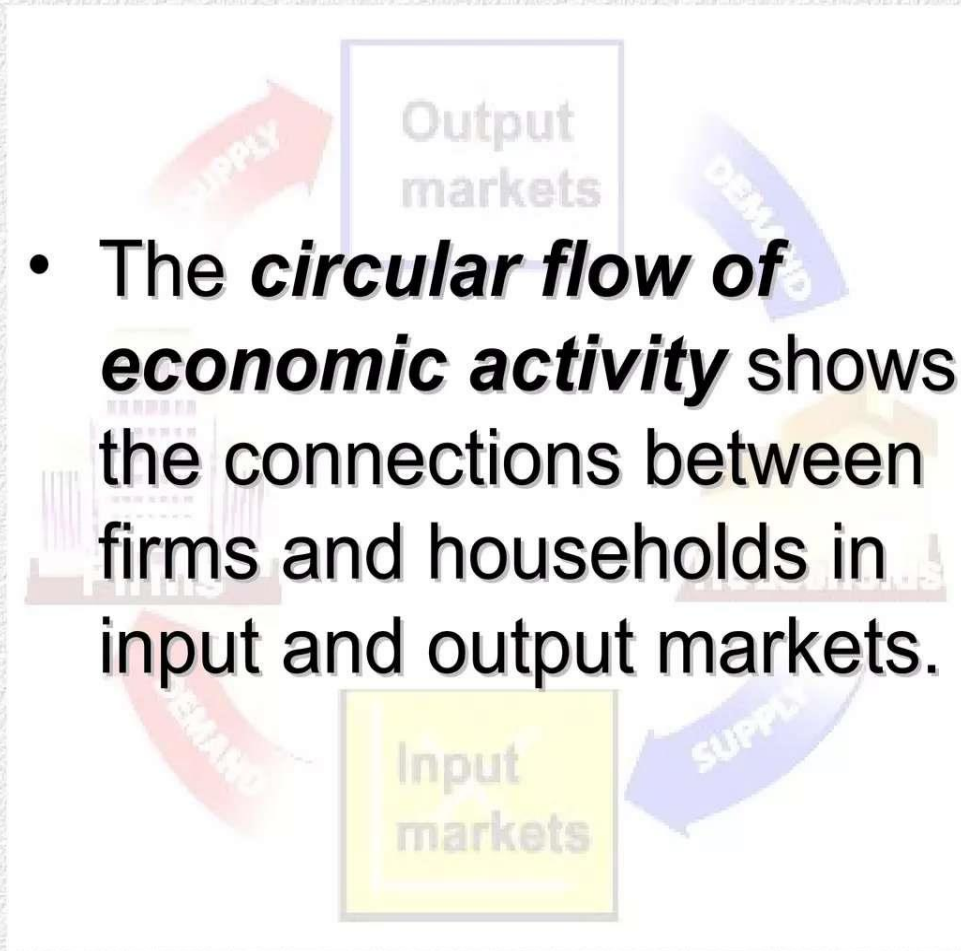
# The Basic Decision-Making Units

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- A ***firm*** is an organization that transforms resources (inputs) into products (outputs). Firms are the primary producing units in a market economy.
- An ***entrepreneur*** is a person who organizes, manages, and assumes the risks of a firm, taking a new idea or a new product and turning it into a successful business.
- ***Households*** are the consuming units in an economy.

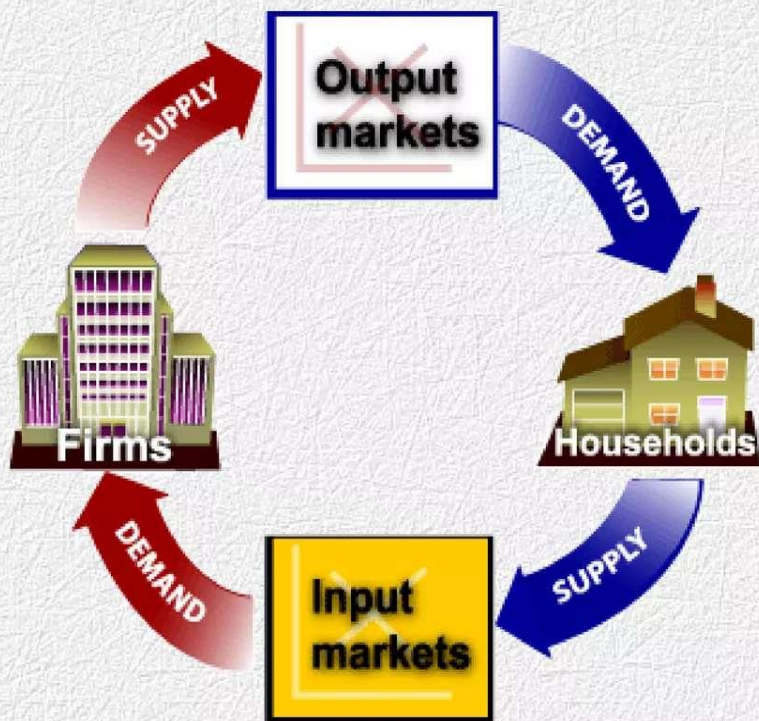
# The Circular Flow of Economic Activity

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- The diagram illustrates the circular flow of economic activity between firms and households. It features two central boxes: a blue box at the top labeled 'Output markets' and a yellow box at the bottom labeled 'Input markets'. On the left side, there is a red arrow pointing upwards labeled 'Supply' and a red arrow pointing downwards labeled 'Demand'. On the right side, there is a blue arrow pointing downwards labeled 'Demand' and a blue arrow pointing upwards labeled 'Supply'. The background includes faint icons of a factory labeled 'Firms' and a house labeled 'Households'.
- The ***circular flow of economic activity*** shows the connections between firms and households in input and output markets.

# Input Markets and Output Markets

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- ***Output, or product, markets*** are the markets in which goods and services are exchanged.
- ***Input markets*** are the markets in which resources—labor, capital, and land—used to produce products, are exchanged.
- Payments flow in the opposite direction as the physical flow of resources, goods, and services (counterclockwise).

# Input Markets

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Input markets include:

- The ***labor market***, in which households supply work for wages to firms that demand labor.
- The ***capital market***, in which households supply their savings, for interest or for claims to future profits, to firms that demand funds to buy capital goods.
- The ***land market***, in which households supply land or other real property in exchange for rent.

# Determinants of Household Demand

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A household's decision about the quantity of a particular output to demand depends on:

- The ***price of the product*** in question.
- The ***income*** available to the household.
- The household's amount of ***accumulated wealth***.
- The ***prices of related products*** available to the household.
- The household's ***tastes and preferences***.
- The household's ***expectations*** about future income, wealth, and prices.

# Quantity Demanded

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- ***Quantity demanded*** is the amount (number of units) of a product that a household would buy in a given time period if it could buy all it wanted at the current market price.

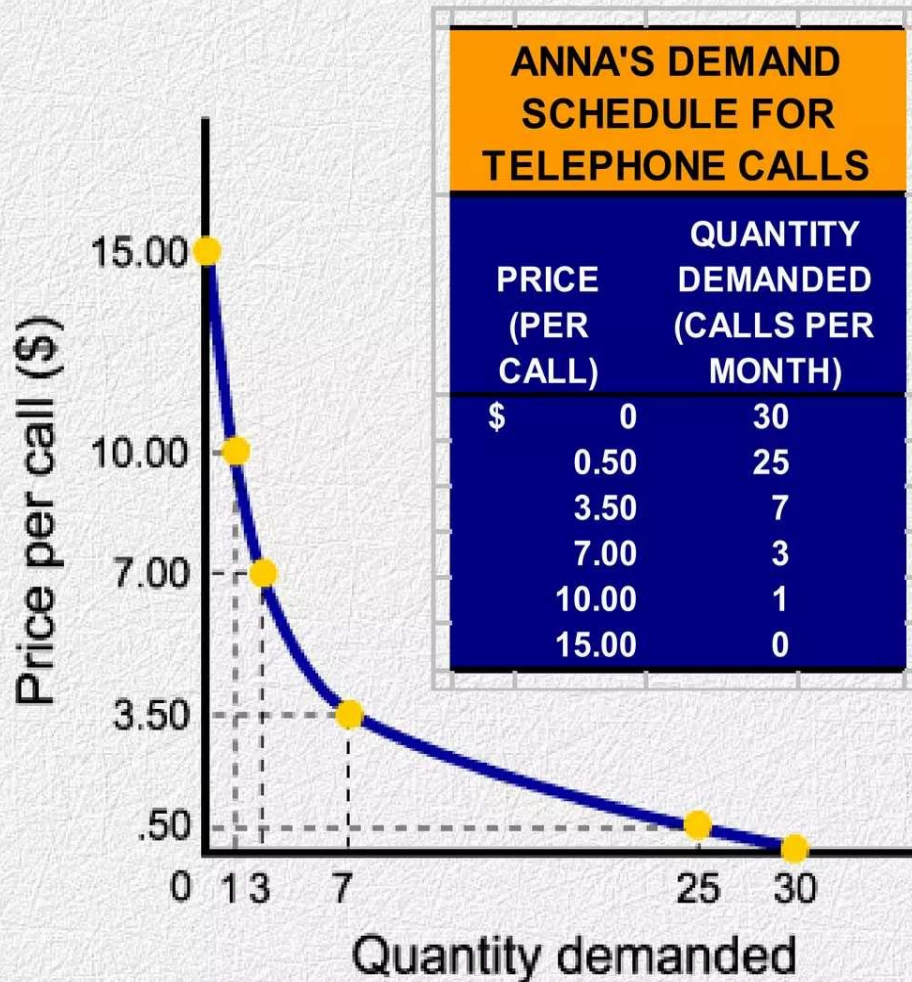
# Demand in Output Markets

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ANNA'S DEMAND SCHEDULE FOR TELEPHONE CALLS		
PRICE (PER CALL)	QUANTITY DEMANDED (CALLS PER MONTH)	
\$ 0	0	30
0.50	0	25
3.50	0	7
7.00	0	3
10.00	0	1
15.00	0	0

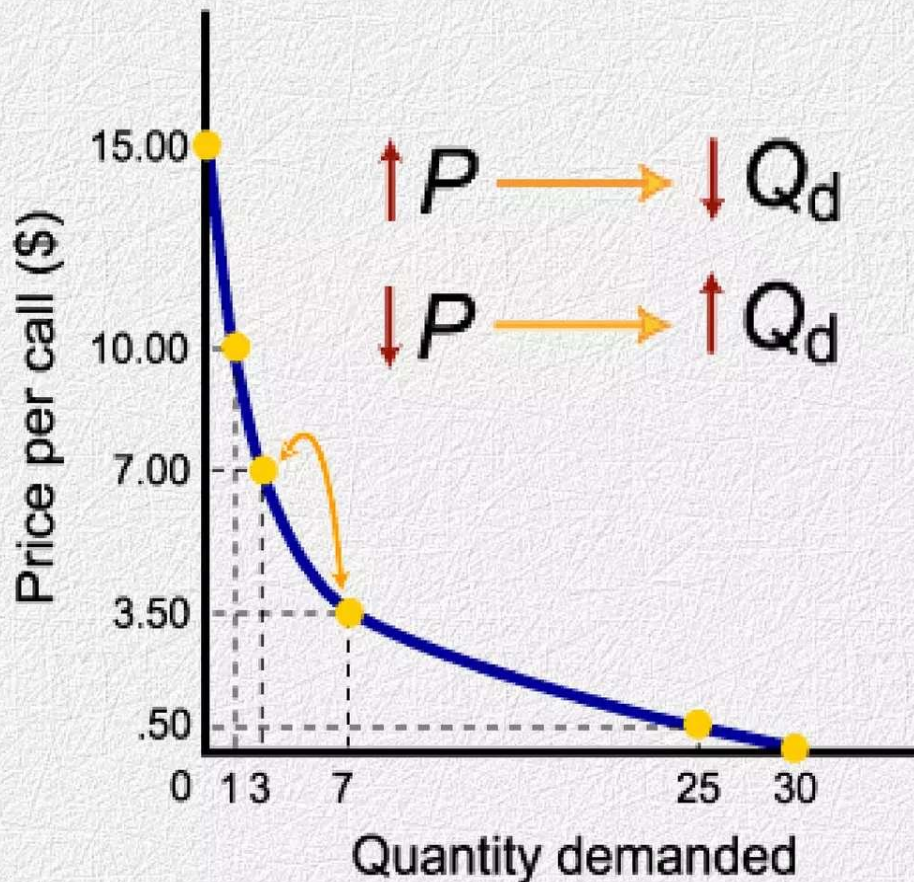
- A ***demand schedule*** is a table showing how much of a given product a household would be willing to buy at different prices.
- Demand curves are usually derived from demand schedules.

# The Demand Curve



- The ***demand curve*** is a graph illustrating how much of a given product a household would be willing to buy at different prices.

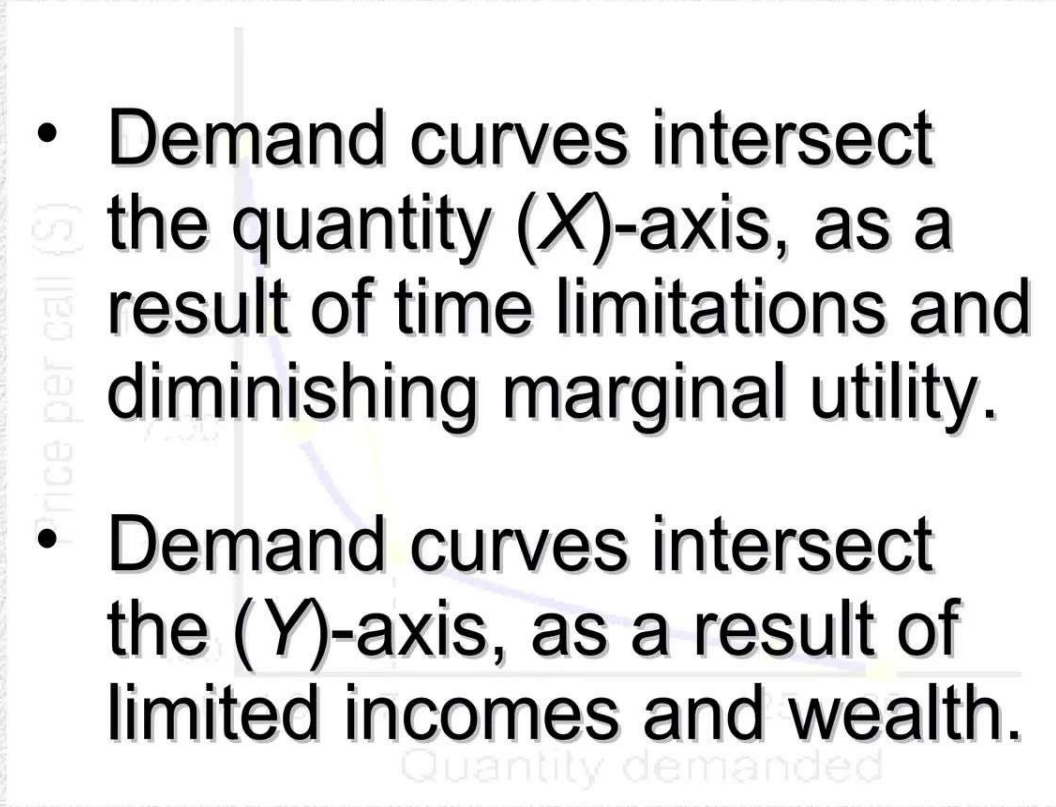
# The Law of Demand



- The ***law of demand*** states that there is a negative, or inverse, relationship between price and the quantity of a good demanded and its price.
- This means that demand curves slope downward.

# Other Properties of Demand Curves

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- Demand curves intersect the quantity ( $X$ )-axis, as a result of time limitations and diminishing marginal utility.
  - Demand curves intersect the ( $Y$ )-axis, as a result of limited incomes and wealth.

# Income and Wealth

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- **Income** is the sum of all households wages, salaries, profits, interest payments, rents, and other forms of earnings in a given period of time. It is a **flow** measure.
- **Wealth**, or **net worth**, is the total value of what a household owns minus what it owes. It is a **stock** measure.

# Related Goods and Services

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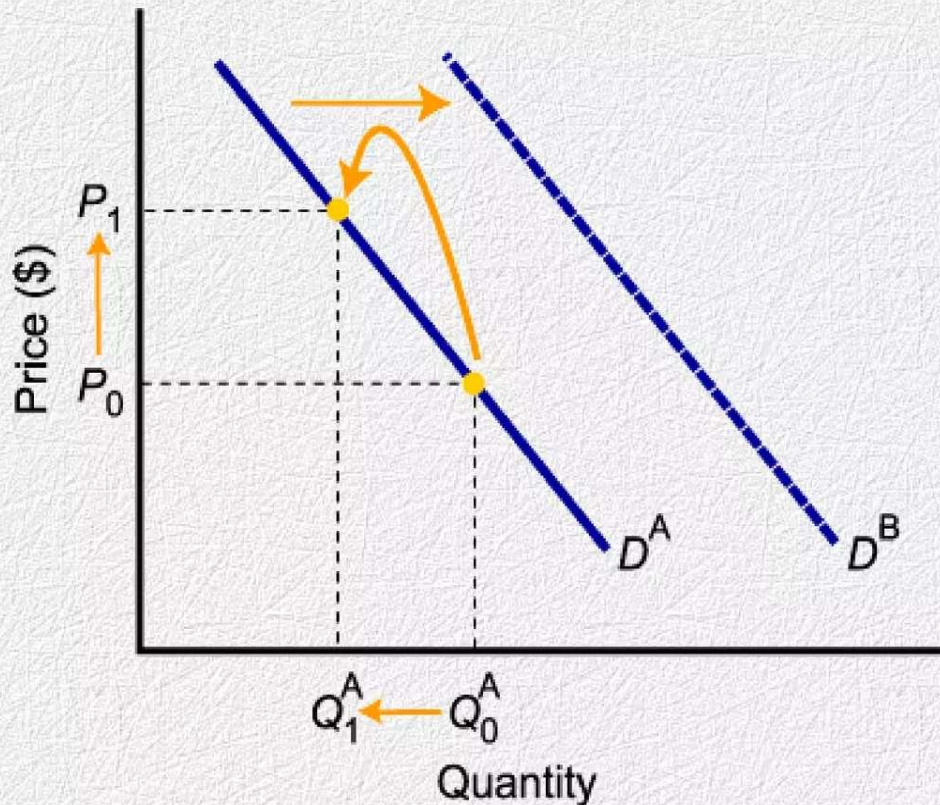
- ***Normal Goods*** are goods for which demand goes up when income is higher and for which demand goes down when income is lower.
- ***Inferior Goods*** are goods for which demand falls when income rises.

# Related Goods and Services

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- **Substitutes** are goods that can serve as replacements for one another; when the price of one increases, demand for the other goes up. **Perfect substitutes** are identical products.
- **Complements** are goods that “go together”; a decrease in the price of one results in an increase in demand for the other, and vice versa.

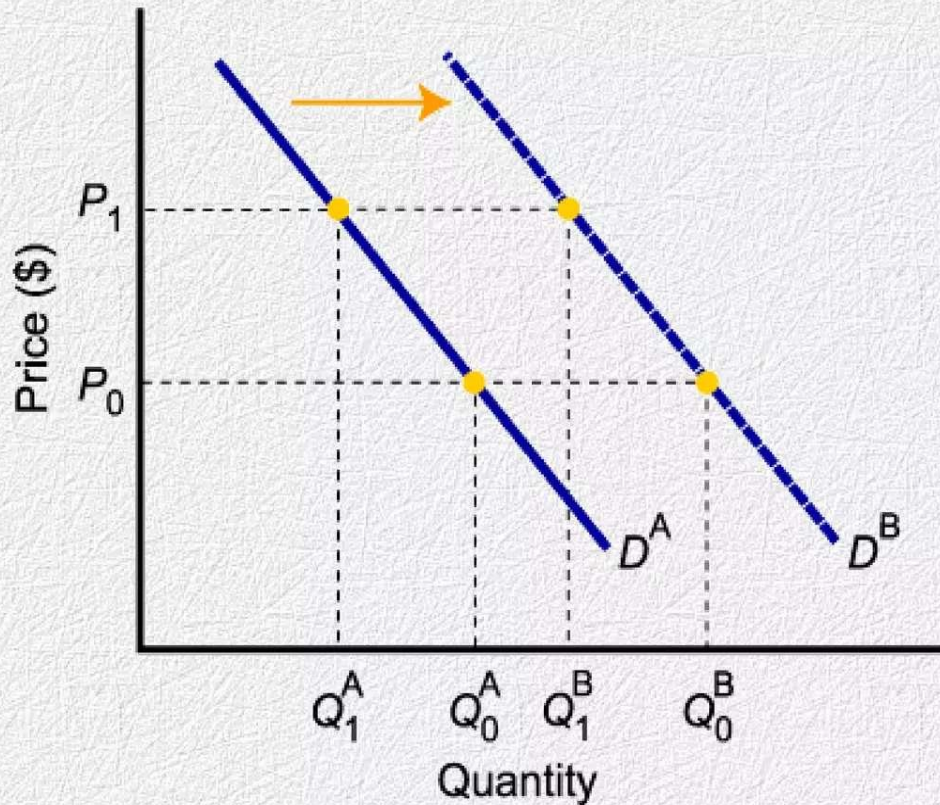
# Shift of Demand Versus Movement Along a Demand Curve



- A change in **demand** is not the same as a change in **quantity demanded**.
- In this example, a higher price causes lower **quantity demanded**.
- Changes in determinants of demand, other than price, cause a change in **demand**, or a **shift** of the entire demand curve, from  $D_A$  to  $D_B$ .

# A Change in Demand Versus a Change in Quantity Demanded

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- When ***demand shifts*** to the right, demand increases. This causes ***quantity demanded*** to be greater than it was prior to the shift, ***for each and every price level.***

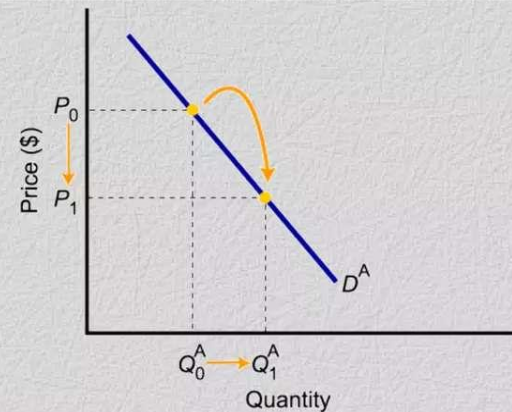
# A Change in Demand Versus a Change in Quantity Demanded

To summarize:

Change in price of a good or service leads to



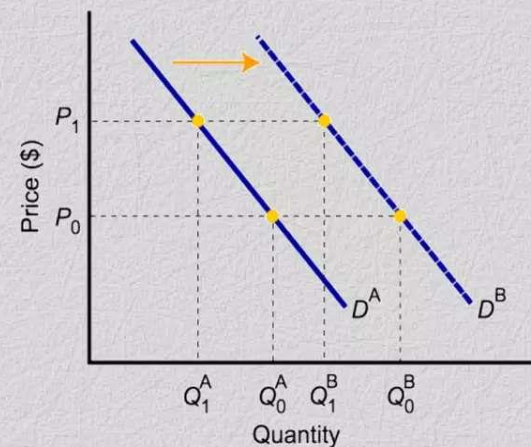
Change in *quantity demanded* (**Movement along the curve**).



Change in income, preferences, or prices of other goods or services leads to

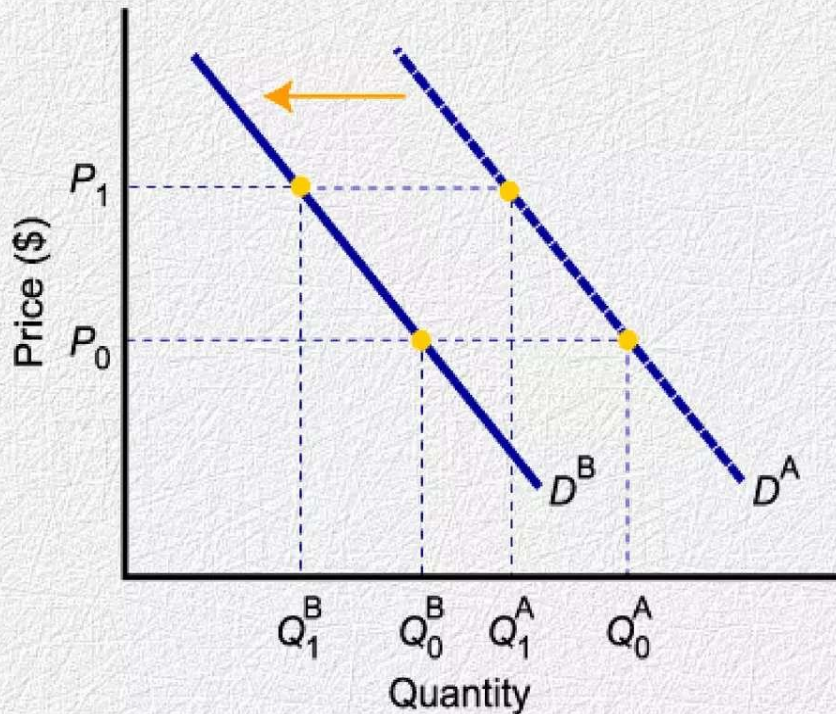


Change in demand (**Shift of curve**).

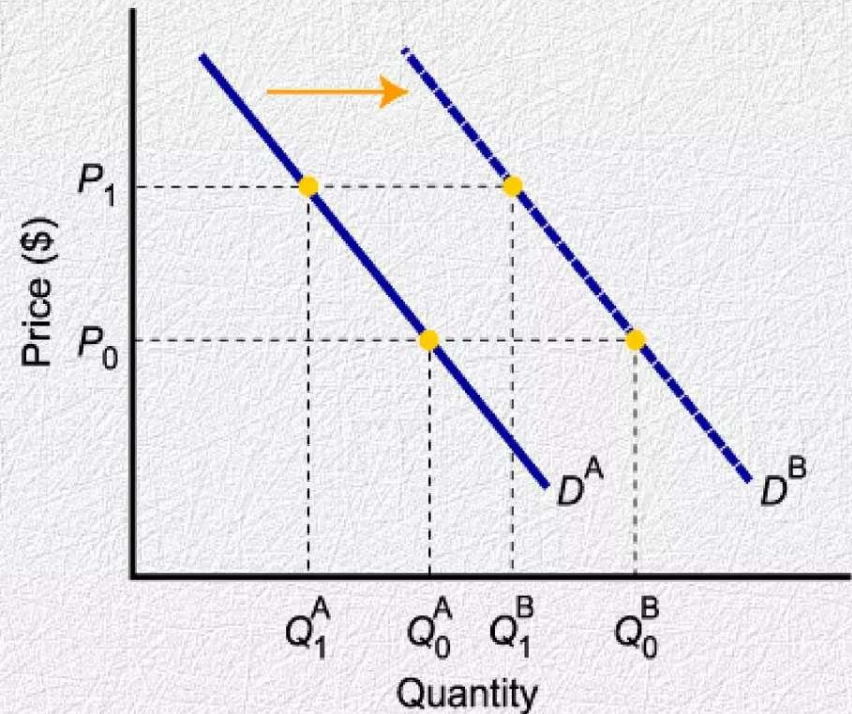


# The Impact of a Change in Income

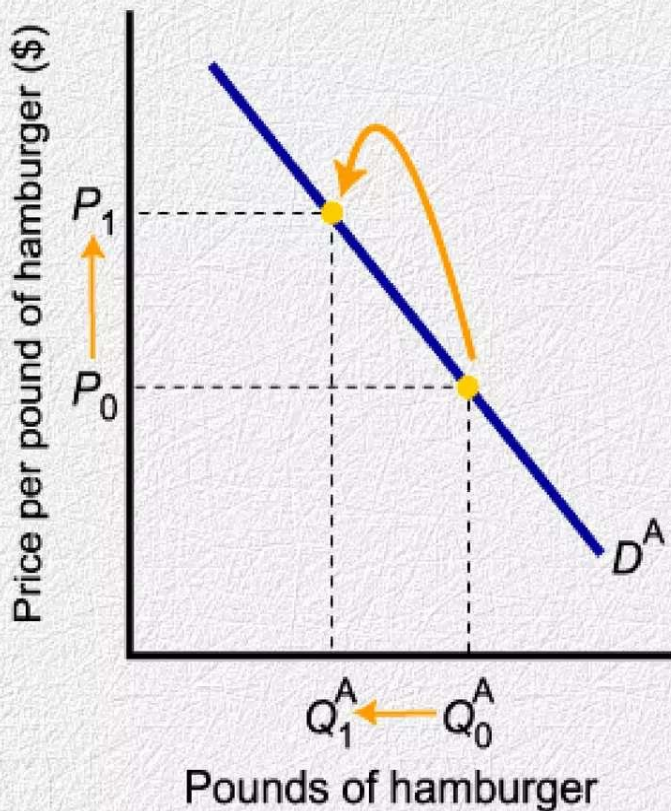
- Higher income decreases the demand for an *inferior* good



- Higher income increases the demand for a *normal* good

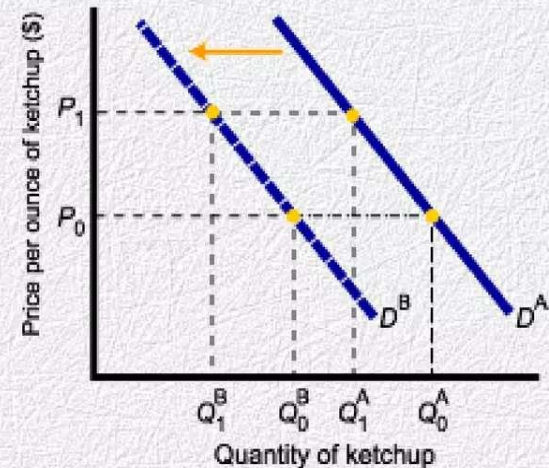


# The Impact of a Change in the Price of Related Goods

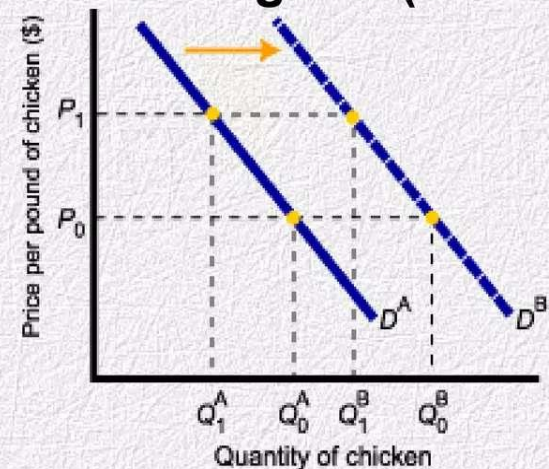


- Price of hamburger rises
- Quantity of hamburger demanded falls

- Demand for complement good (ketchup) shifts left



- Demand for substitute good (chicken) shifts right



# From Household to Market Demand

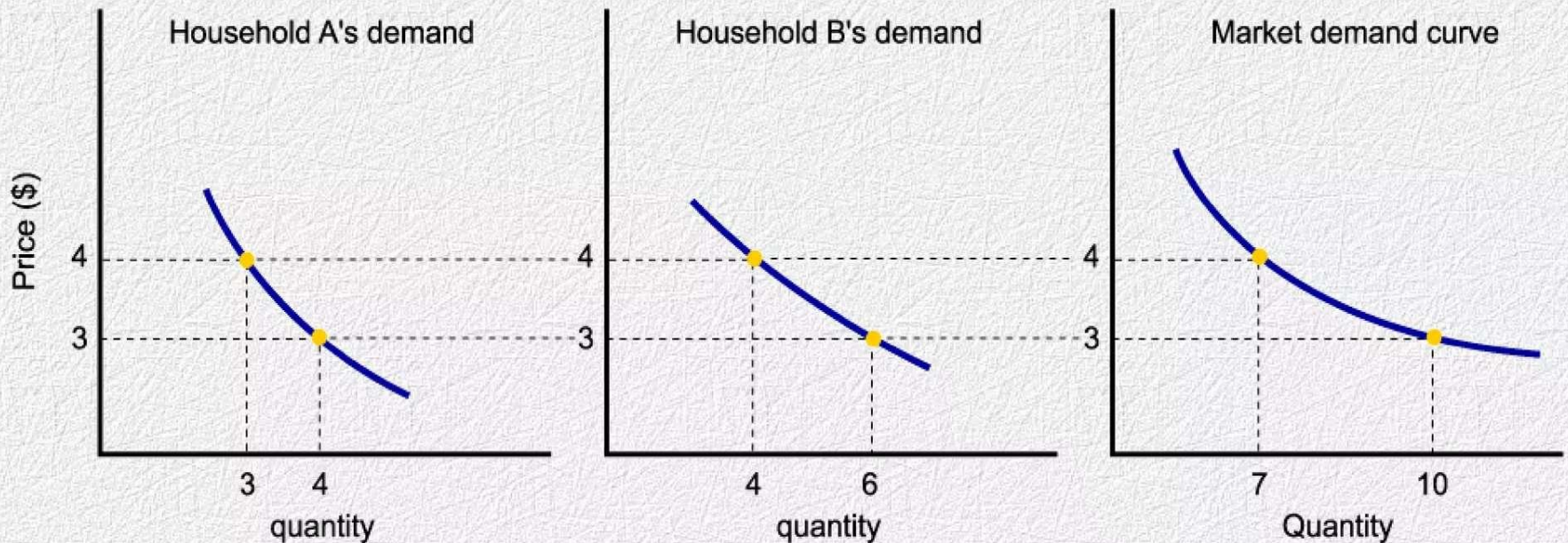
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- Demand for a good or service can be defined for an ***individual household***, or for a group of households that make up a ***market***.
- ***Market demand*** is the sum of all the quantities of a good or service demanded per period by all the households buying in the market for that good or service.

# From Household Demand to Market Demand

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- Assuming there are only two households in the market, market demand is derived as follows:



# Supply in Output Markets

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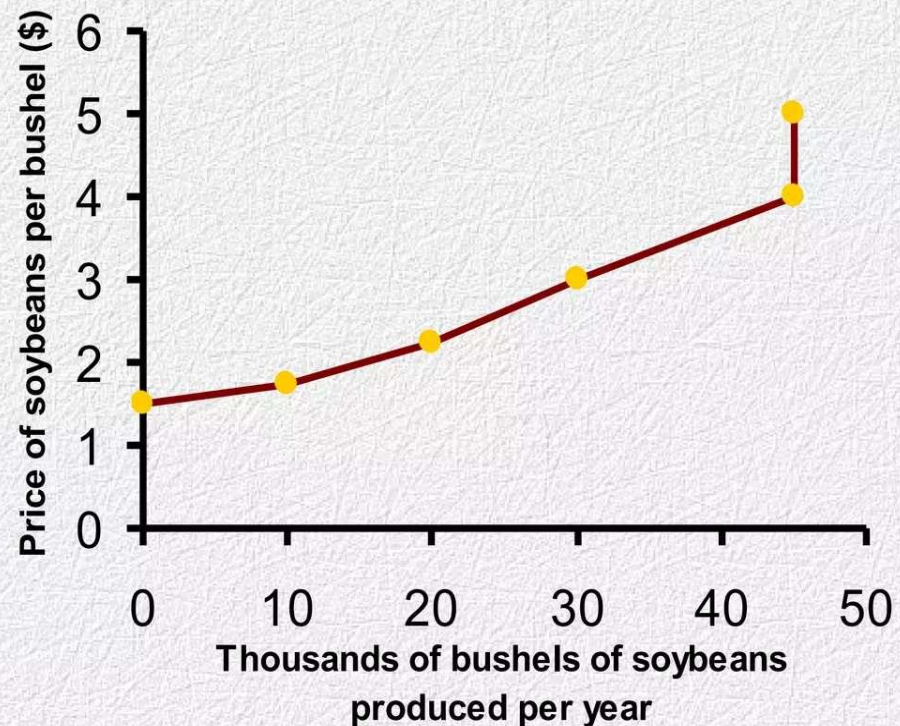
CLARENCE BROWN'S SUPPLY SCHEDULE FOR SOYBEANS		
PRICE (PER BUSHEL)		QUANTITY SUPPLIED (THOUSANDS OF BUSHELS PER YEAR)
\$	2	0
	1.75	10
	2.25	20
	3.00	30
	4.00	45
	5.00	45

- A **supply schedule** is a table showing how much of a product firms will supply at different prices.
- **Quantity supplied** represents the number of units of a product that a firm would be willing and able to offer for sale at a particular price during a given time period.

# The Supply Curve and the Supply Schedule

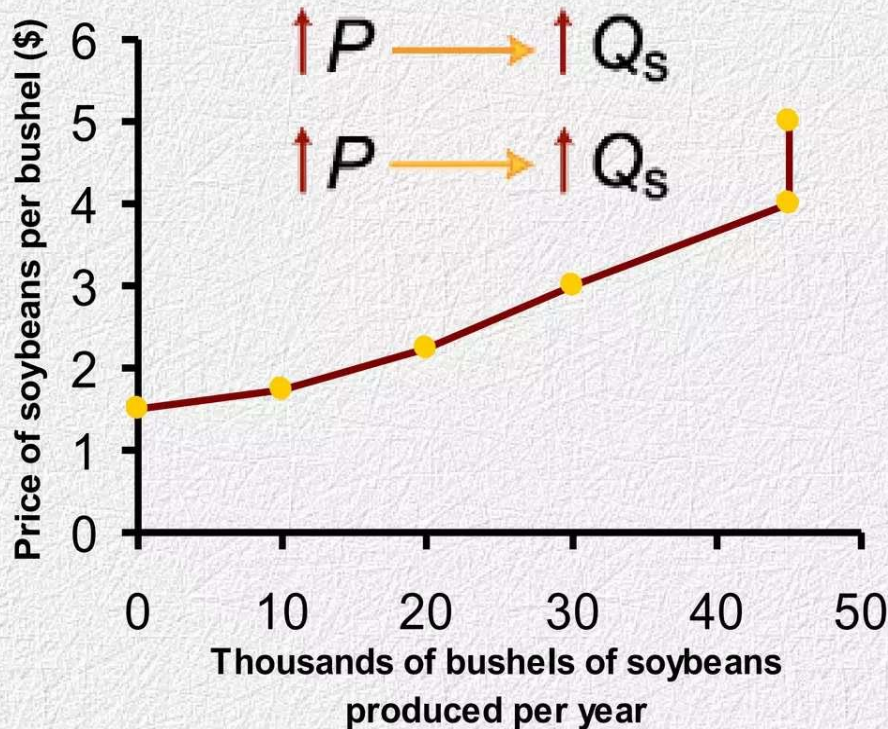
- A **supply curve** is a graph illustrating how much of a product a firm will supply at different prices.

CLARENCE BROWN'S SUPPLY SCHEDULE FOR SOYBEANS	
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1.75	10
2.25	20
3.00	30
4.00	45
5.00	45



# The Law of Supply

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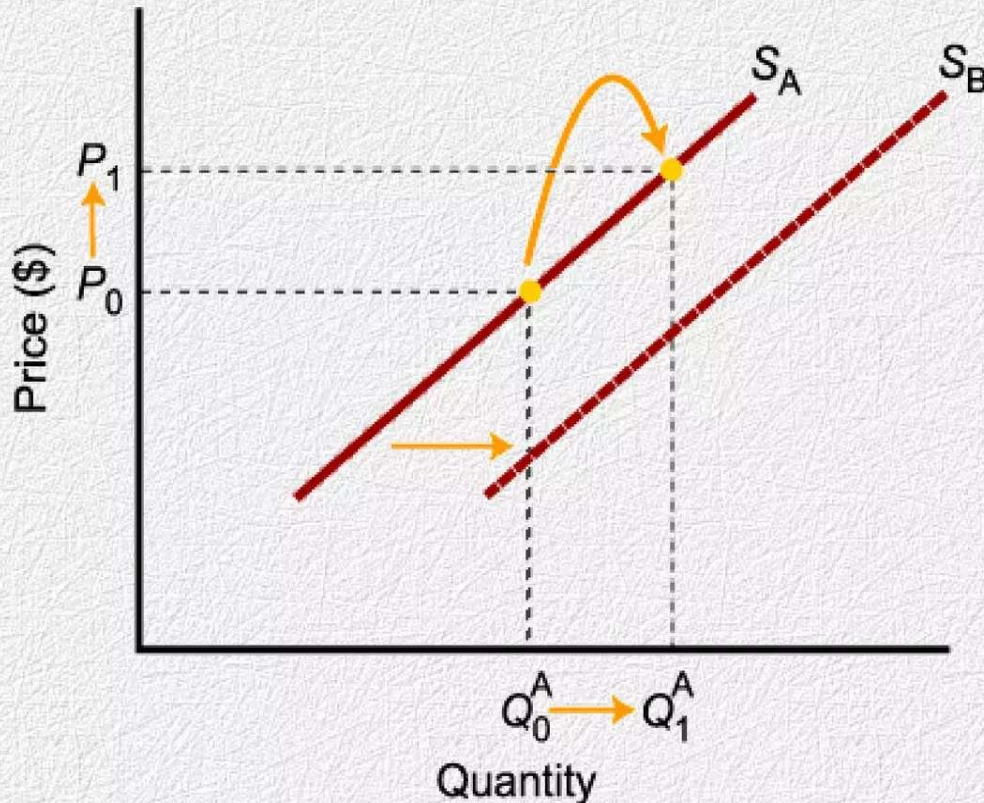
- The ***law of supply*** states that there is a positive relationship between price and quantity of a good supplied.
- This means that supply curves typically have a positive slope.

# Determinants of Supply

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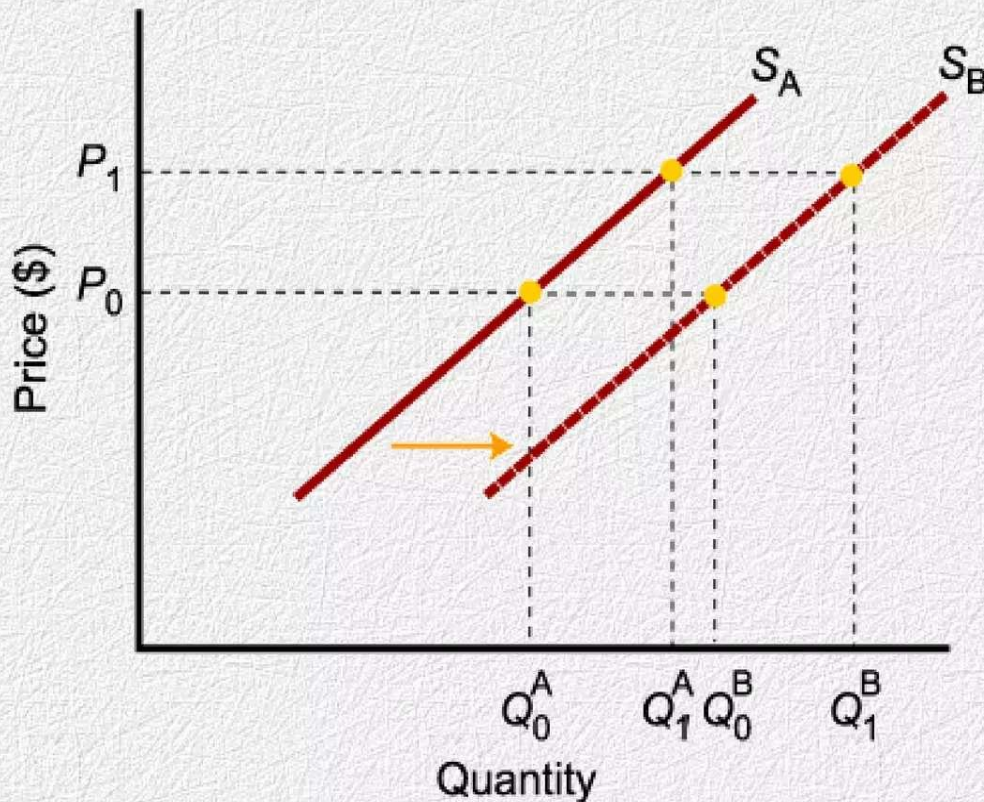
- The ***price*** of the good or service.
- The ***cost*** of producing the good, which in turn depends on:
  - The ***price of required inputs*** (labor, capital, and land),
  - The ***technologies*** that can be used to produce the product,
- The ***prices of related products***.

# A Change in Supply Versus a Change in Quantity Supplied



- A change in **supply** is not the same as a change in **quantity supplied**.
- In this example, a higher price causes **higher quantity supplied**, and a **move along** the demand curve.
- In this example, changes in determinants of supply, other than price, cause an **increase in supply**, or a **shift** of the entire supply curve, from  $S_A$  to  $S_B$ .

# A Change in Supply Versus a Change in Quantity Supplied



- When **supply shifts** to the right, supply increases. This causes **quantity supplied** to be greater than it was prior to the shift, **for each and every price level**.

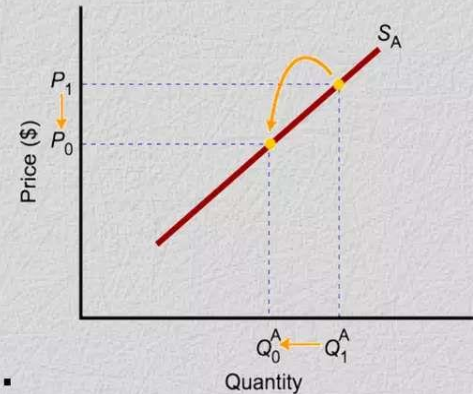
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To summarize:

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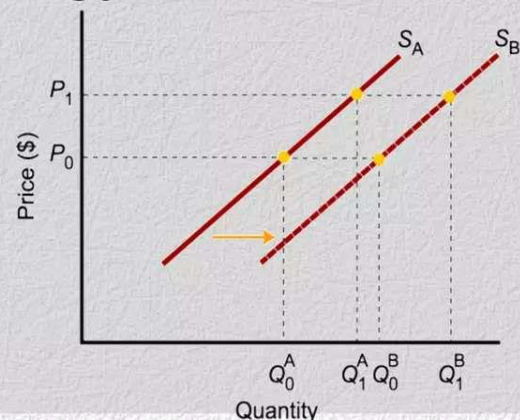
Change in *quantity supplied*  
**(Movement along the curve).**



Change in costs, input prices, technology, or prices of related goods and services leads to



Change in supply  
**(Shift of curve).**



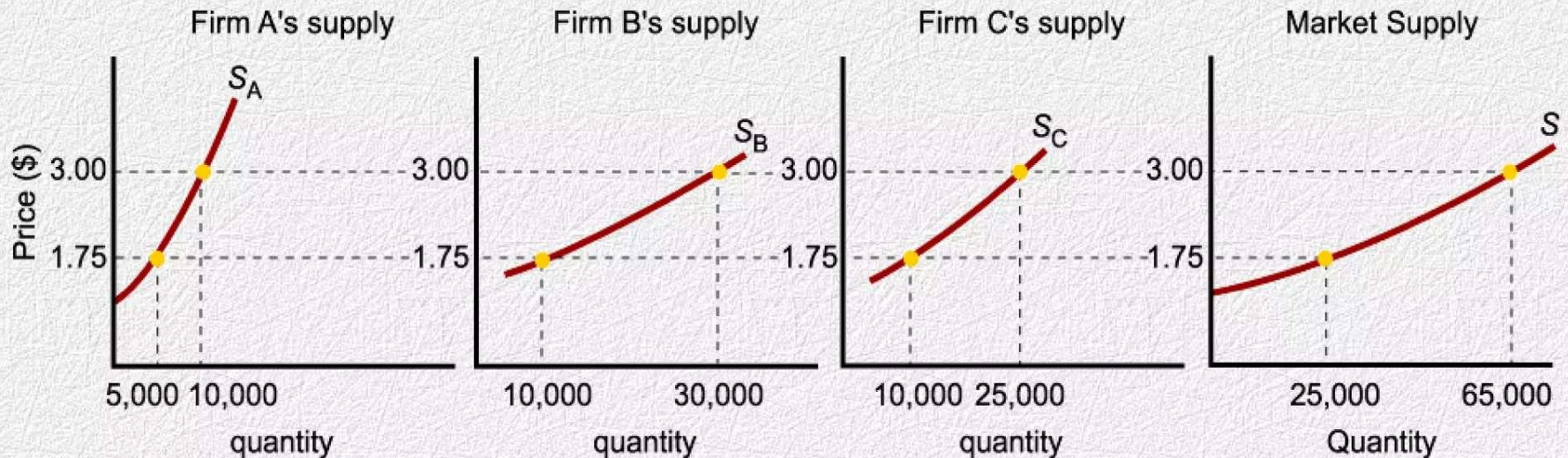
# From Individual Supply to Market Supply

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- The supply of a good or service can be defined for an individual firm, or for a group of firms that make up a market or an industry.
- ***Market supply*** is the sum of all the quantities of a good or service supplied per period by all the firms selling in the market for that good or service.

# Market Supply

- As with market demand, **market supply** is the horizontal summation of individual firms' supply curves.



# Market Equilibrium

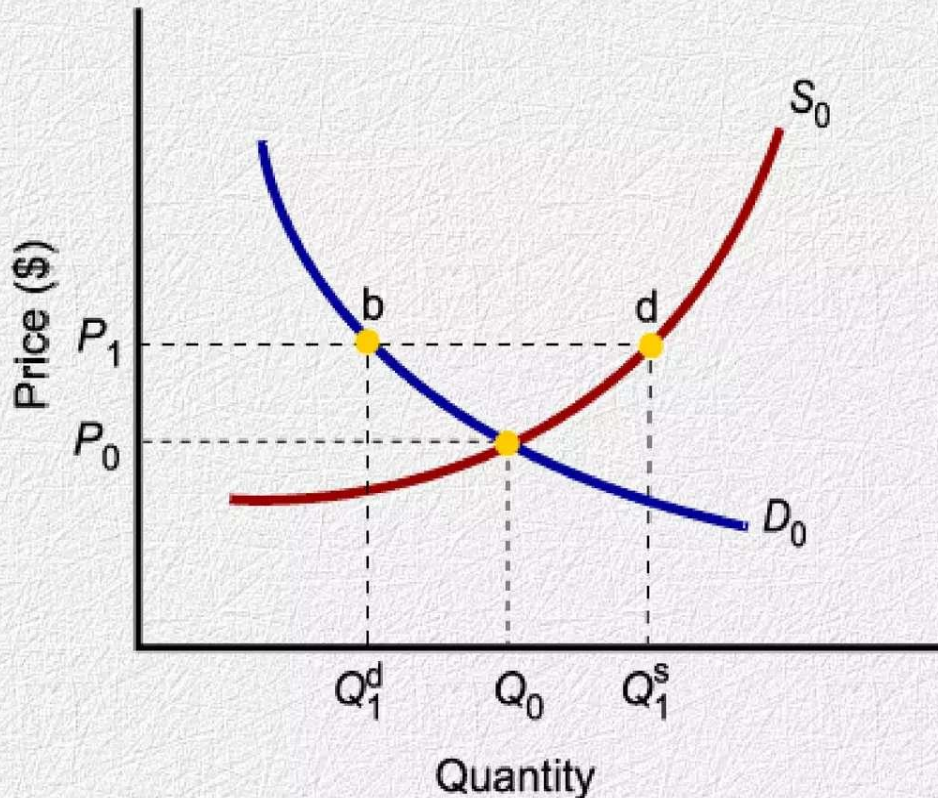
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- The operation of the market depends on the interaction between buyers and sellers.
- An **equilibrium** is the condition that exists when quantity supplied and quantity demanded are equal.
- At equilibrium, there is no tendency for the market price to change.

Quantity

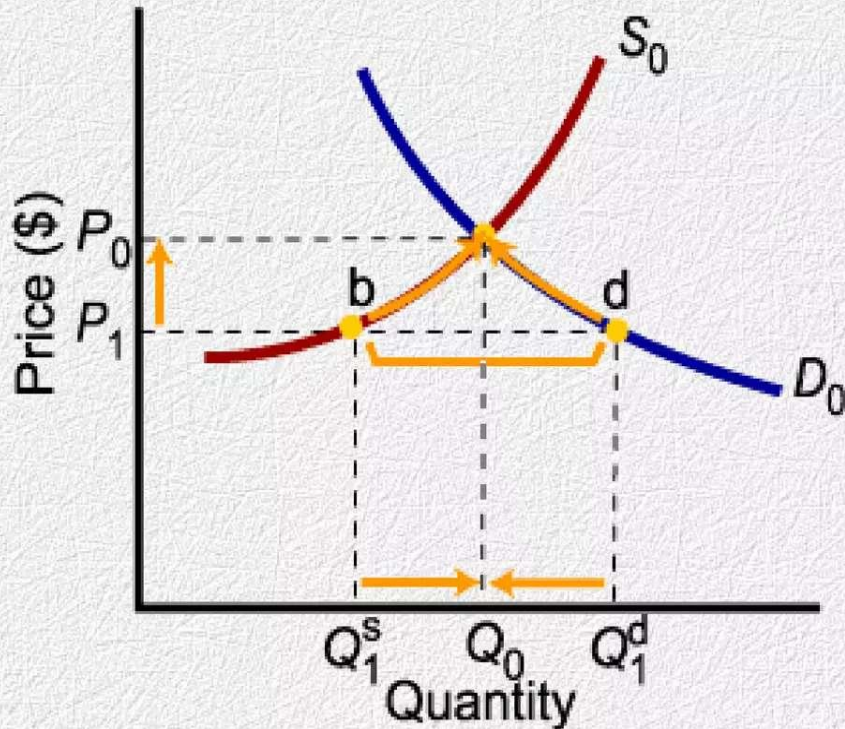
# Market Equilibrium

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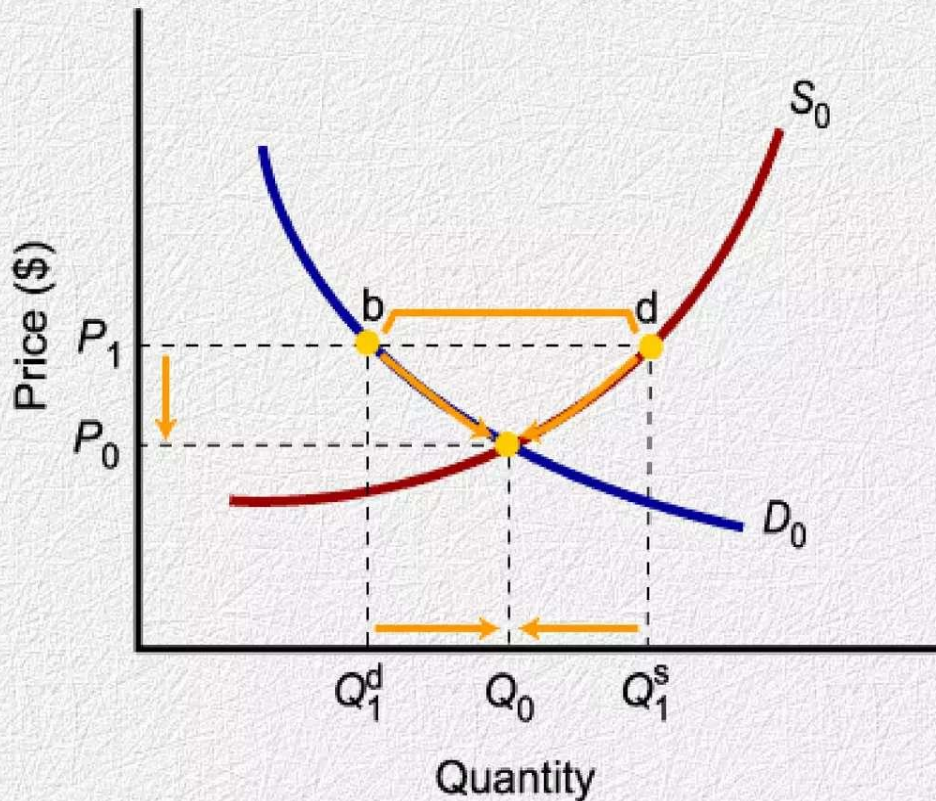
- Only in equilibrium is quantity supplied equal to quantity demanded.
- At any price level other than  $P_0$ , the wishes of buyers and sellers do not coincide.

# Market Disequilibrium



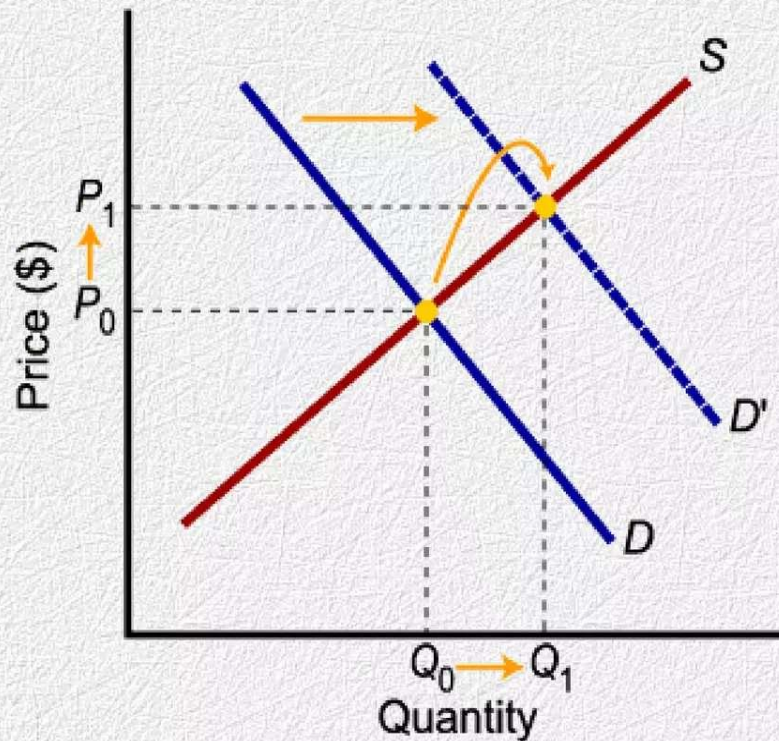
- **Excess demand**, or shortage, is the condition that exists when quantity demanded exceeds quantity supplied at the current price.
- When quantity demanded exceeds quantity supplied, price tends to rise until equilibrium is restored.

# Market Disequilibrium

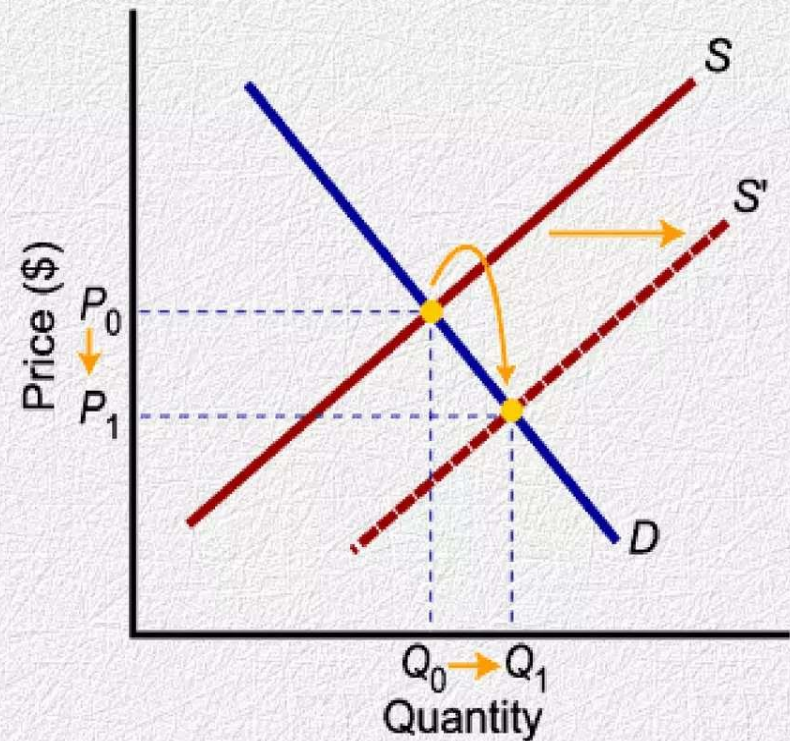


- **Excess supply**, or surplus, is the condition that exists when quantity supplied exceeds quantity demanded at the current price.
- When quantity supplied exceeds quantity demanded, price tends to fall until equilibrium is restored.

# Increases in Demand and Supply

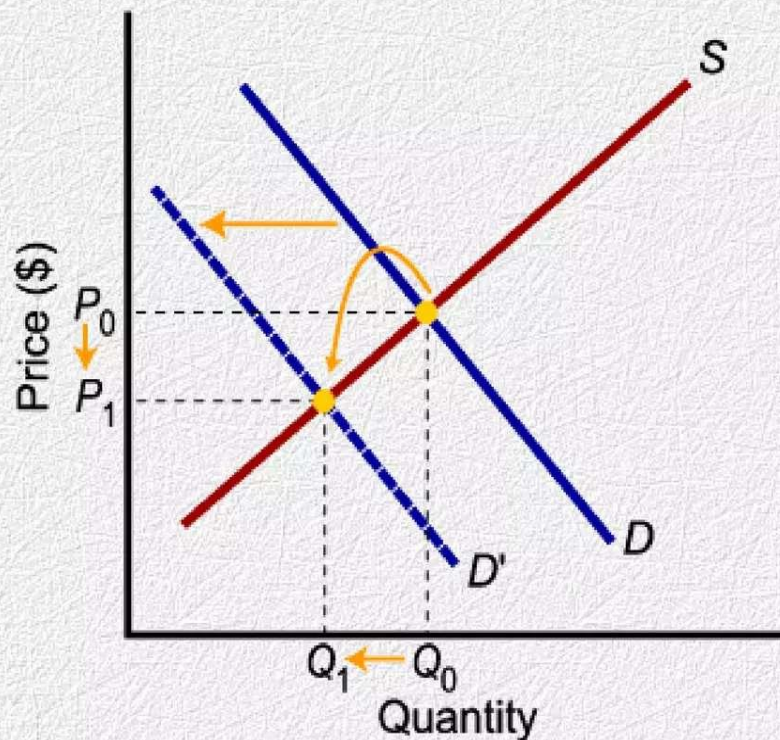


- **Higher demand** leads to higher equilibrium price and higher equilibrium quantity.

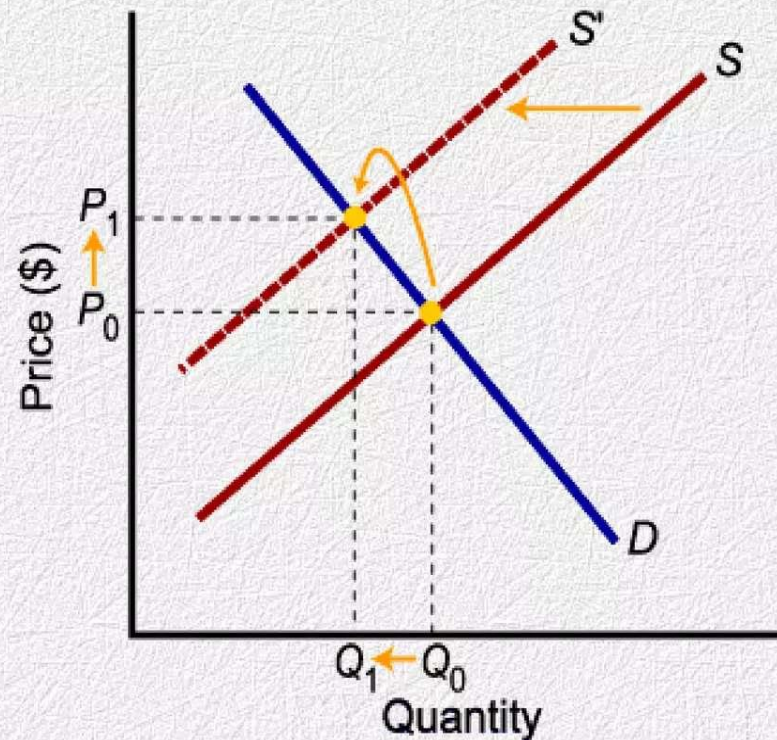


- **Higher supply** leads to lower equilibrium price and higher equilibrium quantity.

# Decreases in Demand and Supply

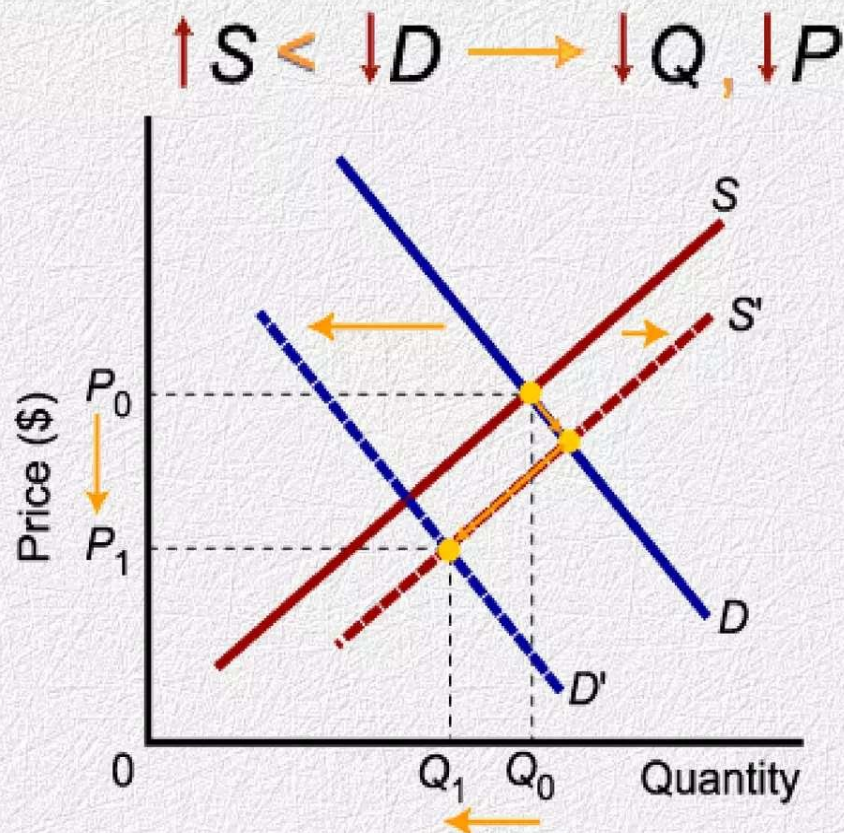
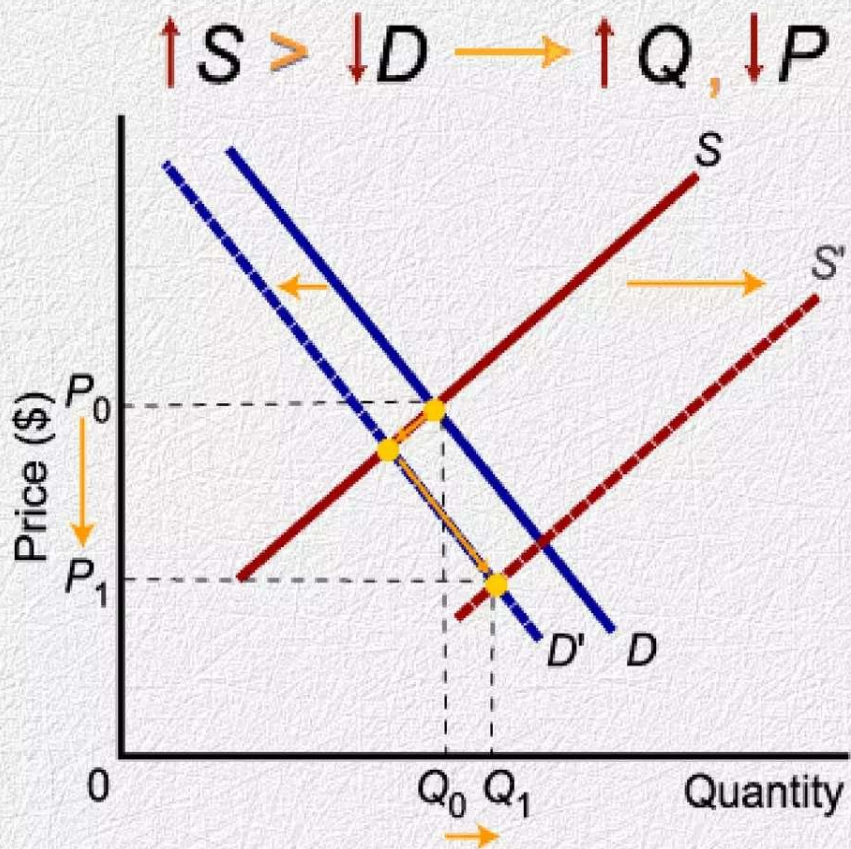


- **Lower demand** leads to lower price and lower quantity exchanged.



- **Lower supply** leads to higher price and lower quantity exchanged.

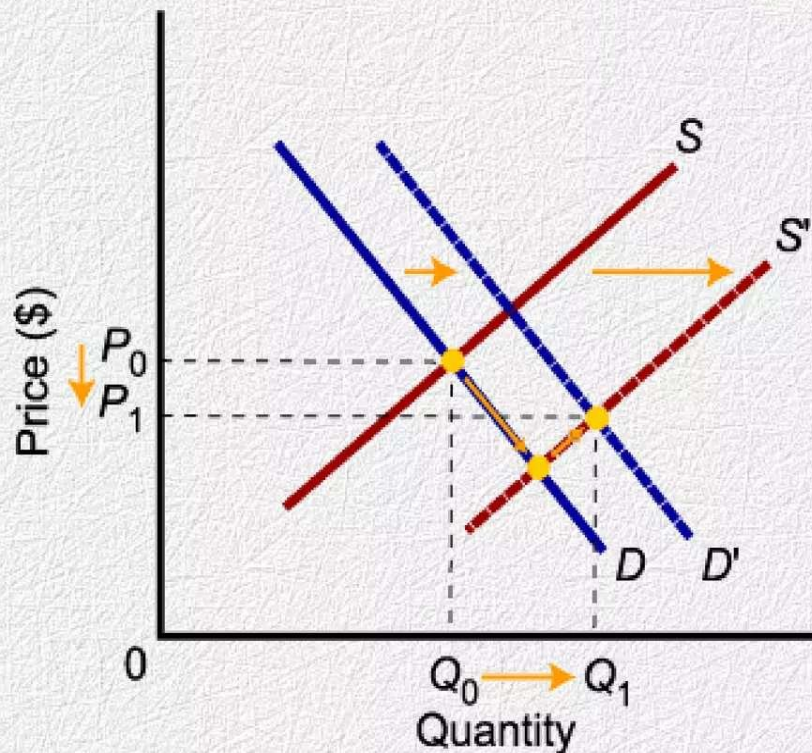
# Relative Magnitudes of Change



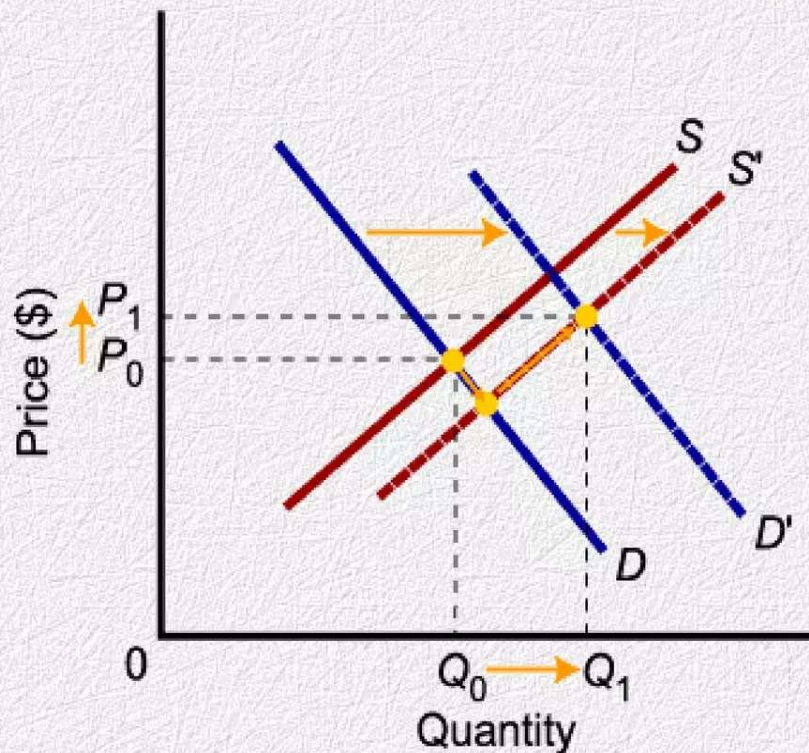
- The relative magnitudes of change in supply and demand determine the outcome of market equilibrium.

# Relative Magnitudes of Change

$\uparrow S > \uparrow D \rightarrow \uparrow Q, \downarrow P$



$\uparrow D > \uparrow S \rightarrow \uparrow Q, \uparrow P$



- When supply and demand both increase, quantity will increase, but price may go up or down.