Supply and Demand

Coach Burnett
AP Macroeconomics

Price and Quantity

- Price - the amount of money paid for an economic good/service.
  - Ex. A gallon of gas is roughly $3.00 a gallon (national average) OUCH!!!
- Quantity - the amount of items
  - I need 18 gallons to fill up the tank in my car

Demand

- A consumers' willingness and ability to buy an item at a given price.
  - Willingness means that buyers must want the item.
  - Ability means that buyers must have the financial resources to afford the item.
- It Is Important To Understand That Demand Does Not Refer To A Numerical Amount, But Instead It Refers To A Behavior!

The Law of Demand

- The price of an item determines the quantity demanded
- The lower the price of an item, the higher the quantity demanded
  - We tend to buy more when costs are lower
- The higher the price of an item, the lower the quantity demanded
  - We tend to buy less when costs are higher
- In other words, the price of a good/service is inversely related with the quantity demanded

3 Reasons for the Law of Demand

- Income Effect
- Substitution Effect
- Diminishing Marginal Utility

Income Effect

- When things are expensive, money buys less
- When things are cheaper, money buys more

Substitution Effect

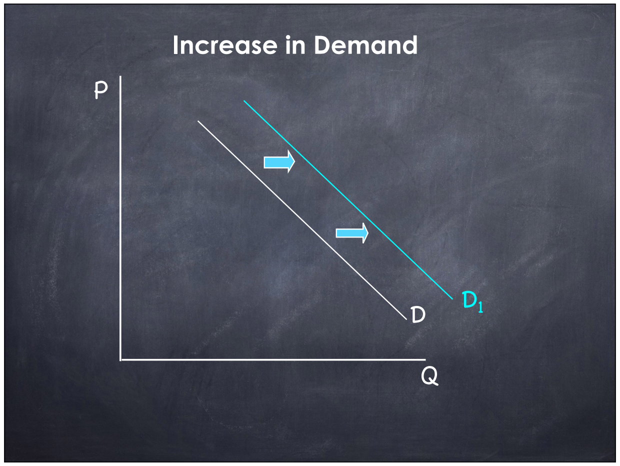
- When Oreos are expensive and their substitutes (Chips Ahoy!) are relatively cheap, I buy fewer Oreos and more Chips Ahoy! to save money

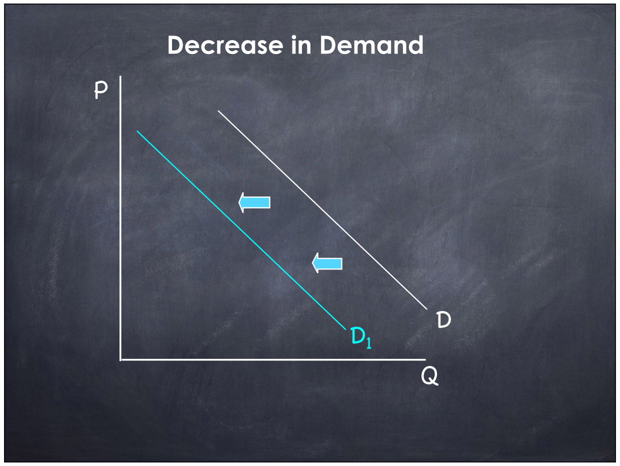
Diminishing Marginal Utility

- Each additional unit of an item purchased gives less marginal utility (benefit) than the previous. Therefore, I will only continue buying more if the price is lower
  - Ex. When a movie is really good (such as Avatar) I watch it 2 or 3 times in theaters but typically not any more because the marginal utility (benefit) of consecutive viewings are not worth the cost incurred.

Changes in Demand

- Increase in Demand
  - More quantity demanded at all prices
  - Demand curve shifts to the right (→)
- Decrease in Demand
  - Less quantity demanded at all prices
  - Demand curve shifts to the left (←)
- KNOW THAT PRICE <u>DOES NOT</u> CHANGE DEMAND!!!





Determinants of Demand
T.I.M.E.R.

- These are the important factors I need you to know for affecting Demand:
  - Tastes and Preferences
  - Income (of consumers)
  - Market size
  - Expectations of future prices
  - Related Goods

Determinants of Demand T.I.M.E.R.

Tastes and Preferences

- Tastes and preferences are affected by advertising, consumer trends, health considerations, etc.
  - Example: In the early 2000's, Demand for "Tall Tee" XXXXXL shirts rose significantly when rappers began wearing them in their music videos.
  - Example: Demand for sushi decreased after the Fukushima Reactor disaster in Japan

Determinants of Demand T.I.M.E.R.

Income of consumers

- When consumer income increases:
  - Demand for normal goods or services increases and demand for inferior goods and services decreases
    - Example: Higher income = better food (steaks)
- When consumer income decreases:
  - Demand for normal goods or services decreases and demand for inferior goods and services increases
    - Example: Lower income = worse food (Ramen)

Determinants of Demand T.I.M.E.R.

Market size (AKA population)

- More population = more demand
  - Example: As Killeen has grown in size so has our appetite for different types of restaurants.
- Less population = less demand
  - Example: Back in the early 1990's during Gulf Storm, Killeenite's demand for military surplus stores decreased.

Determinants of Demand T.I.M.E.R.

Expectations of Future Prices

- If consumers expect prices to rise in the future, then demand increases now.
    - Right before major holidays many consumers will fill up their gas tanks in preparation for higher prices, thus increasing demand.
- If consumers expect prices to fall in the future, then demand decreases now.
    - If parents know that video game systems will go on sale around the holidays, they will wait to buy their children new systems, thus decreasing demand.

Determinants of Demand T.I.M.E.R.

Related Goods

- Complements - goods or services used together
    - Example: When I go to H.E.B. to buy Peanut Butter, I always get Jelly to go along with it.
- Substitutes - goods or services that are used in lieu of other goods or services
    - Example: When the cost of going to the movies rises, many men turn to Netflix and Red Box for date night.

Supply

- A Producers willingness and ability to sell a good/service
- Supply is not an amount but a behavior

The Law of Supply

- The price of an item determines the quantity supplied
- The lower the price the lower the quantity supplied
  - When goods/services command a low price, I tend to produce less of them
- The higher the price the higher the quantity supplied
  - When goods/services command a higher price, I tend to produce more of them
- Therefore, the price of a good/service is directly related with the quantity supplied

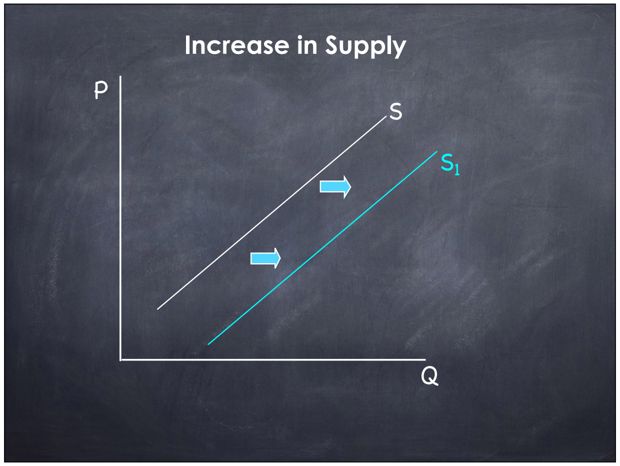
Reason for the Law of Supply

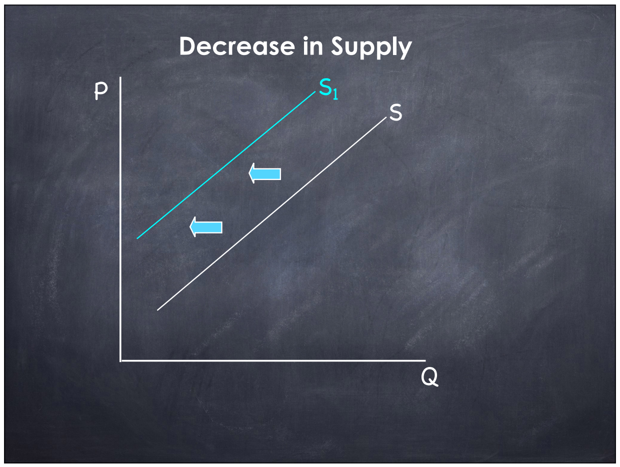
The law of increasing marginal cost

It is more costly to produce two than one. Therefore, I must collect a higher price if I am going to produce more.

Changes in Supply

- Increase in Supply
  - More quantity supplied at all prices
  - Supply curve shifts to the right (→)
- Decrease in Supply
  - Less quantity supplied at all prices
  - Supply curve shifts to the left (←)
- KNOW THAT PRICE DOES NOT CHANGE SUPPLY!!!





Determinants of Supply N.I.C.E.J.A.G.

- These are the important factors I need you to know for affecting Supply:
  - Natural/Manmade phenomenon
  - Input costs
  - Competition
  - Expectations
  - Profitability of goods in joint-supply
  - Profitability of alternative goods in supply
  - Government action

Determinants of Supply N.I.C.E.J.A.G.

- Natural/Manmade Phenomenon
  - Natural disasters
  - Weather
  - Wars
  - Riots
  - Strikes
  - Etc.

Determinants of Supply N.I.C.E.J.A.G.

- Input Costs
  - Prices of raw materials or other factors of production
  - Changes in technology
  - Changes in productivity (efficiency gains or losses)

Determinants of Supply N.I.C.E.J.A.G.

- Competition
  - Number of producers in the market
    - Fewer producers = less supply
    - More producers = more supply

Determinants of Supply N.I.C.E.J.A.G.

- Expected Prices
  - If producers expect prices to rise in the future, then they supply less now, so that they can sell their good/service at the future higher price
    - Ex: If you expect your stocks to increase in value, then you are inclined not to sell them now, but instead wait until the price rises
  - If producers expect prices to fall in the future then they supply more now while prices are still relatively higher
    - Ex: H.E.B. will begin stocking their shelves full of seasonal supplies months in advance before it goes on clearance

Determinants of Supply N.I.C.E.J.A.G.

- Profitability of goods in joint-supply
  - If the supply of beef increases, then the supply of leather increases as well
  - If the supply of rhino meat increases, then the supply of ivory increases as well
- Think by-products!

Determinants of Supply N.I.C.E.J.A.G.

- Profitability of alternative goods in supply
  - If farmers can make more money growing apples instead of oranges, then the supply of apples will increase and the supply of oranges will decrease
  - If auto manufacturers can make more money selling SUV's instead of sedans, then the supply of SUV's will increase while the supply of sedans will decrease
- Remember scarcity! There is only a finite amount available so choices must always be made (i.e. opportunity cost)

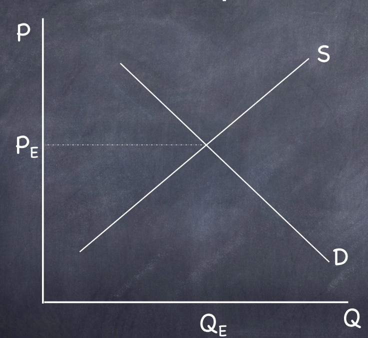
Determinants of Supply N.I.C.E.J.A.G.

- Government action
  - Business taxes
  - Regulation
  - Subsidies

Equilibrium

- Equilibrium is the point where Supply and Demand intersect (Supply = Demand)
- This creates a single price and quantity for a good/service

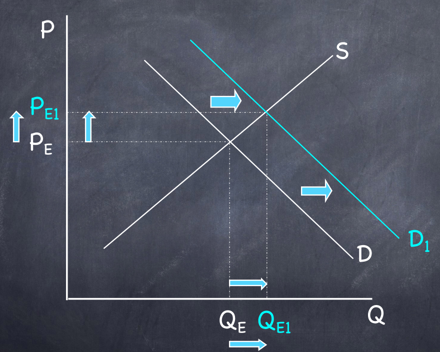
Market Equilibrium



Changes in Equilibrium

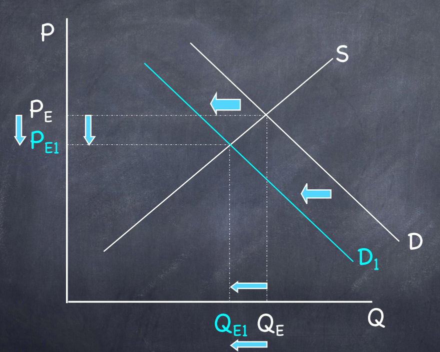
- When Supply and/or Demand change, the equilibrium price and quantity change
  - If Demand increases, then the price increases and quantity increases
  - If Demand decreases, then the price decreases and the quantity decreases
  - If Supply increases, then the price decreases and the quantity increases
  - If Supply decreases, then the price increases and the quantity decreases

Increase in Demand

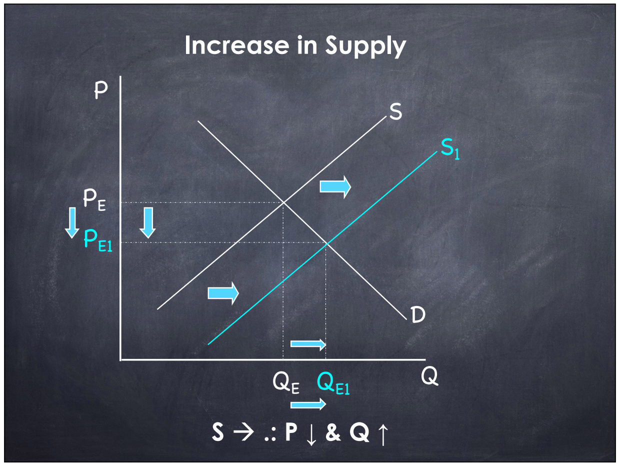


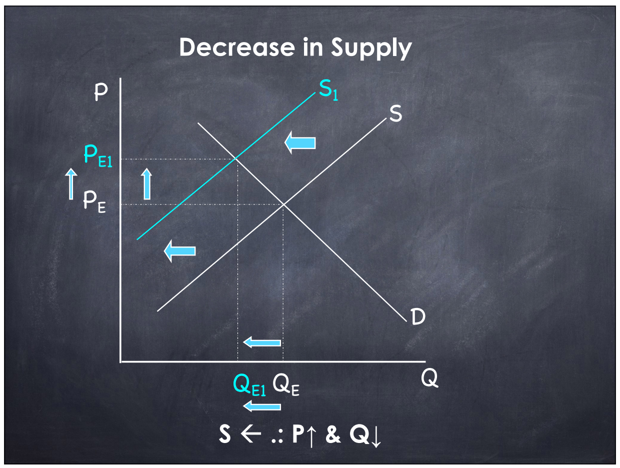
D → .: P ↑ & Q ↑

Decrease in Demand



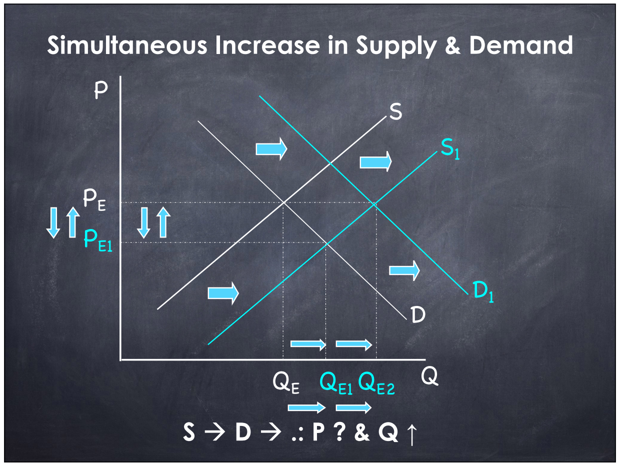
D ← .: P↓ & Q↓

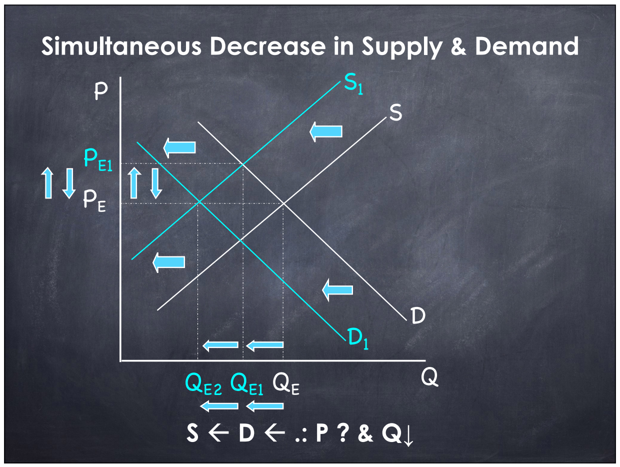




Simultaneous change in Supply and Demand

- If Supply and Demand both increase, then price is <u>indeterminate</u>, but quantity always goes up
- If Supply and Demand both decrease, then price is <u>indeterminate</u>, but quantity always goes down

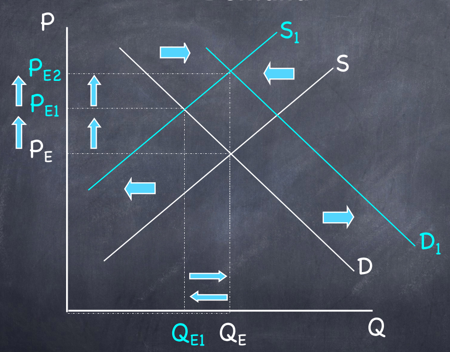




Simultaneous Changes in Supply and Demand

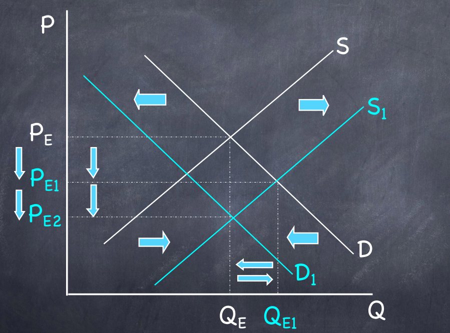
- If supply decreases while demand increases, then price definitely increases while quantity is indeterminate
- If supply increases while demand decreases, then price definitely decreases while quantity is indeterminate

Decrease in Supply w/ Simultaneous Increase in Demand



S ← D → .: P↑ & Q ?

Increase in Supply w/ Simultaneous Decrease in Demand



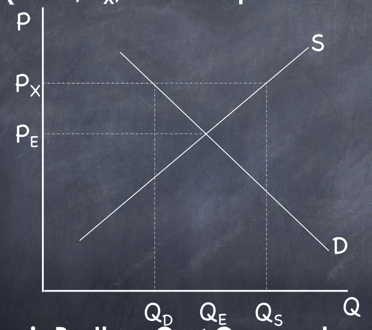
S → D ← .: P↓ & Q?

Disequilibrium

- If price occurs at some point where supply and demand are not equal, then disequilibrium exists.
- If the price is higher than the equilibrium price, then a surplus ($Q_s > Q_D$) occurs
- If the price is lower than the equilibrium price, then a shortage occurs ($Q_s < Q_D$)

Market Disequilibrium

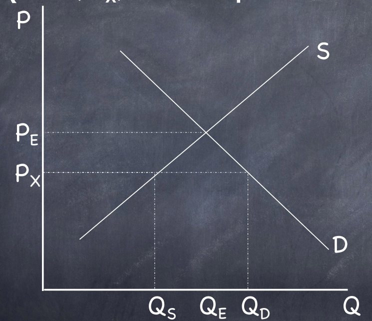
(Price, P_X, above Equilibrium Price, P_E)



If price is P_X, then $Q_D < Q_S$.: surplus exists (surplus $= Q_S - Q_D$)

Market Disequilibrium

(Price, P_X, below Equilibrium Price, P_E)



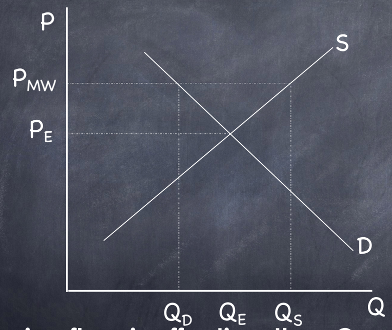
If price is P_X, then $Q_S < Q_D$.: shortage exists (shortage $= Q_D - Q_S$)

Causes of Disequilibrium

- Price floor – a minimum price for a good/service or resource determined outside of the market
  - Ex: Minimum wage
- Price ceiling – a maximum price for a good/service or resource determined outside of the market
  - Ex: Concert tickets sold by Ticket-master

Effective Price Floor

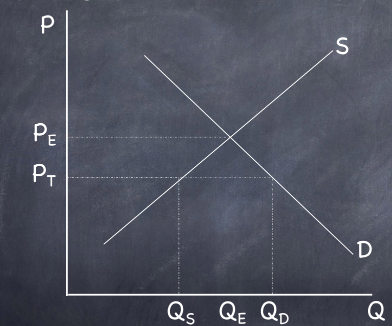
(ex. Minimum wage in competitive unskilled labor market)



If price floor is effective, then $Q_D < Q_S$.: surplus labor exists

Effective Price Ceiling

(ex. Single price for admission to a popular concert)



If price ceiling is effective then $Q_S < Q_D$.: ticket shortage exists

Conclusion

- Markets work best when supply and demand determine the price of goods/services or resources.
- When forces other than supply and demand determine the price of goods/services or resources, surpluses and shortages result.
- Over time, the forces of supply and demand undermine artificial price controls
  - Ex. Black markets, ticket scalping, undocumented workers