Supply and Demand

Coach Burnett
AP Macroeconomics

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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

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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.
- <u>It Is Important To Understand That Demand Does Not Refer To A Numerical Amount, But Instead It Refers To A Behavior!</u>

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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

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3 Reasons for the Law of Demand

- Income Effect
- Substitution Effect
- Diminishing Marginal Utility

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Income Effect

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

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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

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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.

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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!!!

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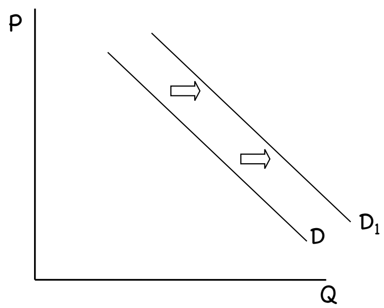
Increase in Demand



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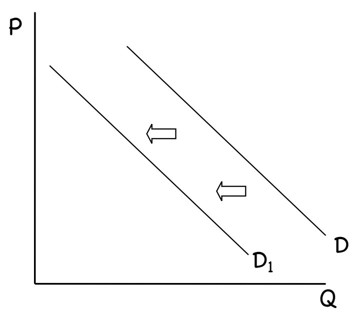
Decrease in Demand



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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

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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

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The Tall Tee…

Sadly, white middle class America were the biggest consumers of this craze and looked rather ridiculous in the process. I hope you or your family members were not casualties of this fad…

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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)

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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.

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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.

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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.

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Supply

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

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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

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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.

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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!!!

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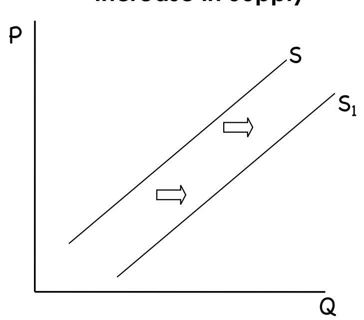
Increase in Supply



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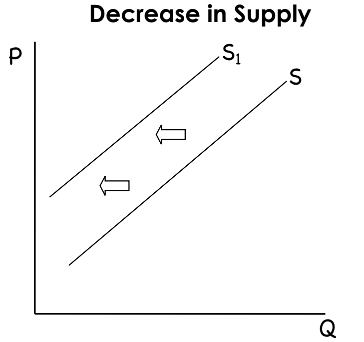
Decrease in Supply



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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

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

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

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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)

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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

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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

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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!

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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)

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

- Government action
  - Business taxes
  - Regulation
  - Subsidies

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Equilibrium

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

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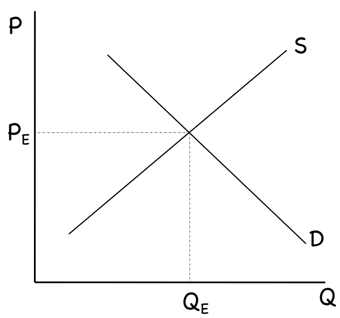
Market Equilibrium



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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

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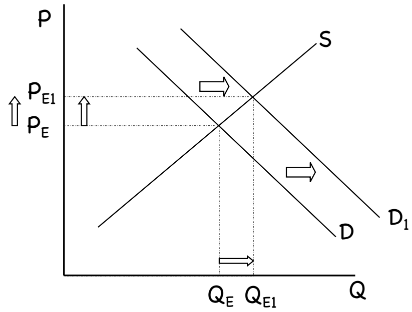
Increase in Demand



D → .: P ↑ & Q ↑

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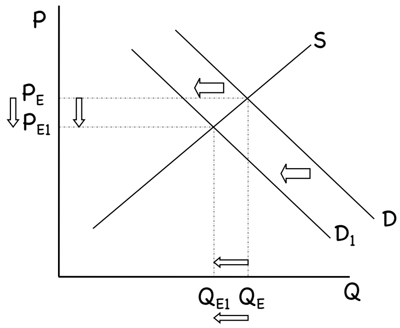
Decrease in Demand



D ← .: P↓ & Q↓

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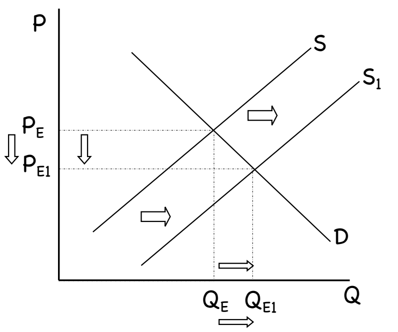
Increase in Supply



S → .: P ↓ & Q ↑

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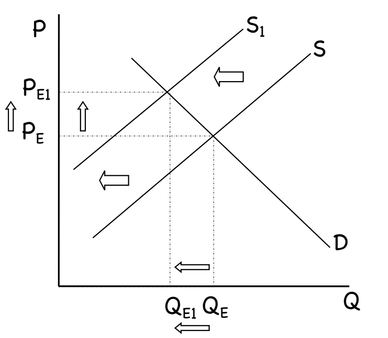
Decrease in Supply



S ← .: P↑ & Q↓

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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

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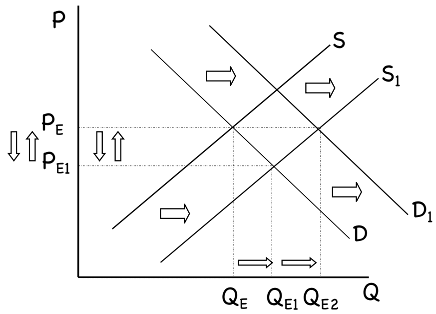
Simultaneous Increase in Supply & Demand



S → D → .: P ? & Q ↑

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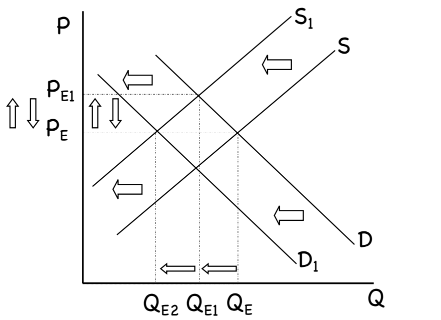
Simultaneous Decrease in Supply & Demand



S ← D ← .: P ? & Q↓

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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

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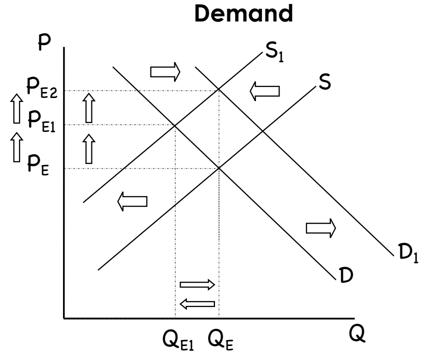
Decrease in Supply w/ Simultaneous Increase in Demand



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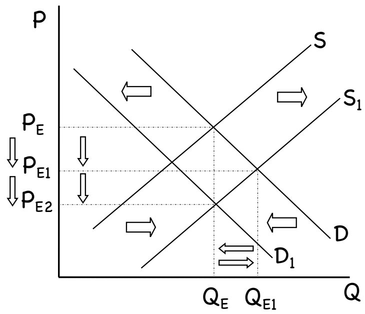
Increase in Supply w/ Simultaneous Decrease in Demand



S → D ← .: P↓ & Q?

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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)

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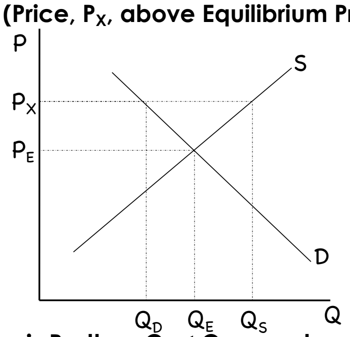
Market Disequilibrium
(Price, P_X, above Equilibrium Price, P_E)



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

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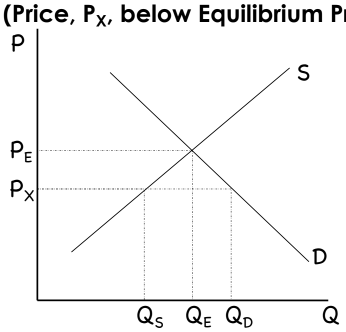
Market Disequilibrium
(Price, P_X, below Equilibrium Price, P_E)



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

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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

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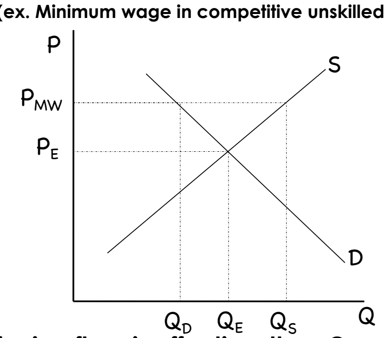
Effective Price Floor

(ex. Minimum wage in competitive unskilled labor market)



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

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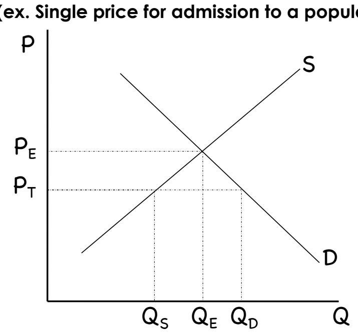
Effective Price Ceiling

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



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

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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

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