Principles of Microeconomics

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1. Indicate whether the demand or supply for the good would become more elastic or less elastic after each of the following changes.

a The demand curve for soap after wide understanding that bacteria and other organisms cause and spread disease

b The demand curve for coal after the invention of nuclear power plants

c The demand curve for cars as more employers allow employees to telecommute

d The demand curve for a new television during an economic boom

e The supply curve for diamonds if a new process for manufacturing diamonds is created

f The supply curve for food if pesticides and fertilizers were banned

g The supply curve for plastic if a very large share of oil output was used to make plastic

h The supply curve for nurses after several years of increasing wages in nursing

2. It's an important tradition in the Santos family that they eat the same meal at their favorite restaurant every Sunday. By contrast, the Chen family spends exactly $50 for their Sunday meal at whatever restaurant sounds best.

a Which family has a more elastic demand for restaurant food?

b Which family has a unit elastic demand for restaurant food?

3. Suppose that drug addicts pay for their addiction by stealing (other goods): So the higher the total revenue of the illegal drug industry, the higher the amount of theft (of other goods).
If a government crackdown on drug suppliers leads to a higher price of drugs, what will happen to the amount of stealing (of other goods) if the demand for drugs is elastic?
What if the demand for drugs is inelastic?

4. Decades ago, Washington, DC, a fairly small city, wanted to raise more revenue by increasing the gas tax. Washington, DC, shares borders with Maryland and Virginia, and it is very easy to cross the borders between these states without even really noticing: The suburbs just blend together.

a How elastic is the demand for gasoline sold at stations within Washington, DC? In other words, if the price of gas in DC, rises, but the price in Maryland and Virginia stays the same, will gasoline sales at DC, stations fall a little, or will they fall a lot?

b Take your answer in part a into account when answering this question. So, when Washington, DC, increased its gasoline tax, how much revenue did it raise: Did it raise a little bit of revenue, or did it raise a lot of revenue?

c How would your answer to b change if DC, Maryland, and Virginia all agreed to raise their gas tax simultaneously? These states have heavily populated borders with each other, but they don't have any heavily populated borders with other states.

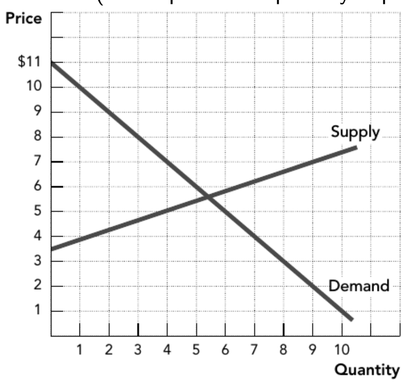
5. Suppose that Maria is willing to pay $40 for a haircut, and her stylist Juan is willing to accept as little as $25 for a haircut.

a What possible prices for the haircut would be beneficial to both Maria and Juan? How much total surplus (i.e., the sum of consumer and producer surplus) would be generated by this haircut?

b If the state where Maria and Juan live instituted a tax on services that included a $5 per haircut tax on stylists and barbers, what happens to the range of haircut prices that benefit both Maria and Juan? Will the haircut still happen? Will this tax alter the total economic benefit of this haircut?

c What if instead the tax was $20?

6. If a tax of $2 were imposed, what price would buyers pay and what price would suppliers receive? How much revenue would be raised by the tax? How much deadweight loss would be created by the tax? (The equilibrium quantity depicted is 5.5)



Prices Link Markets

Circa 1200 BCE, a decreasing supply of tin due to wars and the breakdown of trade led to a drastic increase in the price of bronze in the Middle East and Greece (tin being necessary for its production). It is around this time that blacksmiths developed iron- and steel-making techniques (as substitutes for bronze).

1. How is the increasing price of bronze a signal?
2. How is the increasing price an incentive?
3. How do your answers in questions a and b help explain why iron and steel became more common around the same time as the increase in price?
4. After the development of iron, did the supply or demand for bronze shift? Which way did it shift? Why?

Prices Link Markets

We explore how prices tie all goods together: To illustrate this idea, suppose new farming techniques drastically increased the productivity of growing wheat.

1. Given this change, how would the price of wheat change?
2. Given your answer in question 1, how would the price of cookbooks specializing in recipes using wheat flour change?
3. Given your answer in question 2, how would the price of paper change?
4. Given your answer in question 3, how would the price of pencils change? (Hint: Are paper and pencils substitutes or complements?)
5. Given your answer in question 4, how would the quantity of graphite (used in pencils) consumed change?

The Great Economic Problem:

To arrange our limited resources to satisfy as many of our infinite wants as possible.

Some solutions:

- Central Planning
- The Price System

Central Planning

Central planning: a single official or bureaucracy is responsible for allocating limited resources.

Are there any problems with central planing?
Why did the re-unified Germany not adopt the economic central planing of Eastern Germany?

Central Planning

Has two significant problems:

1. Too much information to process.
2. Too few incentives.

The Price System

What are the benefits of a free market economy: the price system?

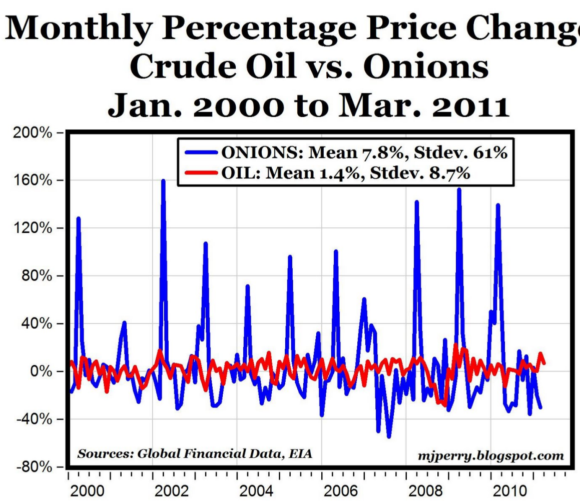
The Price System

Prices signal to resources exactly WHERE they are most valued

Prices solve the information and incentive problems

Discuss with your neighbor:

Successful economies are more likely to have many failing firms. If a nation's government instead made it impossible for inefficient firms to fail by giving them loans, cash grants, and other bailouts to stay in business, why is that nation likely to be poor?



Speculation

Speculation is the attempt to profit from future price changes.

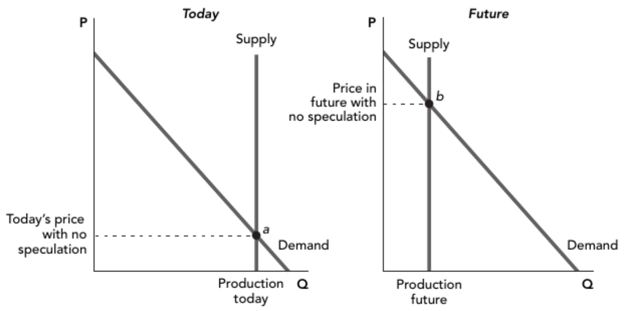
- If a speculator believes the supply of a good will decrease in the future (driving up its price), the speculator can make money by buying the good now when the price is low and selling the good in the future when the price is higher.

Speculators may not always be correct, but they have strong incentives to be as accurate as possible because when they are wrong, they lose money.

Speculation can smooth prices fluctuations.

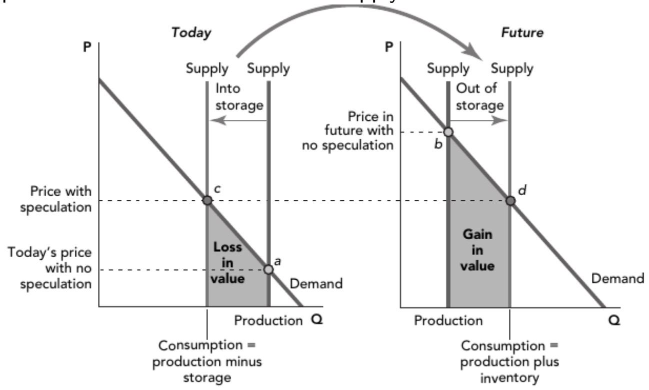
Prices and Speculation

Prices Rise Sharply after a Decrease in Supply Without Speculation



Prices and Speculation

Speculation Smooths Prices when Supply Decreases Price



Government Intervention: Price Ceilings

Seinfeld: The apartment

Price ceilings that involve a maximum price below the market price create five important effects.

What are these effects?

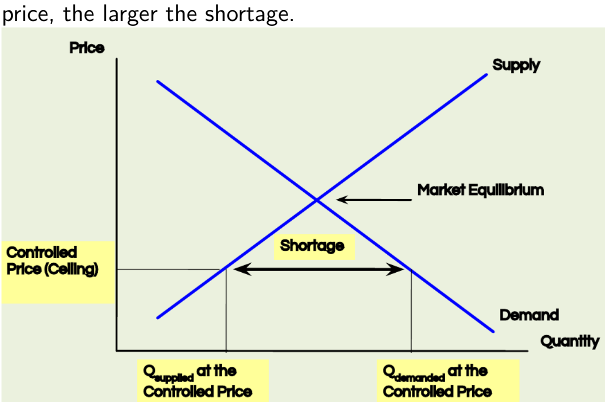
Price Ceilings

Price ceilings that involve a maximum price below the market price create five important effects.

1. Shortages
2. Reduction in Product Quality
3. Wasteful Lines and Other Costs of Search
4. Loss of Gains from Trade
5. Misallocation of Resources

1. When prices are held below the market price shortages are created.

Shortage = difference between Q_d and Q_s at the controlled price.
The lower the controlled price relative to the market equilibrium price, the larger the shortage.



2. Reduction of Product Quality

- At the controlled price, sellers have more customers than goods.
- In a free market, this would be an opportunity to profit by raising prices.
- But when prices are controlled, sellers cannot. Sellers respond to this problem in two ways:
  1. Reduce quality
  2. Reduce service

3.Price controls that create shortages lead to bribery and wasteful lines

- Shortages: not all buyers will be able to purchase the good.
- Normally, buyers would compete with each other by offering a higher price.
- If price is not allowed to rise, buyers must compete in other ways...

Wasteful Lines and Other Costs of Search

Some buyers may be willing to bribe sellers in order to obtain the good.

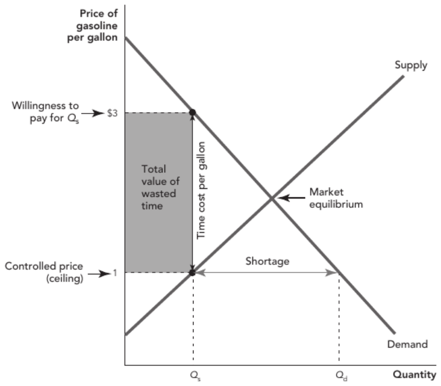
- The highest bribe a buyer would pay is the difference between his max price and the price ceiling.
- If bribes are common, then the total price of the good is the legal price plus the bribe.

Buyers can also compete with each other through their willingness to wait in line.

- The maximum wait time (translated into monetary terms) for a buyer is the difference between the max price and the price ceiling.
- So the total price of the good is the legal price plus the time costs.

Wasteful Lines and Other Costs of Search

Bribes and waits both lead to a total price that is greater than the controlled price, (but they are different.)



- Bribes involve a simple transfer from buyers to sellers.
- The time spent waiting in line, however, is simply lost – paying in time is much more wasteful.

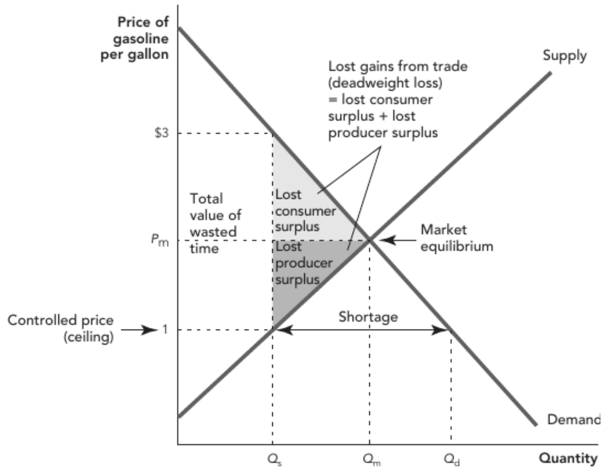
4.Price controls reduce the gains from trade.

- Price ceilings set below the market price cause Q_s to be less than the market Q.
- When Q is below the equilibrium market Q, consumers value the good more than the cost of its production.
- This represents a gain from trade that would be exploited (if the market were free).

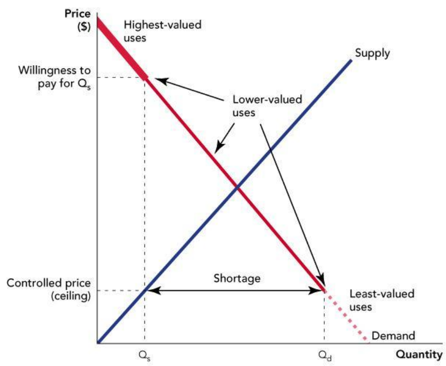
Dead-weight Loss is the total of lost consumer and producer surplus when all mutually profitable gains from trade are not exploited.

- Price ceilings create a dead-weight loss by forcing Q_s below the market Q.
- Buyers and sellers would both benefit from trade at a higher price, but cannot since it is illegal for price to rise.

4.Price controls reduce the gains from trade.



5. Price controls distort signals and eliminate incentives – leading to a misallocation of resources.



- Consumers who value a good most are prevented from signaling their preference (by offering sellers a higher price.)
- So producers have no incentive to supply the good to the "right" people first.
- As a result, goods are misallocated.

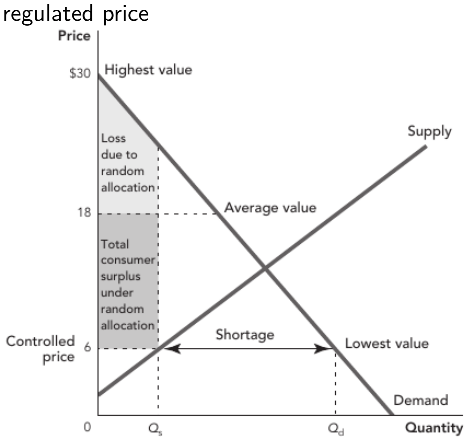
5. Price controls distort signals and eliminate incentives – leading to a misallocation of resources.

Lotteries are fair allocation mechanisms.

What happens to society's welfare if the good is randomly assigned to customers willing to pay the regulated price?

5. Price controls distort signals and eliminate incentives – leading to a misallocation of resources.

Random allocation among all who are willing to buy at the regulated price



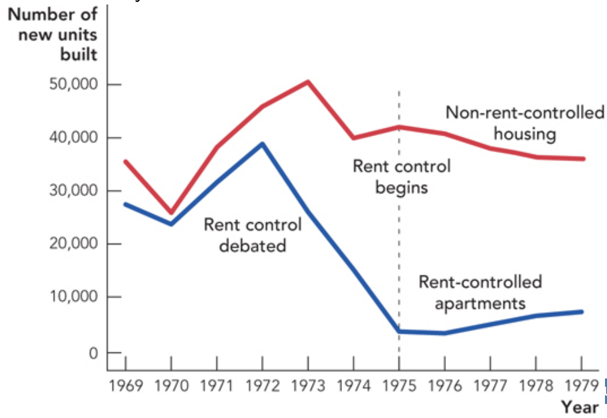
Consumer lobbying for price controls: Inelastic Supplies and Incentives to Restrict Prices

- When supply is inelastic, consumers have incentives to restrict prices
- When supply is inelastic and demand increases, prices increase causing consumers to lobby for price controls
- Rent control in New York City is an example

Rent Control

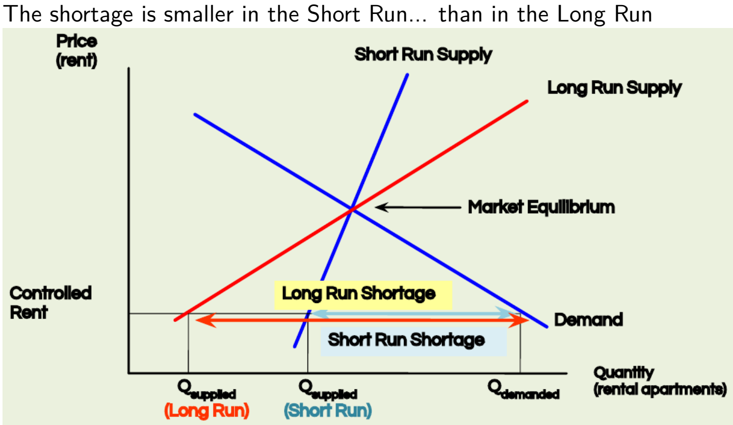
A regulation that prevents rents from rising to equilibrium levels.

- Rent control is a price ceiling whose effects worsen over time
- No one wants to build new apartments if the rents will be artificially low...



Rent Control

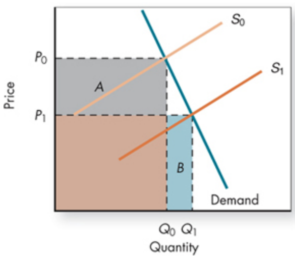
The shortage is smaller in the Short Run... than in the Long Run



So why do price controls ever get passed?

- The general public may not understand the nasty side-effects of price controls
- Shortages may benefit the ruling elite...
- In the former USSR, the communist party elite used Blat to obtain goods.
- Blat= having connections that can be used to get favors.
- The party elite can use their connections and power to obtain goods for themselves or others.
- Without such leverage their power dissipates.

Producers lobbying for Price controls: Inelastic Demand and Incentives to Restrict Supply



- When demand is inelastic, increases in productivity that shift the supply curve out result in lower revenue for the suppliers
- Suppliers have an incentive to restrict supply when demand is inelastic, because, by doing so, they will increase their revenues

Price floor: a minimum price enforced by law

Taxi Driver

What are the negative effects of price floors?

Price floor: a minimum price enforced by law

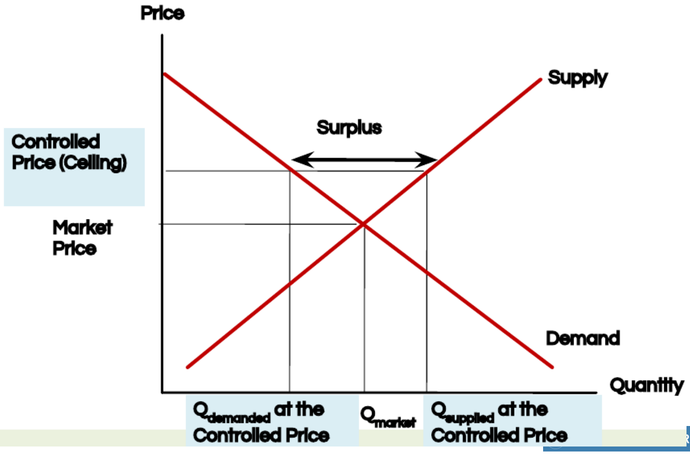
...not as common as price ceilings (but still important)

Price floors have four common effects:

1. Surpluses
2. Lost gains from trade (deadweight loss)
3. Wasteful increases in quality
4. A misallocation of resources

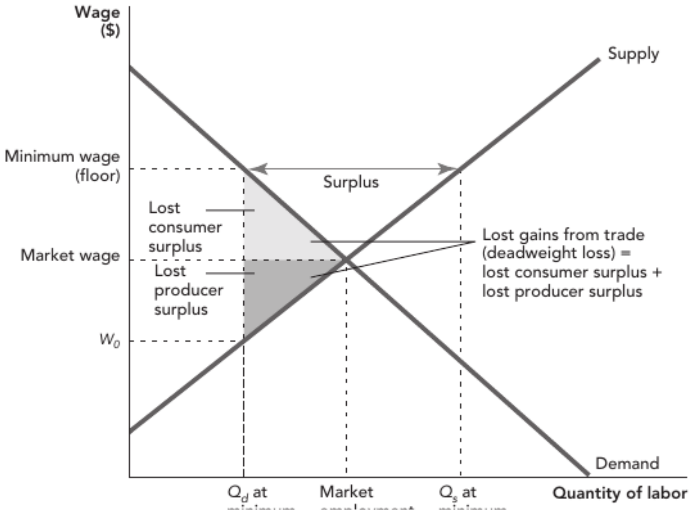
1. Surplus

When prices are held above the market price (price floor) quantity supplied exceeds the quantity demanded.



2. Lost Gains from Trade

Price floors reduce the gains from trade (create deadweight losses)



3. Wasteful Increase in Quality

Price floors that create surpluses lead to wasteful increases in quality.

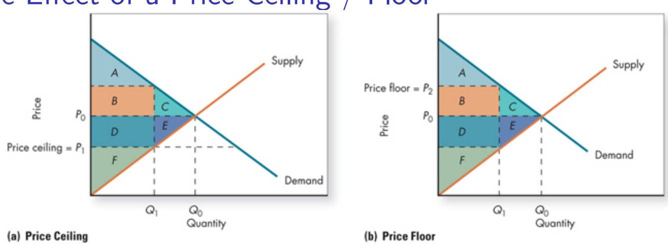
- Higher quality raises costs and reduces seller profit.
- Buyers get higher quality, but would prefer a lower price.
- Price floors encourage sellers to waste resources: higher quality than buyers would prefer

4. Misallocation of Resources

Price floors misallocate resources by:

- Allowing high-cost firms to operate.
- Preventing low-cost firms from entering the industry.

The Effect of a Price Ceiling / Floor



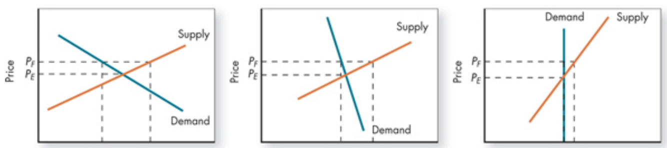
A price ceiling transfers surplus from produces to consumers, generates deadweight loss, and reduces quantity

A price floor transfers surplus from consumers to produces, generates deadweight loss, and reduces quantity

The Difference Between Taxes and Price Controls

- Price ceilings create shortages and taxes do not
- Taxes leave people free to choose how much to supply and consume as long as they pay the tax
- Shortages may also create black markets

Price Floors and Elasticity



(a) Price Floor with Elastic Supply and Demand (b) Price Floor with Elastic Supply and Inelastic Demand (c) Price Floor with Inelastic Supply and Demand

The excess supply created by a price floor is larger if demand and supply are more elastic

Government Intervention as Implicit Taxation

- Government intervention in the form of price controls could be viewed as a combination tax and subsidy,

  IFF there were no wasteful lines (time) and search costs, misallocation of resources, and changes in quality.
- An effective price ceiling is a government set price below the market equilibrium price
  - It acts as an implicit tax on producers and an implicit subsidy to consumers that causes a welfare loss identical to the loss from taxation
- An effective price floor is a government set price above the market equilibrium
  - It acts as a tax on consumers and a subsidy for producers that transfers consumer surplus to producers

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